2.3 Biological Environment

2.3.1 Natural Communities

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

Affected Environment

The information in this section is summarized from the Natural Environment Study prepared for the project (SWCA Environmental Consultants 2022).

The Biological Study Area includes all areas that could potentially be affected by the project. The project boundaries, characteristics of immediately surrounding areas, extent of development, type and proximity of natural land cover, hydrologic connectivity, and regional context of the project were used to determine the Biological Study Area. The Biological Study Area includes all areas that could potentially be affected, temporarily or permanently, by the project within the maximum footprint of all build alternatives at both interchanges.

Natural community/habitat types present within the Biological Study Area include riverine (stream), riparian woodland, mixed coast live oak woodland, eucalyptus woodland, mixed coniferous woodland, mixed woodland, developed/landscaped areas, annual grassland, and ruderal/disturbed vegetation. Constructed stormwater ditches are also present. Riverine and riparian forest habitats are associated with the riparian corridors of the streams and drainages within and adjacent to the Biological Study Area. Mixed coast live oak woodland, mixed woodland, mixed coniferous woodland, landscaped areas, and ruderal/disturbed areas are present in upland areas of the Biological Study Area. A combination of coast live oak (*Quercus agrifolia*) and coast redwood (*Sequoia sempervirens*) commonly grow along the edges of State Route 1 and many have either been planted or became established through natural succession.

Natural communities present within the Biological Study Area are detailed in Table 2-57, illustrated on Figures 2-23a through 2-23f at the end of this section, and described below the table.

Table 2-57. Natural Communities in the Biological Study Area

Land Cover	Acres	Percent of Biological Study Area
Annual Grassland	0.1	0.15%
Landscaped	6.7	11%
Developed	40	65%
Ditch	0.04	0.06%
Eucalyptus Woodland	0.13	0.2%
Mixed Coast Live Oak Woodland and Forest	2.56	4%
Mixed Coniferous Woodland	7.88	13%
Mixed Woodland	1.59	2.6%
Riparian Woodland	1.53	2.5%
Ruderal / Disturbed	1.09	1.8%
Stream	0.23	0.38%
Total	**61.85**	**100%**

Streams

Streams present in the Biological Study Area include Aptos Creek and Valencia Creek, which are both perennial. Streams provide important habitat for aquatic species, such as fish, amphibians, and turtles. Steelhead (*Oncorhynchus mykiss irideus*) are known to be seasonally present in Aptos and Valencia Creeks. Additional details on streams, ditches, and associated riparian areas are provided in Section 2.3.2, Wetlands and Other Waters.

Ditch

Roadside ditches occur along both sides of State Route 1 just east of the Santa Cruz Branch Line bridge crossing of Valencia Creek. These ditches provide minimal habitat value for wildlife.

Developed

Areas mapped as developed include roads and anthropogenic features such as parking lots. Vegetation in these areas, if present at all, is usually sparse, dominated by weedy herbaceous species. Developed land cover includes State Route 1 and adjacent roads. Wildlife species typically associated with developed areas include American crow (*Corvus brachyrhynchos*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*).

Landscaped

Landscaped areas of the Biological Study Area are characterized by ornamental vegetation. Due to its close proximity to the more expansive

developed areas, wildlife associated with landscaped vegetation is the same as associated developed cover.

Ruderal

Ruderal vegetation is characterized by nonnative forbs and grasses in a disturbed habitat typically along the edges of development or areas with frequent anthropogenic impacts (e.g., mowing). In the Biological Study Area, ruderal vegetation is found in the vicinity of State Route 1 and other roadside locations. Wildlife observed in ruderal areas was similar to more dominant, neighboring vegetation types.

Annual Grassland

Dominant species present in the Biological Study Area include wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), Italian wildrye (*Festuca perennis*), and short podded mustard (*Hirschfeldia incana*). This community is patchily present within undeveloped areas of the interchange. Wildlife observed in grassland areas was similar to more dominant, neighboring vegetation types.

Coast Live Oak Woodland and Forest

The coast live oak woodland and forest communities are dominated by coast live oak. Mixed coast live oak woodland exists throughout the Biological Study Area. The understory consists of both herbaceous species and woody shrubs, including milk thistle (*Silybum marianum*), poison oak (*Toxicodendron diversilobum*), sticky monkeyflower (*Diplacus aurantiacus*), coyote brush (*Baccharis pilularis*), coffeeberry (*Frangula californica*), and annual grasses.

Oak woodland typically supports a wide diversity of wildlife. Typical mammal species that may occur in this habitat include western gray squirrel *(Sciurus griseus*), blacktail deer (*Odocoileus hemionus columbianus*), raccoon, striped skunk, duskyfooted woodrat (*Neotoma fuscipes*), coyote (*Canis latrans*), Virginia opossum, and California ground squirrel (*Otospermophilus beecheyii*). Birds that my occur include plain titmouse (*Parus inornatus*), mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), acorn woodpecker (*Melanerpes formicivorous*), California towhee (*Pipilo crissalis*), Stellar's jay (*Cyanocitta stelleri*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperi*), and great-horned owl (*Bubo virginianus*). Reptiles that may occur within this habitat type include gopher snake (*Pituophis catenifer*) and western fence lizard (*Sceloporus occidentalis*).

Based on habitat mapping within the Biological Study Area (Figures 2-23a through 2-23f), a total of 2.56 acres of mixed coast live oak woodland are present.

Mixed Coniferous Woodland

This habitat is dominated by coniferous tree species such as Monterey cypress (*Hesperocyparis macrocarpa*) and Monterey pine (*Pinus radiata*). Coast redwood trees are also often present. These species primarily occur in planted or ornamental stands. This habitat is common in the Biological Study Area. Understory species are similar to those in mixed coast live oak woodland.

This vegetation community is sometimes referred to as *Hesperocyparis macrocarpa* Woodland Special Stands or Monterey Cypress Stands; however, it is referred to as mixed coniferous woodlands in this report because they are not naturally occurring. Naturally occurring Monterey cypress stands are considered a sensitive natural community, but the Biological Study Area is outside the natural range of the species. The Monterey cypress trees in the Biological Study Area were planted; therefore, this vegetation type is not considered a sensitive natural community within the Biological Study Area.

Riparian Woodland

The riparian woodlands in the Biological Study Area can be best characterized as bigleaf maple forest and woodland (*Acer macrophyllum* Forest & Woodland Alliance). This habitat is associated with the riparian corridors of the streams and drainages within and adjacent to the Biological Study Area. The canopy is dominated by bigleaf maple (*Acer macrophyllum*), coast live oak, arroyo willow (*Salix lasiolepis*), and coast redwood. The understory commonly consists of California blackberry (*Rubus ursinus*), English ivy (*Hedera helix*), and various annual grasses and other herbaceous plants.

Eucalyptus Woodland

Stands of blue gum eucalyptus (*Eucalyptus globulus*) are located in the western portion of the Biological Study Area. This habitat has sparse to intermittent herbaceous layers. Eucalyptus woodland can provide nesting habitat for raptors and may also provide overwintering habitat for monarch butterflies (*Danaus plexippus*).

Environmental Consequences

Build Alternative

Habitats and Natural Communities of Special Concern

Implementation of the Build Alternative would result in a total permanent impact of 6.897 acres and total temporary impact of 13.663 acres on land cover in the Biological Study Area. Permanent and temporary impacts by land cover are included in Table 2-58. Ditch, riparian woodland, and stream overlap with categories covered in Section 2.3.2, Wetlands.

Table 2-58. Summary of Land Cover Impacts for the Build Alternative

Land Cover	Temporary Impact (Acres)	Permanent Impact (Acres)
Annual Grassland	0.043	0.048
Ditch	0.038	0
Eucalyptus Woodland	0.107	0.020
Landscaped	2.615	3.035
Mixed Coast Live Oak Woodland	1.565	1.019
Mixed Coniferous Woodland	5.639	2.058
Mixed Woodland	1.150	0.441
Riparian Woodland	1.471	0.081
Ruderal / Disturbed	0.846	0.243
Stream	0.232	0
Total	**13.663**	**6.897**

The sensitive habitats and natural communities that occur in the Biological Study Area and will be affected by the project include potentially jurisdictional waters, coast live oak woodlands, and critical habitat for Central California coast steelhead. The following subsections discuss impacts on these sensitive habitats.

Coast Live Oak Woodlands

Coast live oak woodlands are considered sensitive under CEQA Section 21083.4. In addition, coast live oak woodlands are considered sensitive by local policies, including the Santa Cruz County Local Coastal Program.

The Build Alternative would result in temporary impacts on 1.564 acres and permanent impacts on 1.019 acres of mixed coast live oak woodland. These impacts are presented in terms of canopy cover acreage and do not quantify the numbers and trunk sizes (in diameter at breast height) of oak trees potentially affected. Oak trees to be removed for construction would be surveyed and tallied during the permitting phase of the project.

Critical Habitat

The U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service designated critical habitat to protect areas that are essential to the survival of federally listed species of plants and wildlife.

Critical habitat was established for the Central California coast steelhead distinct population segment on July 10, 2000 (70 *Federal Register* 37160). Within the Biological Study Area, Aptos Creek and tributaries are considered to be critical habitat for Central California coast steelhead within the critical habitat unit Aptos-Soquel Hydrologic Sub-area 330413 (70 Federal Register 37160).

These units contain the six primary constituent elements that are critical to the conservation of the species (70 FR 52630):

1. Freshwater Spawning sites
2. Freshwater rearing sites
3. Freshwater migration corridors
4. Estuarine areas
5. Nearshore marine areas
6. Offshore marine areas

The National Marine Fisheries Service has not designated essential fish habitat for steelhead.

Project activities could result in temporary or permanent impacts on aquatic and riparian habitats along Aptos and Valencia Creeks. Construction activities involving in-water work and dewatering could result in temporary alterations to in-channel conditions within Aptos and Valencia Creeks and adjacent channel banks. Project activities could disturb channel bank and bed material and increase the potential for erosion and sediment transport downstream. If erosion did occur, increased suspended sediment load could impair water quality or cover streambed substrate downstream of the Biological Study Area. Water quality degradation resulting from project activities could potentially affect steelhead habitat. The use of mechanized equipment could also lead to the unintentional release of fuels, lubricants, solvents, or other pollutants into the channel, thus affecting water quality. Additionally, riparian habitat in the Biological Study Area provides cover to Aptos and Valencia Creeks, providing adequate shade to maintain water temperatures during summer months in the channel.

Such effects would be avoided and minimized through avoidance and minimization measures and Best Management Practices that are incorporated as part of the project. Due to the temporary impacts of dewatering, there will be short term impacts to benthic macro invertebrates, which will lead to a temporal loss of habitat. Therefore, the project may affect, and is likely to adversely affect, Central California coast steelhead critical habitat.

Tree Removal

Tree surveys were conducted in the project area in 2021 for both the highway component and the trail component.

- Approximately 1,112 trees would be removed along the highway alignment, including 182 county significant trees.
- Approximately 527 trees would be removed along the Coastal Rail Trail, including 121 county significant trees.

Tree removal estimates are conservative for the purposes of this analysis and will be further refined during the final design phase.

No-Build Alternative

The No-Build (No-Action) Alternative would not result in habitat changes or increases in impervious surface area or other structures. Therefore, there would be no impacts on the habitats discussed above.

Avoidance, Minimization, and/or Mitigation Measures

The project has the potential to affect riparian areas and other waters within the Biological Study Area. Recommended measures include the following:

AMM BIO-1: Prior to construction and if required, the Santa Cruz County Regional Transportation Commission will obtain a 404 permit (anticipated to be Nationwide Permit 14 for linear transportation projects) from the U.S. Army Corps of Engineers, a 401 Certification and/or Waste Discharge Requirements from the Regional Water Quality Control Board, a Section 1602 Streambed Alteration Agreement from California Department of Fish and Wildlife, and a Coastal Development Permit (CDP) or waiver from the California Coastal Commission/applicable Local Coastal Programs.

AMM BIO-2: Prior to construction, Santa Cruz County Regional Transportation Commission will prepare a Mitigation and Monitoring Plan (MMP) to mitigate impacts on vegetation and natural habitats, including jurisdictional areas. The MMP will be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. Santa Cruz County Regional Transportation Commission will implement the MMP as necessary during construction and immediately following project completion.

AMM BIO-3: Prior to any ground-disturbing activities, environmentally sensitive area fencing will be installed around jurisdictional waters and the dripline of trees to be protected within project limits. Environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.

AMM BIO-4: A qualified biological monitor(s) will ensure compliance with avoidance and minimization measures within the project environmental

documents. Full-time monitoring will occur during vegetation removal and initial ground disturbance, water diversion implementation and removal, installation of temporary environmentally sensitive area fencing in jurisdictional areas, and temporary erosion control installation. Monitoring may be reduced to part time once construction activities are underway and the potential for additional impacts is reduced.

AMM BIO-5: During project activities, the biological monitor(s) will coordinate with federal, state, and local agencies and the construction contractor to ensure construction schedules comply with biological requirements.

AMM BIO-6: Prior to project implementation, the project site will be clearly flagged or fenced so that the contractor is aware of the limits of allowable site access and disturbance. Areas within the designated project site that do not require regular access will be clearly flagged as off-limit areas to avoid unnecessary damage to sensitive habitats or existing vegetation within the project site.

AMM BIO-7: Prior to project implementation, a project Erosion Control Plan will be prepared.

AMM BIO-8: During project activities, erosion control measures will be implemented. Fiber rolls and sediment barriers (e.g., straw bales) will be installed between the project site and adjacent wetlands and other waters. At a minimum, these measures will be checked and maintained on a daily basis throughout the construction period. The contractor will also apply adequate dust control techniques, such as site watering, during construction.

AMM BIO-9: To control erosion during and after project implementation, standard Caltrans Best Management Practices will be implemented.

AMM BIO-10: During project activities, work occurring within stream channels will be conducted during the dry season if possible (June 1–September 30). If in-stream work will be necessary, a Diversion and Dewatering Plan will be prepared, submitted for agency approval, and implemented.

AMM BIO-11: Prior to the onset of work, a Hazardous Materials Response Plan will be prepared to allow a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

AMM BIO-12: During project activities, the cleaning and refueling of mobile equipment and vehicles will occur only within a designated staging area and at least 100 feet from wetlands, other waters, or other aquatic areas. This staging area will conform to Best Management Practices

applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills. Stationary equipment will be in secondary containment at all times when within 100 feet of streams.

AMM BIO-13: During project activities, all project-related hazardous materials spills within the project site will be cleaned up immediately. Spill prevention and cleanup materials will be on-site at all times during construction.

AMM BIO-14: The contractor will ensure that the spread or introduction of invasive exotic plant species is avoided to the maximum extent possible. When practicable, invasive exotic plants in the project site will be removed and properly disposed.

AMM BIO-15: During construction, trash will be contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

AMM BIO-16: During project activities, no pets will be allowed on the construction site.

Mitigation Measure BIO-17: The goal of compensatory mitigation is to prevent a net loss of wetlands or other aquatic resource acreage, function, and value. Several types of compensatory mitigation are available to offset impacts on jurisdictional waters, including creation, restoration, enhancement, and preservation of either on-site or off-site aquatic resources.

Affected jurisdictional waters (including federal, state, and/or Coastal Zone wetlands, other waters, and riparian areas) have typically been restored at a 1 to 1 ratio for temporary impacts and mitigated at a 3 to 1 ratio for permanent impacts; the actual mitigation ratio required by the relevant agencies will be negotiated during the permitting process. Compensatory mitigation options will include creation, restoration, enhancement, and preservation implemented either on-site (preferred) or off-site. At a minimum, restoration and mitigation plantings will achieve 75% survival of required replacement plantings at the end of a 5-year period and require no further maintenance for survival. Off-site mitigation, if implemented, will be conducted within the watershed that is being affected, if feasible. Compensatory mitigation will be implemented immediately following project completion. Compensatory mitigation plantings will be monitored on a quarterly basis. Any required maintenance will also occur on a quarterly basis. Maintenance activities will include weeding, debris removal, replanting (if necessary), repair of any vandalism, fertilizing, and/or pest control. Maintenance activities will be dictated by the results of the quarterly monitoring effort. Santa Cruz County Regional

Transportation Commission will be responsible for submitting quarterly reports and annual monitoring reports to Caltrans and the affected regulatory agencies. The annual monitoring report submitted at Year 5 will serve as a final completion report should the mitigation be successful.

The following measures are recommended for coast live oak woodland habitat.

AMM BIO-18: All coast live oak woodland and individual oaks that are considered "significant trees" by the County of Santa Cruz and that are not planned for removal will be delineated on the project plans and provided protective fencing at a distance no less than the dripline of the affected tree canopy. Project equipment will not be permitted to enter the dripline of the coast live oak dripline canopy at any time during the length of the project.

AMM BIO-19: If work is required within the dripline of a "significant tree", a licensed arborist will be present to supervise all ground disturbances within the critical root zone and activities that may affect branches. The arborist will provide guidance such as temporary damaged root protection, timing between impact and root treatment by arborist, appropriate use of air spade or hand tools to minimize tree damage specific to the action proposed, and to treat root zone and branch damage.

During construction and upon completion of construction the licensed arborist will provide treatment, as the licensed arborist determines is appropriate, to maintain and improve the health of the tree, including pruning of any broken branches or roots, pruning if needed of the broken main stem, and soil supplement and watering programs. All root pruning will be completed with sharpened hand pruners. Pruned roots will be immediately covered with soil or moist fabric. Damaged roots will be treated within 24 hours by a qualified tree specialist to inhibit fungus, insects, or other disease damage.

AMM BIO-20: During project activities, erosion control measures will be implemented. Fiber rolls, and barriers (e.g., hay bales) will be installed between the project site and adjacent coast live oak woodlands. At a minimum, these measures will be checked and maintained daily throughout the construction period. The contractor will also apply adequate dust control techniques, such as site watering, during construction.

AMM BIO-21: During project activities, the cleaning and refueling of mobile equipment and vehicles will occur only within a designated staging area. This staging area will conform to Best Management Practices applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles will be checked and maintained daily to ensure proper operation and avoid potential leaks or spills.

Mitigation Measure BIO-22: Any coast live oak tree that is considered a "significant tree" by the County of Santa Cruz is removed will be replaced at a 10 to 1 ratio. For trees that have been retained but have sustained impacts within their critical root zone, the impacts will be mitigated as follows: impacts on less than 10% of the tree's critical root zone and canopy would be mitigated at a 2 to 1 ratio (plant two trees for each tree affected); impacts over 10% and less than 50% of the tree's critical root zone and/or canopy would be mitigated at a 3 to 1 ratio; impacts on more than 50% of the trees' critical root zone would require mitigation at a 4 to 1 ratio.

Oak tree replacement efforts will achieve 75% success at the end of a 5-year period and require no further maintenance for survival. The location of these replacement plantings will be on-site, to the maximum extent practicable, and closely associated with existing coast live oak woodland habitat for the purposes of providing continuity with the existing coast live oak woodland habitat. If on-site mitigation is not feasible, off-site locations may be acceptable if they are within the Aptos Creek watershed. The compensatory mitigation will be implemented immediately following project completion. Compensatory mitigation plantings will be monitored on a quarterly basis. Any required maintenance will also occur on a quarterly basis. Maintenance activities will include weeding, debris removal, replanting (if necessary), repair of any vandalism, fertilizing, and/or pest control. Maintenance activities will be dictated by the results of the quarterly monitoring effort. Santa Cruz County Regional Transportation Commission will be responsible for submitting quarterly reports, annual monitoring reports, and a final completion report to Caltrans and the affected regulatory agencies. The annual monitoring report submitted at Year 5 will serve as a final completion report should the mitigation be successful.

The following measure is recommended to address impacts on critical habitat for the Central California coast steelhead distinct population segment:

AMM BIO-23: If in-stream work is proposed to occur in coastal streams, incidental take authorization from National Marine Fisheries Service through a federal Endangered Species Act Section 7 Biological Opinion and Incidental Take Statement will be acquired, if determined necessary by National Marine Fisheries Service.

Mitigation Measure BIO-24: Measures to avoid, minimize, and/or mitigate impacts discussed in Section 2.3.2, Wetlands and Other Waters will be applied to any loss of aquatic and riparian vegetation within steelhead critical habitat. Additional mitigation may be directed by regulatory agencies.

References

SWCA Environmental Consultants. 2021. Tree Survey Memorandum for the State Highway Route 1 Auxiliary Lanes and Bus-on-Shoulder Improvements (Freedom Boulevard to state Park Drive), Santa Cruz County, California/SWCA Project Number 067479. April, 222021.

SWCA Environmental Consultants. 2022. Natural Environmental Study. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project. Santa Cruz County, California. September.

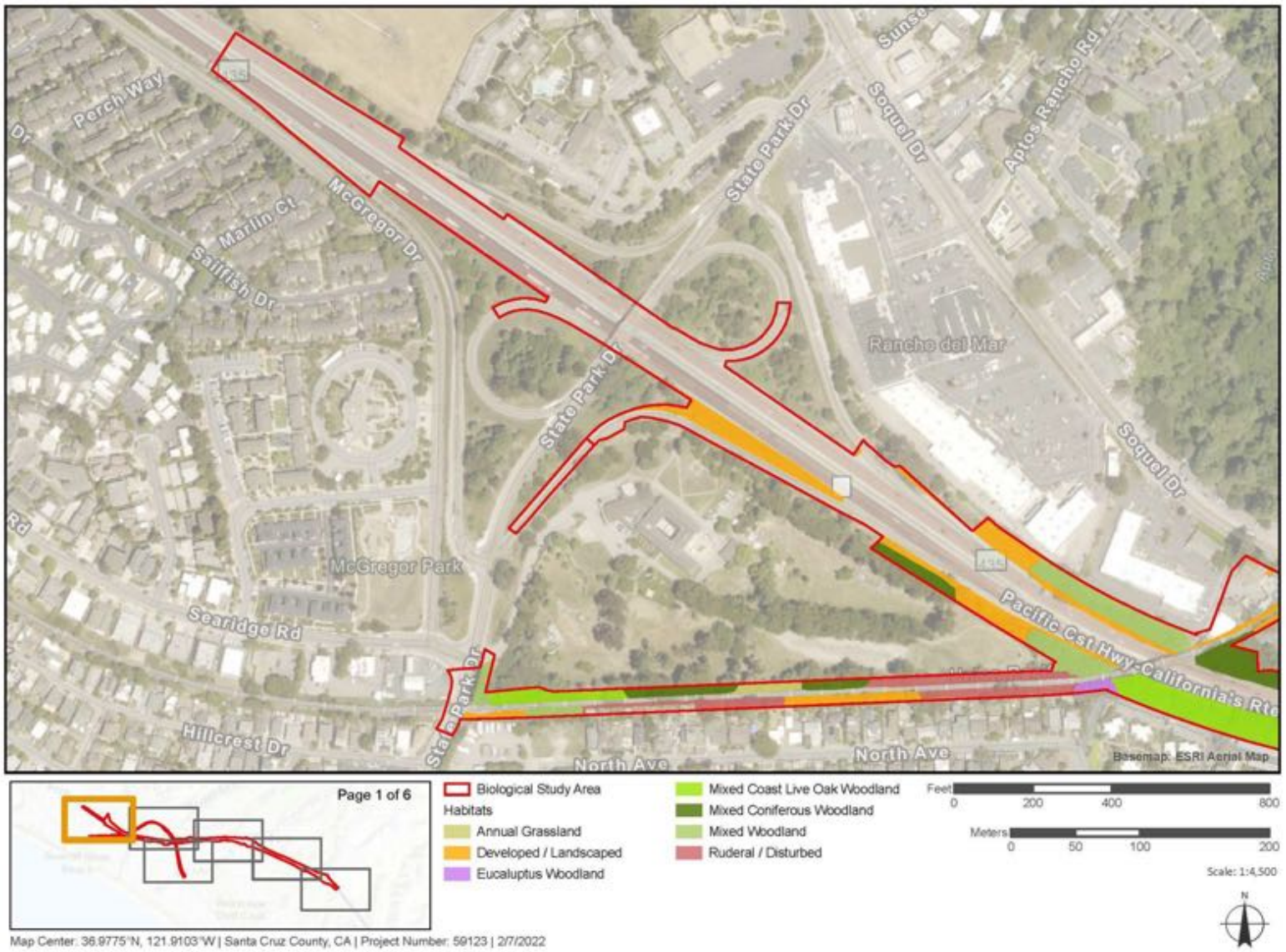


Figure 2-23a. Land Cover in the Biological Study Area

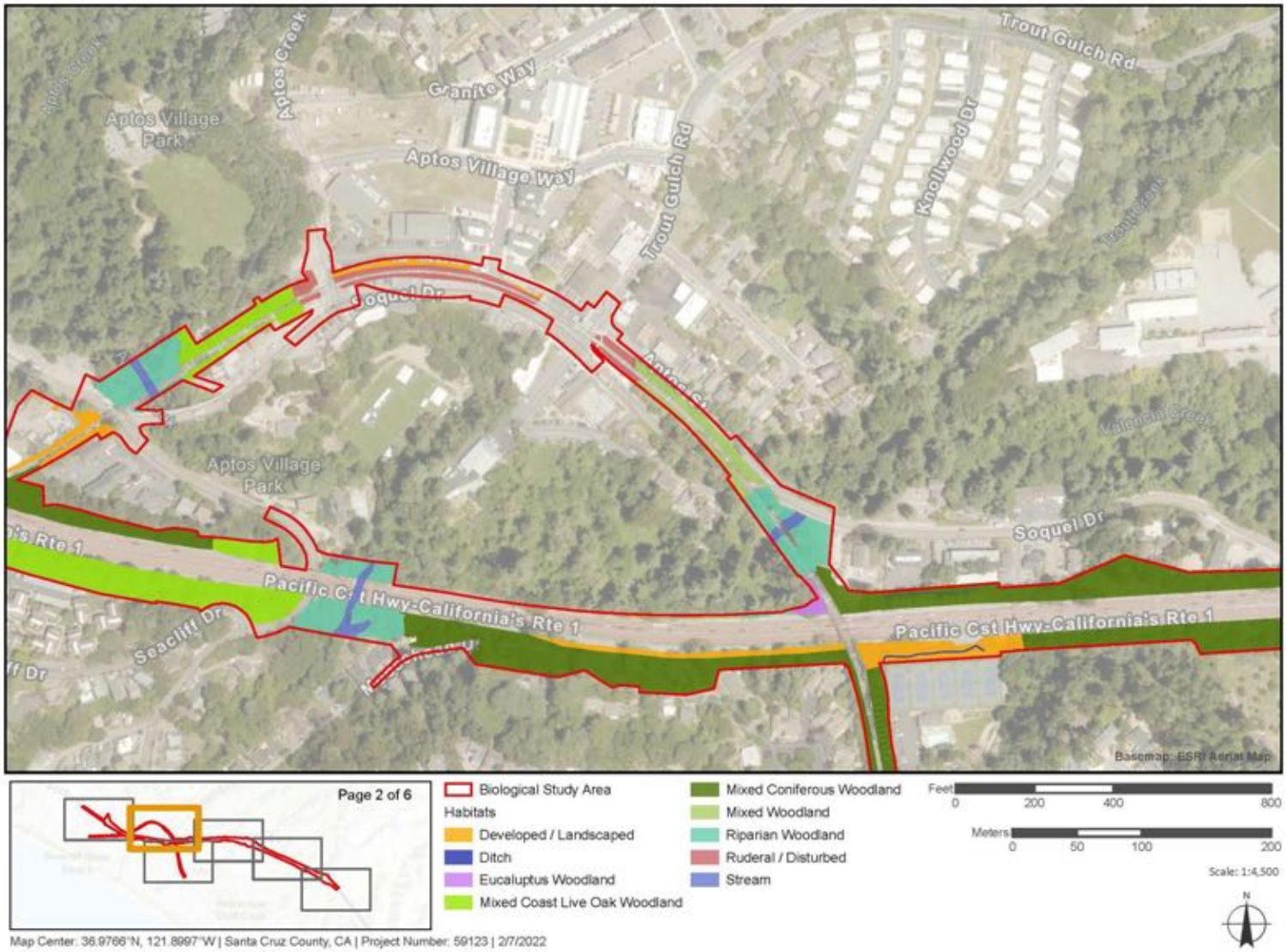
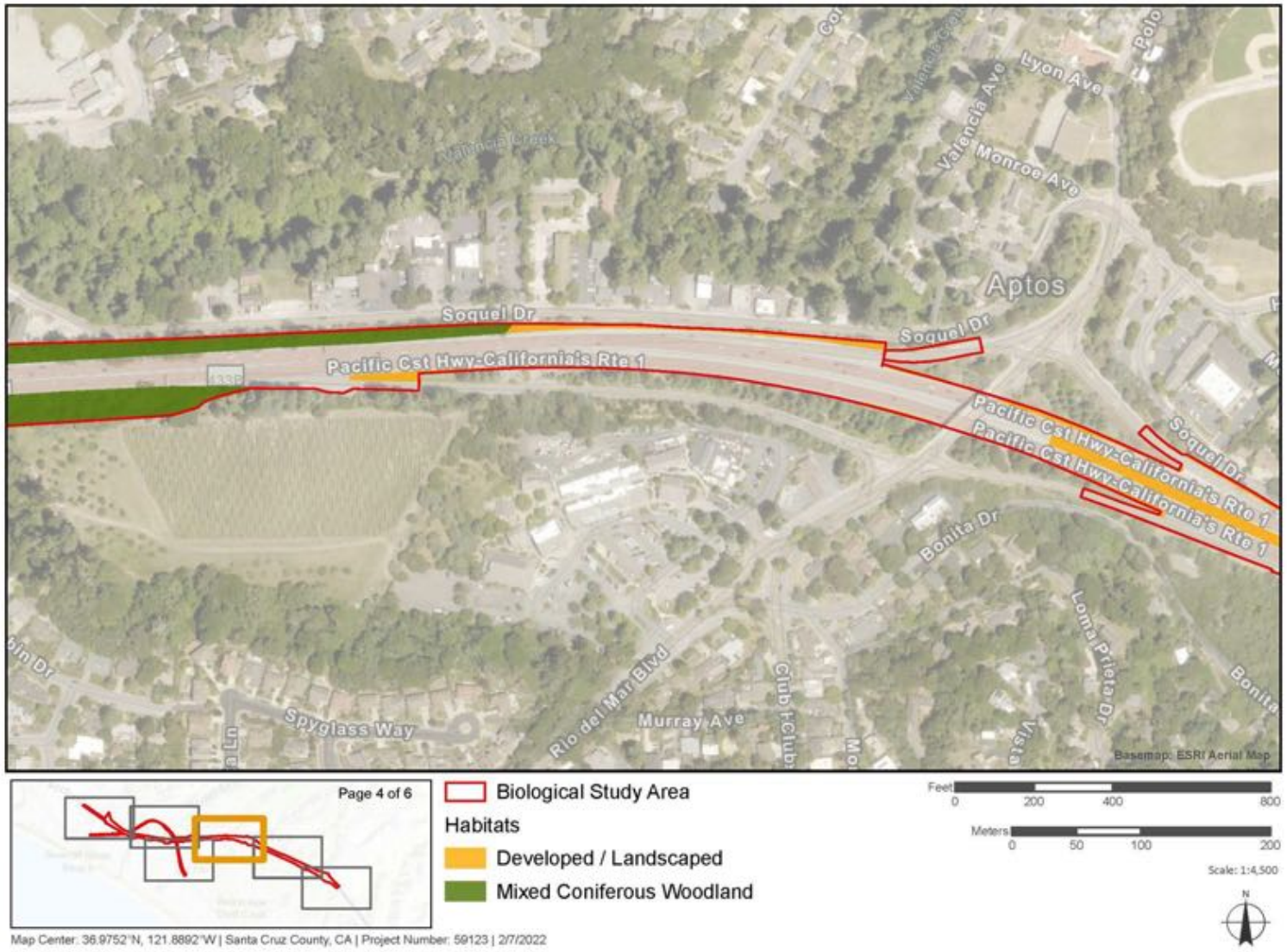


Figure 2-23b. Land Cover in the Biological Study Area

Figure 2-23c. Land Cover in the Biological Study Area



Aerial map showing the project biological study area and various land covers.

Figure 2-23d. Land Cover in the Biological Study Area

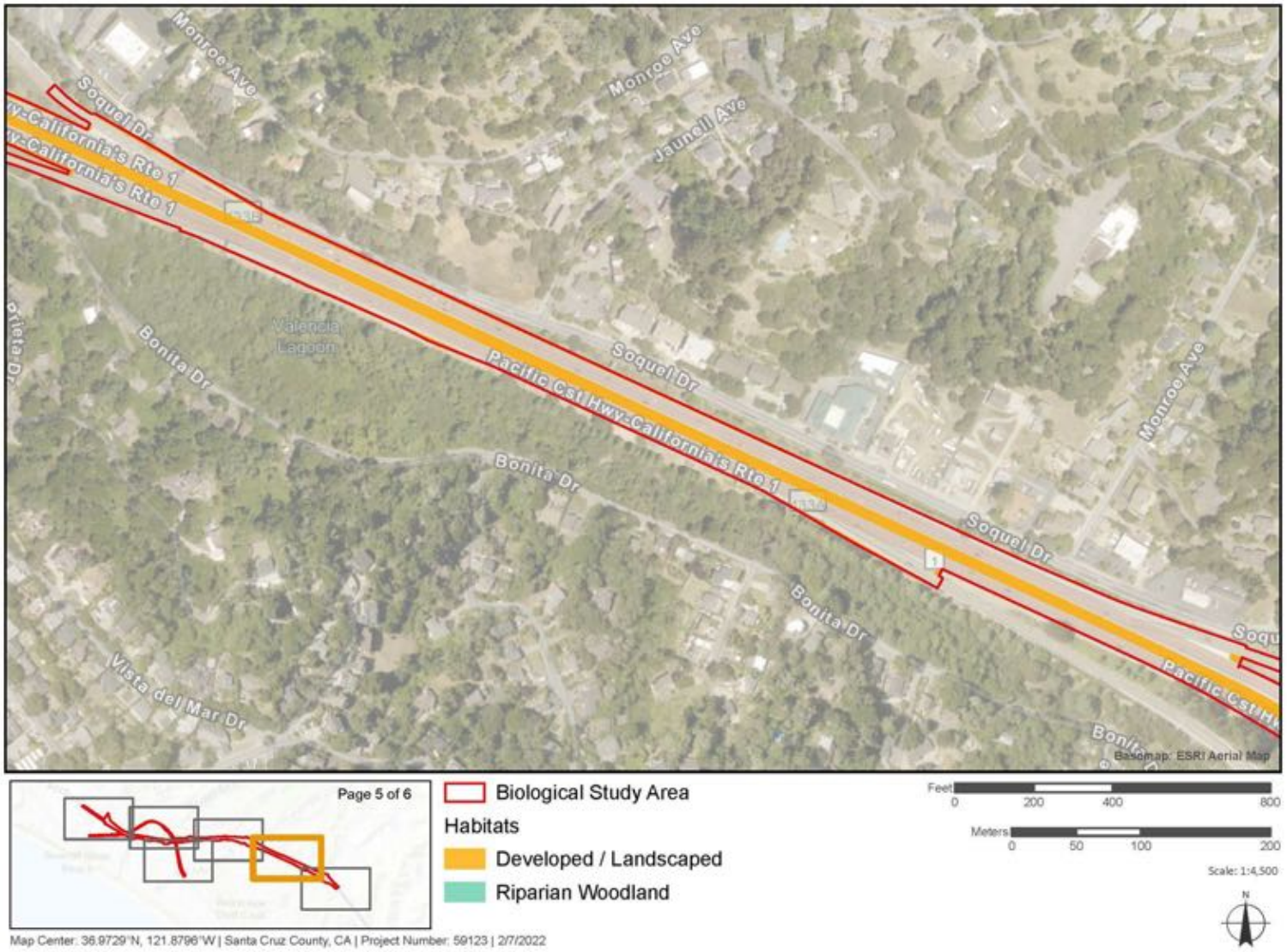


Figure 2-23e. Land Cover in the Biological Study Area

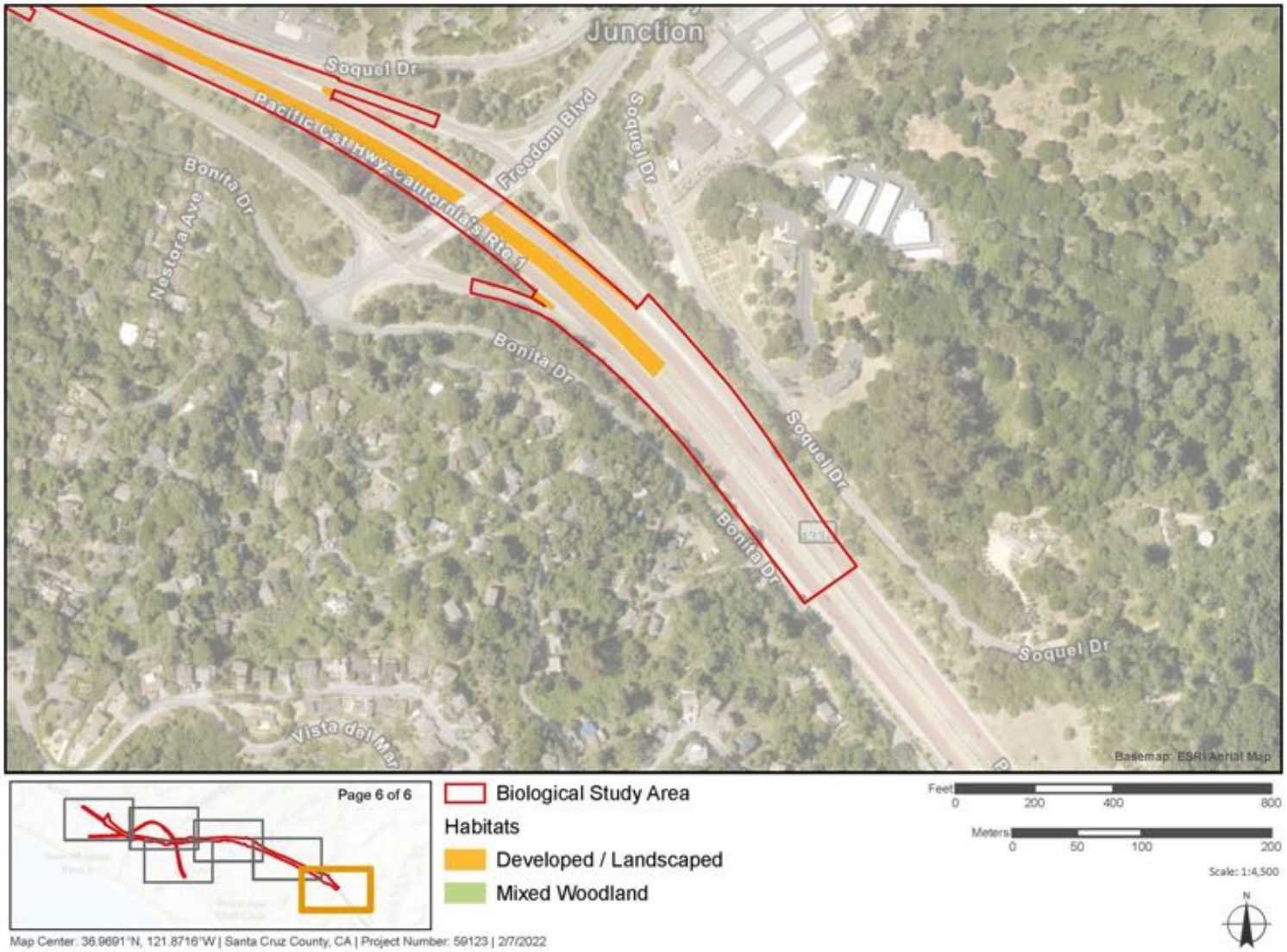


Figure 2-23f. Land Cover in the Biological Study Area

2.3.2 Wetlands and Other Waters

Regulatory Setting

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

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

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

Ordinarily, projects that do not meet the criteria for a regional or nationwide permit may be permitted under one of U.S. Army Corps of Engineer's individual permits. There are two types of individual permits: standard permits and letters of permission. For individual permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (Guidelines) (40 Code of Federal Regulations Part 230), and whether permit approval is in the public interest. The Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the U.S. Army Corps of Engineers

may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the California Coastal Commission may also be involved. Sections 1600–1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify California Department of Fish and Wildlife before beginning construction. If California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement is required. California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers and/or Regional Water Quality Control Board may be included in the area covered by a Lake or Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife when they occur as part of a stream or lake system.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Water Quality Control Act are permitted by waste discharge requirements and would be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. See Section 2.2.2, *Water Quality*, for more details.

Regional Water Quality Control Board's jurisdiction (i.e., waters of the State) is conservatively interpreted as including natural streambeds, areas extending from the streambed/thalweg to the outer edge of adjacent riparian vegetation, isolated wetlands or waters that may not be under U.S. Army Corps of

Engineers jurisdiction, artificial ditches (non-agricultural) that could be relocated waters of the State and have become relatively permanent features of the natural landscape, and excavated ponds or other artificial features that collect and/or convey surface water. Based on previous experience with the Central Coast Regional Water Quality Control Board, their interpretation of state jurisdiction includes streambanks and riparian areas, despite the lack of a statewide definition and methodology for limits of waters of the State.

Affected Environment

The information in this section is summarized from the Natural Environment Study prepared for the project (SWCA Environmental Consultants 2022a) and the Aquatic Resources Delineation Report) (ARDR) prepared for the project (SWCA Environmental Consultants 2022b).

The biological study area contains 0.226 acre of potentially jurisdictional non-wetland waters of the U.S. No jurisdictional wetlands of the U.S. were delineated within the Biological Study Area.

The aquatic resources delineation report identified potential jurisdictional waters of the state within the Biological Study Area (Figures 2-24a through 2-24c). These include 1.209 acres of riparian non-wetlands (i.e., riparian woodland), 0.226 acre of streambed (i.e., stream), and 0.038 acre of ditch for a total of 1.473 acres that may fall under the jurisdiction of Regional Water Quality Control Board and the California Department of Fish and Wildlife. Streams are waters of the state that are the same areas noted above as federal waters of the U.S., considered other waters. Waters of the state that are characterized as riparian non-wetlands consist of riparian vegetation that extends above the ordinary high-water mark and lacks one or more of the three wetland parameters; this is by far the largest potentially jurisdictional aquatic feature within the Biological Study Area in terms of acreage. The ditches on either side of State Route 1 were also assessed as qualifying as potential waters of the state. No jurisdictional wetland waters of the U.S. that meet the State Water Resources Control Board are present in the Biological Study Area.

The jurisdictional delineation identified potential jurisdictional coastal zone aquatic resources within the Biological Study Area. These include 0.562 acre of coastal zone riparian non-wetlands and 0.135 acre of coastal zone stream for a total of 0.697 acre that may fall under the jurisdiction of the California Coastal Commission and may be considered environmentally sensitive habitat areas under the County of Santa Cruz Local Coastal Program. Coastal zone riparian non-wetlands and stream are roughly equivalent to the descriptions above for waters of the state (riparian non-wetlands, and streambed, respectively). In the coastal areas of the Biological Study Area, the riparian non-wetland areas were evaluated based on the coastal one-parameter wetland conditions and were found not to be coastal wetlands. The ditches on either side of State Route 1 have been excluded because this type

of anthropogenic feature is not regulated as an environmentally sensitive habitat area based on review of Local Coastal Program documentation.

Finally, the findings are considered preliminary. Areas of potential jurisdiction are subject to final verification and approval by the regulatory agencies (i.e., U.S. Army Corps of Engineers, Regional Water Quality Control Board, the California Department of Fish and Wildlife, and California Coastal Commission/Local Coastal Programs) and will be confirmed during the permitting phase of the project.

Environmental Consequences

The potentially jurisdictional waters present within the Biological Study Area provide essential ecosystem services that include habitat for plants and wildlife, water quality, and ecological functions. Project-related construction activities have the potential to affect water quality from erosion and sedimentation that could affect the overall function and value of potentially affected features. This could, in turn, result in deleterious effects on the health of wildlife species present and the loss or degradation of habitat for special-status wildlife species within the Biological Study Area and downstream. The Build Alternative would require the construction of bridges that would cross Aptos and Valencia Creeks. This activity would result in permanent and temporary fill within Aptos Creek, temporary fill within Valencia Creek, and surrounding areas.

Build Alternative

Direct impacts on non-wetland waters are related to adding structural fill within jurisdictional waters. Therefore, the impacts of the build alternative, including the State Route 1 widening and trail construction, are combined and discussed collectively in this section.

The Build Alternative would result in temporary impacts on 0.226 acre of potentially jurisdictional waters of the U.S. in the Biological Study Area (Table 2-59). It would result in temporary impacts on 1.473 acres and permanent impacts on 0.061 acre of potentially jurisdictional waters of the state and areas considered jurisdictional by the California Department of Fish and Wildlife and the Regional Water Quality Control Board in the Biological Study Area. It would result in temporary impacts on 0.697 acre and permanent impacts on 0.061 acre of waters potentially considered jurisdictional within the coastal zone. In addition, temporary creek diversions will be needed on the upstream side of the construction zones along Aptos Creek and Valencia Creek to support bridge work including new foundations for the bridge columns in Aptos Creek and interim fish passage improvements along the Valencia Creek Arch Culvert. Plans for these improvements are currently in progress, and the Santa Cruz Regional Transportation Commission is in coordination with the California Department of Fish and Wildlife to identify the temporary fish passage design.

The project will implement stormwater Best Management Practices consistent with Caltrans' Statewide Storm Water Management Plan as required under the Construction General Permit. The avoidance and minimization measures described below would reduce potential impacts on sensitive habitats, including jurisdictional waters. Mitigation Measure BIO-17 would compensate for impacts on jurisdictional waters. See Section 2.3.1, *Natural Communities*, for full text of the mitigation measure.

Table 2-59. Summary of Aquatic Resources Impacts

Jurisdiction	Temporary Impacts (Acres)	Permanent Impacts (Acres)
U.S. Army Corps of Engineers - Waters of the U.S. (Other Waters – Perennial Stream)	0.226	0
U.S. Army Corps of Engineers - Waters Total Potential U.S. Army Corps of Engineers Jurisdiction Impacts	0.226	0
Regional Water Quality Control Board - Waters of the State (Riparian Non-Wetlands)	1.209	0.061
Regional Water Quality Control Board - Waters of the State (Streambed)	0.226	0
Regional Water Quality Control Board - Waters of the State (Ditch)	0.038	0
Regional Water Quality Control Board - Total Potential Regional Water Quality Control Board Jurisdiction	1.473	0.061
California Department of Fish and Wildlife - Riparian Non-Wetlands	1.209	0.061
California Department of Fish and Wildlife - Streambed	0.226	0
California Department of Fish and Wildlife - Ditch	0.038	0
Total Potential California Department of Fish and Wildlife Jurisdiction	1.473	0.061
California Coastal Commission - Coastal Zone Riparian Non-Wetlands	0.562	0.061
California Coastal Commission - Coastal Zone Stream	0.135	0
California Coastal Commission - Total Potential Coastal Zone/California Coastal Commission Jurisdiction	0.697	0.061

No-Build Alternative

No project activities would occur; therefore, no impacts on aquatic resources or other habitats of concern would occur.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures BIO-1 through BIO-16, as identified in Section 2.3.1, are recommended to avoid and minimize potential impacts on riparian areas and other waters within the Biological Study Area. Mitigation Measure BIO-17 would compensate for impacts on jurisdictional waters. See Section 2.3.1 for full text of the mitigation measure.

References

SWCA Environmental Consultants. 2022a. Natural Environmental Study. For the State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project. San Luis Obispo. Final. September.

SWCA Environmental Consultants. 2022b. Aquatic Resources Delineation Report for the State Highway Route 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Boulevard to State Park Drive—and Coastal Rail Trail Segment 12 Project, Santa Cruz County, California. May.

Figure 2-24a. Jurisdictional Waters

Figure 2-24b. Jurisdictional Waters

Figure 2-24c. Jurisdictional Waters

2.3.3 Plant Species

Regulatory Setting

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

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

The regulatory requirements for the Federal Endangered Species Act can be found at 16 United States Code (U.S. Code) Section 1531 et seq. See also 50 Code of Federal Regulations Part 402. The regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code Section 2050 et seq. Caltrans projects are also subject to the California Native Plant Protection Act, found at California Fish and Game Code Sections 1900–1913, and CEQA, found at California Public Resources Code Sections 21000–21177.

Affected Environment

The information in this section is summarized from the Natural Environment Study prepared for the project (SWCA Environmental Consultants 2022).

Botanical surveys within the Biological Study Area for special-status plants were conducted in April, June, July, and August 2020 during the blooming period for special-status species with the potential to occur in the Biological Study Area. Table 2-60 provides a list of species observed in the Biological Study Area. No special-status plant species were observed during surveys and no special-status plant species are expected to be affected by the project.

Table 2-60. Plant Species within the Biological Study Area

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
bent-flowered fiddleneck	*Amsinckia lunaris*	California Rare Plant Rank 1B.2	**Not likely to occur.** Suitable coastal bluff scrub habitat is absent in the Biological Study Area and the limited grassland cover within the Biological Study Area is relatively fragmented and disturbed. No California Natural Diversity Database occurrence records are known within 2 miles of the Biological Study Area and none were observed.	Not Applicable
Anderson's manzanita	*Arctostaphylos andersonii*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. There are two California Natural Diversity Database occurrences within 2 miles of the Biological Study Area and none were observed.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
Hooker's manzanita	*Arctostaphylos hookeri* ssp. *hookeri*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are known within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
marsh sandwort	*Arenaria paludicola*	Federal Endangered/State Endangered, 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	**No effect**
swamp harebell	*Campanula californica*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
bristly sedge	*Carex comosa*	California Rare Plant Rank 2B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
johnny-nip	*Castilleja ambigua* var. *ambigua*	California Rare Plant Rank 4.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Monterey spineflower	*Chorizanthe pungens* var. *pungens*	Federal Threatened / California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. There are four California Natural Diversity Database occurrences within 2 miles of the Biological Study Area. This species was not observed during surveys.	**No effect**
robust spineflower	*Chorizanthe robusta* var. *robusta*	Federal Endangered / California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	**No effect**
Brewer's clarkia	*Clarkia breweri*	California Rare Plant Rank 4.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
Santa Clara red ribbons	*Clarkia concinna* ssp. *automixa*	California Rare Plant Rank 4.3	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
San Francisco collinsia	*Collinsia multicolor*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
seaside bird's-beak	*Cordylanthus rigidus* ssp. *littoralis*	State Endangered / California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
mountain lady's-slipper	*Cypripedium montanum*	California Rare Plant Rank 4.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
California bottle-brush grass	*Elymus californicus*	California Rare Plant Rank 4.3	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
minute pocket moss	*Fissidens pauperculus*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
San Francisco gumplant	*Grindelia hirsutula* var. *maritima*	California Rare Plant Rank 3.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
Loma Prieta hoita	*Hoita strobilina*	California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Santa Cruz tarplant	*Holocarpha macradenia*	Federal Threatened / State Endangered / California Rare Plant Rank 1B.1	**May occur.** Suitable habitat is present in the Biological Study Area. There is one California Natural Diversity Database occurrence within 2 miles of the Biological Study Area. This species was not observed during surveys conducted during the tarplants' identifiable period.	**No effect**
arcuate bush-mallow	*Malacothamnus arcuatus*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Mt. Diablo cottonweed	*Micropus amphibolus*	California Rare Plant Rank 3.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
marsh microseris	*Microseris paludosa*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
woodland woollythreads	*Monolopia gracilens*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. There is one California Natural Diversity Database occurrence within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Dudley's lousewort	*Pedicularis dudleyi*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. There is one California Natural Diversity Database occurrence within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
white-rayed pentachaeta	*Pentachaeta bellidiflora*	Federal Endangered / State Endangered / California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	**No effect**

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
Monterey pine	*Pinus radiata*	California Rare Plant Rank 1B.1	**Present (Ornamental).** Monterey pines are present in several areas of the Biological Study Area. However, these pines are planted and are not a part of a natural stand; therefore, they would not be considered sensitive.	Not Applicable
white-flowered rein orchid	*Piperia candida*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Michael's rein orchid	*Piperia michaelii*	California Rare Plant Rank 4.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
San Francisco popcornflower	*Plagiobothrys diffusus*	State Endangered / California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. There is one California Natural Diversity Database occurrence within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
Lobb's aquatic buttercup	*Ranunculus lobbii*	California Rare Plant Rank 4.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
maple-leaved checkerbloom	*Sidalcea malachroides*	California Rare Plant Rank 4.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
San Francisco campion	*Silene verecunda* ssp. *verecunda*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Santa Cruz microseris	*Stebbinsoseris decipiens*	California Rare Plant Rank 1B.2	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Common Name	*Scientific Name*	Status (Federal/ State/CRPR)	Potential to Occur in Biological Study Area	Federally Listed Species Determination
Santa Cruz clover	*Trifolium buckwestiorum*	California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable
Pacific Grove clover	*Trifolium polyodon*	California Rare Plant Rank 1B.1	**Not likely to occur.** Marginally suitable habitat is present in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. This species was not observed during surveys.	Not Applicable

Environmental Consequences

Build Alternative

No impacts on special-status plant species are anticipated because none were observed during appropriately timed botanical surveys conducted within the Biological Study Area. The basis for this determination is either there is no suitable habitat for these species within the project Biological Study Area and/or none of these species were observed during appropriately timed surveys conducted within the project Biological Study Area.

No-Build Alternative

The No-Build (No-Action) Alternative would not result in impacts on plant species because the project would not be constructed. Therefore, there would be no impacts on special-status plants.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures for special-status plants are required.

References

SWCA Environmental Consultants. 2022. Natural Environmental Study. For the State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project. Santa Cruz County. September.

2.3.4 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts on wildlife. The Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This resource section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5, *Threatened and Endangered Species*. All other special-status animal species are discussed in this resource section, including the California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Affected Environment

The information in this section is summarized from the Natural Environment Study prepared for the project (SWCA Environmental Consultants 2022). The California Natural Diversity Database documents the special-status animal taxa (federally listed, state listed, California fully protected, species of special concern, California Natural Diversity Database special animals, and/or protected by the Migratory Bird Treaty Act and the California Department of Fish and Wildlife) occurring within the project region (Table 2-61).

Table 2-61. Regionally Occurring Species of Concern

Common Name	Scientific Name	Status	General Habitat Description	Species or Habitat Present / Absent	Rationale
California giant salamander	*Dicamptodon ensatus*	Species of special concern	Typically found in moist forests and riparian zones in or near clear, cold streams or seeps. Found under logs and debris, and occasionally in trees and shrubs near water. Breeds in clear, cold rivers, creeks, and ponds.	Habitat Present	**May occur.** Suitable riparian habitat is present in the Biological Study Area. Two California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area
Cooper's hawk	*Accipiter cooperii*	Watch List	Typically broken riparian woodlands in canyons and floodplains usually below 6,000 feet.	Habitat Present (Marginal)	**May Occur.** Suitable riparian woodland and forest habitat are present for this species, with only small disjunct linear rows of street trees occurring in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area.
Hoary bat	*Lasiurus cinereus*	(Western Bat Working Group: High Priority)	Coniferous forests and deciduous woodlands. Roosts are typically near clearings at the ends of branches.	Habitat Present	**Not likely to occur.** Some structures may be suitable for roosting, but the Biological Study Area is surrounded by low-quality foraging habitat and the degree of background noise and human activity reduces the potential for this species to occur. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area.

Common Name	Scientific Name	Status	General Habitat Description	Species or Habitat Present / Absent	Rationale
Pallid bat	*Antrozous pallidus*	Species of special concern (Western Bat Working Group: High Priority)	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Habitat Present	**Not likely to occur.** Some structures may be suitable for roosting, but the Biological Study Area is surrounded by low-quality foraging habitat and the degree of background noise and human activity reduces the potential for this species to occur. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area.
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	Species of special concern	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	Species/Habitat Present	**Present.** San Francisco dusky-footed woodrat nests were observed in the Biological Study Area. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area.
Santa Cruz black salamander	*Aneides niger*	Species of special concern	Moist forests and riparian zones in or near clear, cold streams or seeps. This subspecies is mostly terrestrial, staying underground during dry periods and foraging for small invertebrates aboveground at night during wet weather.	Habitat Present (Marginal)	**Not likely to occur.** Suitable riparian habitat is present in the Biological Study Area, but the surrounding area is highly urbanized. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area.
Townsend's big-eared bat	*Corynorhinus townsendii*	Species of special concern	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Habitat Present	**Not likely to occur.** Some structures may be suitable for roosting, but the Biological Study Area is surrounded by low-quality foraging habitat and the degree of background noise and human activity reduces the potential for this species to occur. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area.

Common Name	Scientific Name	Status	General Habitat Description	Species or Habitat Present / Absent	Rationale
Western pond turtle	*Emys (=Actin-emys) marmorata*	Species of special concern	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg laying.	Habitat Present	**May occur.** Suitable habitat is present in Aptos and Valencia Creeks. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. **Avoidance and minimization measures included in Chapter 4.**
White-tailed kite	*Elanus leucurus*	Fully Protected	Nests in rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Habitat Present (Marginal)	**Not likely to occur.** Marginally suitable nesting in tall trees and poor-quality foraging habitat in ruderal and grassland areas are present in the Biological Study Area, but the degree of background noise and human activity reduces the potential for occurrence. No California Natural Diversity Database occurrence records are within 2 miles of the Biological Study Area. **Avoidance and minimization measures included in Chapter 4.**

Other taxa are considered based on the presence of suitable habitat, including the "other nesting birds" category, which was added for the various species of birds with potential to nest in the Biological Study Area, and the "other roosting bats" category, which was added for bat species that could potentially roost in the Biological Study Area.

The California Natural Diversity Database, National Marine Fisheries Service, and Service databases identified a total of 50 special-status wildlife species that have potential to occur in the region. Based on the observations made during the biological reconnaissance-level surveys, all but 17 species were determined to have no potential or were not expected to occur within the Biological Study Area due to the lack of suitable habitat.

The 10 special-status species with potential to occur include California giant salamander, Santa Cruz black salamander, western pond turtle, Cooper's hawk, white-tailed kite, hoary bat, pallid bat, Townsend's big-eared bat, and dusky-footed woodrat. None of these 10 species were observed in the Biological Study Area during the survey effort, but they have potential to occur in or near the Biological Study Area and are discussed in further detail below. The monarch butterfly is discussed in Section 2.3.5 *Threatened and Endangered Species*. Although not yet listed, the species is a candidate and, as such, receives protection as if it was listed.

California Giant Salamander

The California giant salamander is a California species of special concern. Two California Natural Diversity Database occurrence records are known from within 2 miles of the Biological Study Area, in portions of Aptos and Valencia Creeks upstream of the Biological Study Area. The species has the potential to occur in the Biological Study Area within Aptos and Valencia Creeks and the adjacent riparian areas; however, California giant salamander was not observed during biological surveys of the Biological Study Area.

Santa Cruz Black Salamander

Santa Cruz black salamander is a California species of special concern. The Biological Study Area is within the known range of Santa Cruz black salamander and suitable habitat is present. No California Natural Diversity Database occurrence records are known from within 2 miles of the Biological Study Area. Santa Cruz black salamander was not observed during biological surveys of the Biological Study Area. The closest California Natural Diversity Database occurrence is located approximately 2 miles north of the Biological Study Area, along Aptos Creek.

Western Pond Turtle

Western pond turtle is a species of special concern. The Biological Study Area is within the known range of western pond turtle and suitable habitat is present. This species has potential to occur in the Biological Study Area

within Aptos and Valencia Creeks. Sandy substrate is absent from upland areas and turtle movement is expected to be impeded by relatively dense ruderal and landscaped vegetation adjacent to the aquatic habitat, so the species is not expected to nest within the Biological Study Area. California Natural Diversity Database occurrence records of the species are absent from within 2 miles of the Biological Study Area, and western pond turtle was not observed during biological surveys of the Biological Study Area.

Cooper's Hawk, White-Tailed Kite, and Other Nesting Migratory Birds

Cooper's hawk is a California Department of Fish and Wildlife watch list species. White-tailed kite is a State of California fully protected species. Its fully protected status means no take authorization can be granted by the State of California for the species, other than for scientific purposes; therefore, take must be completely avoided. Migratory birds and their occupied nests, young, and eggs are protected under federal and state laws. Undeveloped portions of the Biological Study Area include trees and vegetation that provide suitable nesting habitat for a variety of bird species protected under the California Fish and Game Code and Migratory Bird Treaty Act. Cooper's hawk, white- tailed kite, and other nesting migratory birds have been discussed as a group because it is expected that bird species would be subjected to similar impacts in the Biological Study Area, particularly during nesting season.

Two inactive cup nests were observed on the underside of the Rio Del Mar Boulevard bridge above the Santa Cruz Branch Rail Line in the Biological Study Area during the 2020 biological survey.

Suitable nesting substrate for Cooper's hawk and great blue heron (*Ardea herodias*) occurs in limited portions of the Biological Study Area and adjacent areas. No special-status bird species or active nests of migratory bird species were observed during surveys of the Biological Study Area.

Hoary Bat, Pallid Bat, Townsend's Big-Eared Bat, and Other Roosting Bats

The hoary bat is included on the California Natural Diversity Database Special Animals List, the pallid bat is a California species of special concern, and the Townsend's big-eared bat is a California species of special concern. No bat species or roosting sites were observed during reconnaissance surveys of the Biological Study Area and California Natural Diversity Database occurrence records of any bat species are absent from within 2 miles of the Biological Study Area. The Biological Study Area contains riparian areas along Aptos and Valencia Creeks that are highly suitable habitat for bat foraging. Additionally, suitable roosting habitat occurs in trees, bridges, and structures in and surrounding the Biological Study Area, and bat species could roost within and adjacent to the Biological Study Area. Therefore, active roosts of bat species could be affected by the project.

Bridges such as the Rio Del Mar Boulevard overcrossing and the Santa Cruz Branch Rail Line overcrossings may have structural features that are similar to natural bat roosts. The location and setting of these structures indicate that these features may also provide suitable temperature conditions to support roosting bats.

San Francisco Dusky-Footed Woodrat

The San Francisco dusky-footed woodrat, a California species of special concern, may occur in the Biological Study Area. Wooded habitats throughout the Biological Study Area provide suitable nesting and foraging habitat for this species. This species constructs large stick nests (also known as middens), which may be placed in trees, shrubs, or on the ground. This species may also nest in and around old structures. San Francisco dusky-footed woodrat nests were detected during surveys of the Biological Study Area.

Environmental Consequences

Build Alternative

California Giant Salamander

Grading or other earthwork could affect California giant salamanders in the Biological Study Area, particularly in riparian areas and uplands adjacent to streams. Individuals could therefore be subjected to injury or mortality as a result of ground-disturbing activities, or accidental crushing. Capturing or relocating individual California giant salamanders, if encountered, could subject these animals to stresses that could result in adverse effects.

Santa Cruz Black Salamander

Grading or other earthwork could affect Santa Cruz black salamanders in the Biological Study Area, particularly in uplands adjacent to streams. Individuals could therefore be subjected to injury or mortality as a result of ground-disturbing activities, or accidental crushing. Capturing or relocating individual Santa Cruz black salamanders, if encountered, could subject these animals to stresses that could result in adverse effects.

Western Pond Turtle

Construction activities involving in-water work and dewatering could result in direct injury or mortality, if western pond turtles are inhabiting aquatic or upland areas within the Biological Study Area. Construction activities including the excavation and installation of fill for bridges or other structures would result in the permanent loss of aquatic habitat and degradation. Dewatering could result in a temporary reduction in the quantity of available aquatic habitat. Areas with the greatest potential for impacts on western pond turtle would be along Aptos Creek.

Cooper's Hawk and White-Tailed Kite

Direct impacts on active bird nests and any young or eggs residing in nests could occur during the removal of trees and vegetation and the removal of nests. Temporary indirect impacts on birds could result from disturbance and noise associated with construction activities, which could alter nesting and foraging behaviors.

Hoary Bat, Pallid Bat, Townsend's Big-Eared Bat, and Other Roosting Bats

Direct impacts on bat species that utilize existing trees or structures, including the Santa Cruz Branch Rail Line overcrossings, as roosting habitat could occur during the removal of trees and structures within the Biological Study Area. Temporary indirect impacts on roosting bats could result from disturbance and noise associated with construction activities, which could alter roosting behavior.

San Francisco Dusky-Footed Woodrat

Direct impacts on woodrats could occur during the clearing of vegetation within the Biological Study Area, if San Francisco dusky-footed woodrat or their nests are present in clearing areas.

No-Build Alternative

The No-Build (No-Action) Alternative would not result in habitat modifications. Therefore, there would be no impacts on the special-status animal species discussed above.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures would reduce impacts on animal species.

California Giant Salamander

AMM BIO-25: Qualified biologists shall conduct a preconstruction survey for California giant salamander in areas of suitable habitat where construction will occur. If regulatory agency approval allows, the qualified biologists shall capture and relocate any California giant salamanders (if present) or other sensitive species to suitable habitat outside of the area of impact.

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1, *Natural Communities*, would also compensate for potential impacts on California giant salamander habitat. No additional compensatory mitigation is proposed.

Santa Cruz Black Salamander

AMM BIO-26: Qualified biologists shall conduct a preconstruction survey for Santa Cruz black salamander in areas of suitable habitat where construction will occur. If regulatory agency approval allows, the qualified biologists shall capture and relocate any Santa Cruz black salamanders (if present) or other sensitive species to suitable habitat outside of the area of impact.

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1 would also compensate for potential impacts on Santa Cruz black salamander habitat. No additional compensatory mitigation is proposed.

Western Pond Turtle

The measures discussed for California red-legged frog and Santa Cruz long-toed salamander in Section 2.3.5 are applicable to western pond turtle to avoid or minimize potential impacts on the species. In addition, potential impacts on western pond turtle will be avoided through the implementation of the following measures:

AMM BIO-27: If project-related construction will affect aquatic areas and if regulatory agency approval allows, qualified biologists shall conduct a preconstruction survey for western pond turtle in aquatic areas where construction will occur. The qualified biologists shall capture and relocate any western pond turtle (if present) or other sensitive aquatic species to suitable habitat outside of the area of impact. A letter of permission will be obtained from the California Department of Fish and Wildlife to relocate western pond turtle and other species of special concern from work areas encountered during construction within the Biological Study Area as necessary.

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1 would also compensate for potential impacts on western pond turtle habitat. No additional compensatory mitigation is proposed.

Cooper's Hawk and White-Tailed Kite

Active bird nests protected by California Fish and Game Code Sections 3503 and 3503.5, as well as the Migratory Bird Treaty Act will be avoided through the implementation of **Standard Measure BIO-1** in Chapter 1, *Proposed Project* and the following measures:

AMM BIO-28: If feasible, removal of trees shall be scheduled to occur in the fall and winter (between September 16 and February 1), outside of the typical nesting season.

AMM BIO-29: If any construction activities are proposed to occur during the typical nesting season (February 16 to September 15), a nesting bird survey of the area of disturbance shall be conducted by qualified biologists no more than 2 weeks prior to construction to determine presence/absence of nesting birds within the project area.

AMM BIO-30: If evidence of migratory bird nesting that may be affected by construction activities is discovered, or when birds are injured or killed as a result of construction activities, the contractor shall immediately notify the engineer or biological monitor. At a minimum, a 500-foot radius of the nest shall be designated an environmentally sensitive area for nesting raptors, and a 250-foot radius shall be designated an environmentally sensitive area for other nesting avian species, unless otherwise directed by the Service or the California Department of Fish and Wildlife. Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code will not be moved or disturbed until the end of the nesting season or until young fledge, whichever is later, nor would adult birds be killed, injured, or harassed at any time. The environmentally sensitive area shall remain in place until such time that the nest is no longer considered active by the qualified biologist. The Santa Cruz County Regional Transportation Commission shall provide written notification to Caltrans and the resource agencies by the qualified biologist.

AMM BIO-31: If a white-tailed kite nest is identified within the Biological Study Area at any time during the proposed project, the biological monitor shall thoroughly document the species activity and ensure that immediate project activities avoid any impacts to the species. Coordination with the California Department of Fish and Wildlife will be facilitated by the County if necessary to devise a suitable avoidance plan for state-listed nesting bird species. If there is a potential for take, the California Department of Fish and Wildlife shall be contacted immediately, and if deemed necessary by the California Department of Fish and Wildlife a suitable avoidance plan will be developed and implemented for the duration of project activities. A final report summarizing the results of implementation of the avoidance plan will be submitted to the California Department of Fish and Wildlife within 30 days following successful fledging or upon project completion, whichever is sooner.

AMM BIO-32: Vegetation removal in potential nesting habitats shall be monitored and documented by the biological monitor(s) regardless of time of year.

Potential impacts on nesting migratory bird species are anticipated to be temporary. Measures to avoid, minimize, and mitigate impacts on wetland or riparian habitat discussed in Section 2.3.1 (Mitigation Measure BIO-17) can be applied to nesting habitat within the Biological Study Area that could

support nesting migratory bird species. No additional compensatory mitigation is proposed.

Hoary Bat, Pallid Bat, Townsend's Big-Eared Bat, and Other Roosting Bats

AMM BIO-33: A qualified biologist shall conduct preconstruction surveys the year prior to construction for bats species that could be utilizing existing structures or trees for roosting habitat. If bats are identified as utilizing areas within the Biological Study Area for day or night roosting, the qualified biologist shall identify the species of bat present. The biologist(s) conducting the pre-construction surveys shall also identify the nature of the bat utilization of the bridge (i.e., maternity roost, day roost, night roost).

AMM BIO-34: If bat species are identified as roosting in areas that will be affected, prior to construction, a plan to exclude bat species from impact areas shall be prepared. This plan shall discuss methods of eliminating bat access to the identified roosting habitat prior to construction so that bats are not able to return to and occupy the roost. The appropriate timing for exclusion implementation shall be determined upon the species identified as occurring within the project site. Roost areas shall be surveyed by a qualified biologist prior to implementing exclusion methods to ensure that no bats are trapped within. Exclusion methods may include, but are not limited to, wire mesh, spray foam, or fabric placement. This plan shall be submitted to the appropriate regulatory agency for approval.

AMM BIO-35: Demolition of existing structures and vegetation removal shall occur outside of the bat maternity roosting season, typically during the spring and summer months.

AMM BIO-36: If bats cannot be excluded from bat roosts, work activities shall be avoided within 100 feet of active maternity roosts until bat pups have been weaned and are deemed independent by a qualified biologist. Regulatory agencies shall be contacted for additional guidance if roosting bats are observed within the Biological Study Area during construction.

AMM BIO-37: A qualified biologist shall be present periodically during construction activities to monitor the bat populations, which may be utilizing the bridge and to ensure that all practicable measures are employed to avoid incidental disturbance to special-status bat species. Monitoring would be timed to occur during key construction events (e.g., removal of existing structures or trees with roosting habitat).

Mitigation Measure BIO-38: If project-related impacts permanently affect a major roost location, compensatory mitigation would be required. Compensatory mitigation shall include replacement of suitable habitat that follows the guidance included within *Caltrans Bat Mitigation: A Guide to*

Developing Feasible and Effective Solutions (H.T. Harvey and Associates 2019).

San Francisco Dusky-Footed Woodrat

AMM BIO-39: No more than 14 days prior to construction activities, a preconstruction survey will be conducted within the Biological Study Area by a qualified biologist in suitable habitat to determine the presence or absence of woodrat middens.

AMM BIO-40: If woodrat middens are located during the preconstruction survey, the qualified biologist shall establish a minimum 25-foot buffer around each midden that can feasibly be avoided by project activities.

AMM BIO-41: If project activities cannot avoid affecting the middens, then a qualified biologist shall dismantle the middens by hand prior to grading or vegetation removal activities. The midden dismantling shall be conducted such that the midden material is slowly removed looking for young woodrats. The material shall be placed in a pile at the closest adjacent undisturbed habitat and more than 50 feet from construction activities.

AMM BIO-42: If young are encountered during midden dismantling, the dismantling activity shall be stopped and the material replaced back on the nest and the nest shall be left alone and rechecked weekly to see if the young are out of the nest or capable of being independent without relying on adult care (as determined by a qualified biologist); once the young are determined to be independent, the nest dismantling can continue.

References

SWCA Environmental Consultants. 2022. Natural Environmental Study. For the State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project. Santa Cruz County. September.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the federal Endangered Species Act (16 U.S. Code Section 1531 et seq.; 50 Code of Federal Regulations Part 402). This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of the Federal Endangered Species Act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a biological opinion with an incidental take statement or a letter of concurrence. Section 3 of the Federal Endangered Species Act defines *take* as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (California Fish and Game Code Section 2050 et seq.). The California Endangered Species Act emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. California Fish and Game Code Section 2080 prohibits take of any species determined to be an endangered species or a threatened species. *Take* is defined in California Fish and Game Code Section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a biological opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to the California Endangered Species Act species by issuing a consistency determination under California Fish and Game Code Section 2080.1.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and continental shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish

within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, continental shelf fishery resources, and fishery resources in special areas.

Affected Environment

The information in this section summarizes the Natural Environment Study prepared for the project in September 2022. A Habitat Assessment for Santa Cruz Long-Toed Salamander was conducted in May 2020; information from that assessment is incorporated into the Natural Environment Study. Chapter 4 contains a summary of regulatory agency coordination and correspondence to date.

The California Natural Diversity Database documents the special-status animal taxa (federally listed, state-listed, California fully protected, a species of special concern, California Natural Diversity Database special animals, and/or protected by the Migratory Bird Treaty Act and the California Department of Fish and Wildlife) occurring within the project region (Table 2-62). In addition to species already included in the California Natural Diversity Database search, the official federal species list received from the Service included the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax trailii extimus*).

The official federal species list received from National Marine Fisheries Service included green sturgeon southern distinct population segment *(Acipenser medirostris),* south-central California coast distinct population segment steelhead (*Onchorhynchus mykiss irideus* pop. *9*), eulachon (*Thaleichthys pacificus*), and longfin smelt (*Spirinchus thaleichthys*). These species were determined to have no potential or are not expected to occur due to the lack of suitable habitat.

There are seven special-status species with potential to occur in the Biological Study Area: California red-legged frog, Santa Cruz long-toed salamander, southwestern willow flycatcher, least Bell's vireo, Central California coast steelhead distinct population segment, tidewater goby, and monarch butterfly. None of these species were observed in the Biological Study Area during the survey effort, but they have potential to occur in or near the Biological Study Area. Although not yet listed, the Monarch butterfly is a candidate for endangered species listing and is discussed in this section.

Table 2-62 identifies the names and legal status of each of the regionally occurring special-status species. Table 2-62 also identifies a general description of the habitat requirements for each species and a determination as to whether suitable habitat is present, whether the species is present, and whether the Biological Study Area is within a federally designated critical habitat unit. The rationale section summarizes the potential for each taxon to

occur in the Biological Study Area or be affected by the project. Species that do not have habitat present are not discussed in Table 2-62.

Table 2-62. Threatened and Endangered Species

Common Name	Scientific Name	Status	Habitat Present/ Absent	Rationale and Effect Finding
Monarch butterfly	*Danaus plexippus*	Federal Candidate	Habitat Present	May occur. Suitable eucalyptus woodland is present in the Biological Study Area. No California Natural Diversity Database occurrence records are known from within 2 miles of the Biological Study Area. Avoidance and minimization measures included in Chapter 2.3.4. May affect, but not likely to adversely affect.
California red-legged frog	*Rana draytonii*	Federal Threatened/ State Species of Special Concern	Habitat Present (Marginal)	May occur. The Biological Study Area contains marginally suitable aquatic and upland habitat. No California Natural Diversity Database occurrence records are known from within 2 miles of the Biological Study Area. Avoidance and minimization measures included in Chapter 2.3.4. May affect, and is likely to adversely affect.
Santa Cruz long-toed salamander	*Ambystoma macrodactylum croceum*	Federal Endangered/ State Endangered, Fully Protected	Habitat Present (outside of Biological Study Area)	Not likely to occur. Occupied habitat is present at the Valencia Lagoon adjacent to the Biological Study Area, but is absent from the Biological Study Area. The fence between the Biological Study Area and Valencia Lagoon will be repaired prior to project commencement, so it is not anticipated that this species would occur in the Biological Study Area. Thirteen California Natural Diversity Database records are known from within 2 miles of the Biological Study Area. Avoidance and minimization measures included in Chapter 2.3.4. No effect.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Federal Endangered/ State Endangered	Habitat Present (Marginal)	Not likely to occur. Suitable riparian habitat is present, but the Biological Study Area lacks the density required for this species. No California Natural Diversity

Common Name	Scientific Name	Status	Habitat Present/ Absent	Rationale and Effect Finding
				Database occurrence records are known from within 2 miles of the Biological Study Area. May affect, but not likely to adversely affect.
Least Bell's vireo	*Vireo bellii pusillus*	Federal Endangered/ State Endangered, State Species of Special Concern	Habitat Present (Marginal)	Not likely to occur. This species is not known to occur in the Biological Study Area. Suitable nesting habitat is absent from the Biological Study Area. No California Natural Diversity Database occurrence records are known from within 2 miles of the Biological Study Area. May affect, but not likely to adversely affect.
Steelhead, Central California coast distinct population segment	*Oncorhynchus mykiss*	Federal Threatened	Species/ Habitat Present	Present. Steelhead are known to be seasonally present in Aptos and Valencia Creeks. The Biological Study Area is located within designated critical habitat for the Central California coast distinct population segment steelhead. One California Natural Diversity Database occurrence record is known from within 2 miles of the Biological Study Area. The California Natural Diversity Database record occurrence, recorded in 1985, is located in Aptos Creek within the Biological Study Area (CDFW 2021a). Avoidance and minimization measures included in Chapter 2.3.4. May affect, and likely to adversely affect.
Tidewater goby	*Eucyclogobius newberryi*	Federal Endangered	Habitat Present	Not likely to occur. Suitable breeding habitat is absent from the Biological Study Area, but suitable aquatic habitat is present just downstream of the Biological Study Area. One California Natural Diversity Database record occurrence documented in 2014 is located in Aptos Creek within the Biological Study Area (CDFW 2021a). Avoidance and minimization measures included in Chapter 2.3.4. May affect, and likely to adversely affect.

Monarch Butterfly

Monarch butterfly overwintering habitat is declining and considered rare under State CEQA Guidelines Section 15380, and the species is a candidate for listing under the Federal Endangered Species Act and is included on the California Department of Fish and Wildlife Special Animals List. The Biological Study Area is within the known range of overwintering monarch butterfly populations and marginally suitable habitat is present within the eucalyptus woodland along the southern portion where the Santa Cruz Branch Rail Line crosses State Route 1. California Natural Diversity Database occurrence records of the species are absent from within two miles of the Biological Study Area, and monarch butterfly was not observed during biological surveys of the Biological Study Area.

Monarch butterflies occur primarily as migrating individuals in the vicinity of the Biological Study Area. Project activities are not anticipated to have significant impacts on migrating individuals. There are 31 known overwintering populations in Santa Cruz County, and none are in or adjacent to the project area. The nearest known overwintering sites are one located 0.75 miles northwest and one located 0.5 mile to the south of the project area (Xerces Society Western Monarch Count 2022).

California Red-Legged Frog

The California red-legged frog is federally listed as threatened and state listed as a species of special concern. California red-legged frogs were not observed during reconnaissance surveys and no California Natural Diversity Database occurrence records of the species are known from within 2 miles of the Biological Study Area. However, the Biological Study Area contains both suitable upland and aquatic dispersal habitat for California red-legged frog within riparian areas in the Biological Study Area, but lacks breeding habitat (suitable pools and emergent vegetation). Although California red-legged frog has not been observed in the Biological Study Area during reconnaissance surveys, there is suitable habitat and California red-legged frog presence in the Biological Study Area is inferred.

Santa Cruz Long-Toed Salamander

The Santa Cruz long-toed salamander is both federally and state listed as endangered, and state listed as a fully protected species. Santa Cruz long-toed salamanders were not observed during any of the surveys, but the species has been well documented at the California Department of Fish and Wildlife Valencia Lagoon, immediately south of the eastern portion of the Biological Study Area. Thirteen California Natural Diversity Database occurrence records of the species are known from within 2 miles of the Biological Study Area, with the Valencia Lagoon population being one of these recorded locations. While suitable habitat for Santa Cruz long-toed salamander is absent from the Biological Study Area, gaps in the current salamander barrier fence could allow individuals to enter the Biological Study

Area immediately south of State Route 1. These individuals would likely desiccate or suffer road mortality. Caltrans and the California Department of Fish and Wildlife plan to repair the gaps in the barrier fence as part of routine maintenance activities and have confirmed that these repairs will be completed prior to the project. Therefore, Santa Cruz long-toed salamander would have no potential to enter the Biological Study Area from the adjacent Valencia Lagoon.

Central California Coast Steelhead

The Central California coast steelhead distinct population segment is federally listed as threatened and the species has designated critical habitat. The Biological Study Area is within the known range of steelhead, and Aptos Creek and Valencia Creek within and upstream of the Biological Study Area are critical habitat. The lower reach of Aptos Creek that flows into the Aptos Lagoon provides habitat for juvenile steelhead downstream of the Biological Study Area. Additionally, steelhead are well documented in nearby tributaries to Monterey Bay, including San Lorenzo River and Soquel Creek.

One California Natural Diversity Database occurrence record of steelhead is documented within a 2-mile radius of the Biological Study Area. The California Natural Diversity Database record occurrence is from Aptos Creek approximately 5 miles upstream of State Route 1. Steelhead individuals have been identified in Aptos Creek and are; therefore, considered present in small numbers within the project area. The species is expected to occur within the segment of Aptos Creek when sufficient water flow or deep pools are present. There is a partial fish barrier at the arch culvert through which Valencia Creek drains under State Route 1 into Aptos Creek. Given the presence of steelhead in Aptos Creek and only a partial barrier at the confluence with Valencia Creek, steelhead are also presumed to be present in Valencia Creek.

Tidewater Goby

One California Natural Diversity Database occurrence record of tidewater goby is documented within a 2-mile radius of the Biological Study Area. The California Natural Diversity Database occurrence documented in 2014 is from Aptos Creek within the Biological Study Area (CDFW 2021a). Critical Habitat Unit SC-7 “Aptos Creek” for this species is located downstream of the Biological Study Area in Aptos Lagoon. Since tidewater goby have been documented in Aptos Lagoon and Aptos Creek, it is inferred that tidewater goby individuals may be present in the downstream section of the Biological Study Area. Tidewater goby was not observed during biological surveys of the Biological Study Area.

Southwestern Willow Flycatcher and Least Bell’s Vireo

The discussion for southwestern willow flycatcher and least Bell’s vireo has been combined because these migratory birds have similar habitat

requirements and similar impact mechanisms. They are both federally and state listed as endangered.

Southwestern willow flycatcher breeds in Southern California and winters in Mexico and farther south. The closest known occurrence is approximately 186 miles southeast of the Biological Study Area in Santa Barbara County (California Natural Diversity Database occurrence #1).

Least Bell's vireo also spends winters in Mexico and farther south, and breeds primarily in Southern California, though historically the Central Valley was considered the center of their breeding range. As of 2006 greater than 99% of the remaining least Bell's vireo population is located in Southern California (Santa Barbara County and south). The Biological Study Area is not within the historic range of this species, but this species' range is currently expanding northward. The closest known occurrence is approximately 16.5 miles southeast of the Biological Study Area in Monterey County and is from 2001 (California Natural Diversity Database occurrence #503). Caltrans coordinated with biologist Jim Greaves (a respected least Bell's vireo biologist) in 2008 for his professional opinion regarding the potential for least Bell's vireo nesting activity in the region of Santa Cruz. Mr. Greaves conducted background research and conducted a site visit of riparian habitats in the region in 2008, and they did not appear to be of the type preferred by least Bell's vireo (Greaves 2008b, as cited in Caltrans 2020).

Southwestern willow flycatcher and least Bell's vireo were included for consideration because they appear on the official Service species list. There are no California Natural Diversity Database records for the species in or near the Biological Study Area, nor are there any known recent nesting records in the vicinity of the Biological Study Area. No southwestern willow flycatchers or least Bell's vireos were observed during reconnaissance surveys of the Biological Study Area.

Riparian habitat within the Biological Study Area is anticipated to provide marginal suitable foraging and breeding habitat for these species. However, due to the distance from known occurrences of these species, there is a low potential to forage and nest within the riparian habitat.

Environmental Consequences

Build Alternative

Monarch Butterfly

Disturbance of occupied monarch overwintering habitat, through pruning, tree removal, or activity near the overwintering habitat during the overwintering period could result in stress, injury, mortality, and/or habitat loss to this species. Indirect impacts to monarch butterflies could result in reduction of potential overwintering habitat, which would require monarch butterflies to find alternative overwintering habitat. As stated above, no

known overwintering sites are located within or adjacent to the project area. Avoidance and minimization measures described below would be implemented to avoid potential impacts.

California Red-Legged Frog

Construction activities including the excavation and installation of fill for bridges or other structures in areas that provide potentially suitable dispersal, foraging, and sheltering habitats for California red-legged frog, have the potential to result in adverse effects on California red-legged frog and its habitat. These activities could result in direct impacts on individuals in the form of injury or mortality, or reduce habitat quality by temporarily removing dispersal habitat and escape cover in areas where such construction activities occur. Construction activities that would involve in-water work could cause temporary and permanent alterations to conditions in Aptos and Valencia Creeks and adjacent channel bank and potentially affect California red-legged frog, if present. Areas with the greatest potential for impacts on California red-legged frog would be along Aptos and Valencia Creeks. As stated in Section 2.1.8, there would be no notable changes in nighttime lighting, and lighting is not anticipated to affect this or other species. The avoidance and minimization efforts described below follow the measures included within the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program, 8-8-10-F-58. The Programmatic Biological Opinion includes measures that would result in the capture, handling, and relocation of California red-legged frog, which would be considered take of California red-legged frog. Therefore, the project may affect, and is likely to adversely affect California red-legged frog. No designated critical habitat for California red-legged frog occurs in or near the Biological Study Area. Therefore, there will be no effect on critical habitat for California red-legged frog.

Santa Cruz Long-Toed Salamander

No project-related construction activities would occur within Valencia Lagoon or within upland habitat areas. The repairs to the fence separating the Valencia Ecological Preserve from the State Route 1 right-of-way would be completed prior to the start of project activities and are anticipated to prevent individual Santa Cruz long-toed salamander from entering the area of construction. Therefore, with implementation of the avoidance measure below there would be no impacts on this species.

Central California Coast Steelhead

Construction activities involving in-water work and dewatering could result in direct injury or mortality, if steelhead are present in the Biological Study Area. Construction activities including the excavation and installation of fill for bridges or other structures would result in the permanent loss of habitat and degradation through reduced canopy coverage and loss of overhanging and submerged riparian vegetation. Temporary and permanent impacts on

riparian vegetation would reduce shading and temperature regulation within Aptos and Valencia Creeks, which are critical habitat for Central California coast steelhead.

Dewatering could result in a temporary reduction in the quantity of available aquatic habitat, leading to mortality due to stranding. Dewatering could affect the structure of the streambed, and disrupt movement patterns potentially contributing to reduced fitness and reduced spawning ability and habitat.

Since steelhead are known to inhabit Aptos Creek in the Biological Study Area, construction activities involving in-water work may affect, and is likely to adversely affect steelhead. Therefore, there would be potential for take of the species during any construction activities and dewatering.

In addition, temporary impacts would occur around the exterior of the arch culvert from the construction of the concrete abutments. The channel immediately adjacent to the arch culvert through which Valencia Creek drains under State Route 1 into Aptos Creek would be impacted by access routes and staging of machinery for construction. The arch culvert has been identified as a priority fish passage barrier; therefore, the project would require remediation work at the culvert.

Project activities could result in temporary or permanent impacts on aquatic and riparian habitats along Aptos and Valencia Creeks. Construction activities involving in-water work and dewatering could result in temporary alterations to in-channel conditions within Aptos and Valencia Creeks and adjacent channel banks. Project activities could disturb channel bank and bed material and increase the potential for erosion and sediment transport downstream. If erosion did occur, increased suspended sediment load could impair water quality or cover streambed substrate downstream of the Biological Study Area. Water quality degradation resulting from project activities could potentially affect steelhead habitat. The use of mechanized equipment could also lead to the unintentional release of fuels, lubricants, solvents, or other pollutants into the channel, affecting water quality. Additionally, riparian habitat in the Biological Study Area provides cover to Aptos and Valencia Creeks, providing adequate shade to maintain water temperatures during summer months in the channel. Removal of the existing bridge support structures immediately adjacent to Aptos Creek would result in long-term improvements to Central California coast steelhead critical habitat. In addition, the Valencia Creek Culvert is a known fish passage barrier, and will be remediated as part of the project. Improvements to fish passage would be a benefit to this species.

Tidewater Goby

Tidewater goby has potential to occur in Aptos Creek within the Biological Study Area; however, it is unexpected because the reaches of Aptos and Valencia Creeks within the Biological Study Area are upstream from the

preferred brackish lagoon habitat. Impacts on tidewater goby could occur in the wetted portion of Aptos Creek within and immediately downstream of the Biological Study Area from construction activities. Therefore, potential impacts on habitat for tidewater goby would be the same as impacts on waters of the U.S., as described in "Section 2.3.2, Wetlands and Other Waters".

In the unlikely event that tidewater goby is present in the Biological Study Area, construction activities involving in-water work and dewatering could result in direct injury or mortality. Construction activities including the excavation and installation of fill for bridges or other structures would result in the permanent loss of tidewater goby habitat. Dewatering could result in a temporary reduction in the quantity of available aquatic habitat, leading to mortality due to stranding. Dewatering could indirectly affect tidewater goby downstream through altered water flows in the creek and potential releases of sediment, which could affect tidewater goby habitat. Avoidance and minimization measures described below would be implemented. However, relocation of tidewater goby, if required, would result in take of this species.

Southwestern Willow Flycatcher and Least Bell's Vireo

As proposed, the project would permanently affect 0.081 acre of riparian habitat and temporarily affect 1.471 acres of riparian habitat, which could be utilized by least Bell's vireo and southwestern willow flycatcher for nesting or foraging purposes. Impacts on active nests belonging to southwestern willow flycatcher and least Bell's vireo could occur within riparian habitat in the Biological Study Area from construction activities. Indirect effects including project-related noise and vibration generated from nearby construction activities may disrupt nesting or foraging activity.

No-Build Alternative

The No-Build (No-Action) Alternative would not result in habitat modifications or disturbances. Therefore, there would be no impacts on the threatened or endangered species discussed above. However, under the No-Build Alternative, temporary fish passage at Valencia Creek would not be constructed and the area would continue to present a barrier to fish passage. Remediation would be delayed for several years until a permanent solution is constructed.

Avoidance, Minimization, and/or Mitigation Measures

Monarch Butterfly

AMM BIO-43: If feasible, avoid eucalyptus tree removal or other disturbance of eucalyptus habitat from October 1 to March 1 to avoid potential impacts on winter roosting monarch butterflies.

AMM BIO-44: If construction activities are scheduled to impact occur within potentially suitable monarch butterfly overwintering habitat between November October 1 and March 1, a qualified biologist shall conduct pre-construction surveys for overwintering monarch butterflies in appropriate habitat. If an active roost or aggregation is present, any construction grading, or other development within 100 feet of the active roost, shall be prohibited between October 1 and March 1. Consult with the Service if monarch butterfly roosts are observed and avoidance is not feasible.

California Red-Legged Frog

The following measures are provided by the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program, 8-8-10-F-58. These measures have been included exactly as they are shown within the Programmatic Biological Opinion.

AMM BIO-45: Only the Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frog.

AMM BIO-6: Ground disturbance will not begin until written approval is received from the Service that the biologist is qualified to conduct the work.

AMM BIO-47: A Service-approved biologist will survey the project area 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. Coordination with the Service shall occur with regard to the relocation site prior to the capture of any California red-legged frogs.

AMM BIO-48: Before any construction activities begin, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures to be implemented to conserve the California red-legged frog during the project, and all project boundary limits. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer questions.

AMM BIO-49: A Service-approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After

this time, the state or local sponsoring agency will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that this monitor receives the training outlined in AMM BIO-49 and in the identification of California red-legged frog. If the monitor or the Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected to a degree that exceeds the levels anticipated by the Federal Highway Administration and the Service during the review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the effect immediately or require that all actions that are causing these effects be halted. If work is stopped, the Service will be notified as soon as is reasonably possible.

AMM BIO-50: During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

AMM BIO-51: All refueling, maintenance, and staging of equipment and vehicles will occur at least 100 feet from the riparian habitat or waterbodies and not in a location from which a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Federal Highway Administration will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

AMM BIO-52: Habitat contours will be returned to their original configuration at the end of the project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Service and the Federal Highway Administration determine that it is not feasible, or modification of original contours would not benefit the California red-legged frog.

AMM BIO-53: The number of access routes, size of staging areas, and the total area of activity will be limited to the minimum necessary to achieve the project goal. Environmentally sensitive areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact on California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

AMM BIO-54: Caltrans (or the local sponsor) will attempt to schedule work activities for times of the year when impacts on the California red-

legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frogs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and informal consultation between Caltrans and the Service during project planning shall be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.

AMM BIO-55: To control sedimentation during and after project implementation, Caltrans and sponsoring agency will implement Best Management Practices outlined in any authorizations or permits issued under the authorities of the Clean Water Act that it receives for the specific project. If Best Management Practices are ineffective, Caltrans will attempt to attempt to remedy the situation immediately, in consultation with the Service.

AMM BIO-56: If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. The methods and materials used in any dewatering will be determined by Caltrans in consultation with the Service on a site-specific basis. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.

AMM BIO-57: Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.

AMM BIO-58: A U.S. Fish and Wildlife Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), crayfish, and centrarchid fishes from the project area to the maximum extent possible. The Service-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

AMM BIO-59: If Caltrans demonstrates that disturbed areas have been restored to conditions that allow them to function as habitat for the California red-legged frog, these areas will not be included in the amount of total habitat permanently disturbed.

AMM BIO-60: To ensure that diseases are not conveyed between work sites by the Service-approved biologist, the fieldwork code of practice

developed by the Declining Amphibian Populations Task Force will be followed at all times.

AMM BIO-61: Project sites will be revegetated with an assemblage of native riparian, wetlands, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. These measures will be implemented in all areas disturbed by activities associated with the project, unless the Service and Caltrans determine that it is not feasible or practical.

AMM BIO-62: Caltrans will not use herbicides as the primary method used to control invasive, exotic plants. However, if Caltrans determines the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the California red-legged frog:

a. Caltrans will not use herbicides during the breeding season for the California red-legged frog.
b. Caltrans will conduct surveys for the California red-legged frog immediately prior to the start of any herbicide use. If found, California red-legged frogs will be relocated to suitable habitat far enough from the project area that no direct contract with herbicides would occur.
c. Giant reed and other invasive plants will be cut and hauled out by hand and the stems painted with glyphosate or glyphosate-based products, such as Aquamaster or Rodeo.
d. Licensed and experienced Federal Highway Administration staff or a licensed and experience contractor will use a hand-held sprayer for foliar application of Aquamaster or Rodeo where large monoculture stands occur at an individual project site.
e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).
g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 miles per hour.
h. No herbicides will be applied within 24 hours of forecasted rain.
i. Application of all herbicides will be done by a qualified Caltrans staff or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental

Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or waterbodies in a location where a spill would not drain directly toward aquatic habitat. Caltrans will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Upon completion of any project for which this programmatic consultation is used, Caltrans will ensure that a Project Completion Report is completed and provided to the Ventura Fish and Wildlife Office. Caltrans should include recommended modification of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation. In addition, Caltrans will reinitiate formal consultation in the event any of the following thresholds are reached as a result of projects conducted under the provisions of this consultation:

Caltrans will reinitiate consultation when, as a result of projects conducted under the provisions of this consultation:

a. 10 California red-legged frog adults or juveniles have been killed or injured in a given year (for this and all other standards, an egg mass is considered to be one California red-legged frog)

b. 50 California red-legged frogs have been killed or injured in total

c. 20 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in any given year

d. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in total

e. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in any given year

f. 500 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in total

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1 would also

compensate for potential impacts on California red-legged frog habitat. A Section 7 formal consultation will also be conducted for all federally listed species that could be affected by the proposed project. No additional compensatory mitigation is proposed.

Santa Cruz Long-Toed Salamander

AMM BIO-63: At the request of California Department of Fish and Wildlife and to ensure take avoidance, the project proponent will retain a qualified biologist to conduct 2 years of preconstruction surveys according to Service protocol surveys for Santa Cruz long-toed salamander conducted the seasons prior to project construction.

AMM BIO-64: Prior to the initiation of work adjacent to the Valencia Ecological Preserve, the project proponent will install high-visibility construction exclusion fencing along the outside of the Preserve's exclusion fence to make the limits of the project and construction visually obvious.

Central California Coast Steelhead

Measures to avoid or minimize impacts to riparian areas and other waters, discussed in Section 2.3.2, Wetlands and Other Waters can be applied to aquatic habitats within the Biological Study Area that could support steelhead or their critical habitat. In addition, the following measures will be implemented to further avoid or minimize impacts on steelhead:

AMM BIO-65: If in-stream work is proposed to occur in coastal streams, incidental take authorization from NOAA Fisheries shall be acquired through a Section 7 biological opinion and incidental take statement.

AMM BIO-66: If in-stream work is required at the confluence of Aptos Creek and Valencia Creek, remediation of the structural barrier to fish passage will be addressed. Santa Cruz County Regional Transportation Commission and Caltrans will coordinate with the California Department of Fish and Wildlife to comply with Senate Bill 857, SHC section 156.3, and SHC section156.4

AMM BIO-67: A component including a description of Central California coast steelhead, its ecology, and the need for conservation of the species will be integrated into the worker environmental training program.

AMM BIO-68: If dewatering/stream diversion is necessary, a diversion and dewatering plan shall be prepared and implemented to allow for passage of aquatic species through the site during construction. The form and function of all pumps used during the dewatering activities shall be checked twice daily, at a minimum, by the biological monitor(s) to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.

AMM BIO-69: During project activities, if pumps are incorporated to assist in temporarily dewatering the site, intakes shall be completely screened with no larger than 0.2-inch wire mesh to prevent steelhead and other sensitive aquatic species from entering the pump system. Pumps shall release the additional water to a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area.

AMM BIO-70: During dewatering/diversion activities, or if tidal fluctuations breach a formerly dewatered and isolated project site, a National Marine Fisheries Service-approved biological monitor(s) or other National Marine Fisheries Service-approved biologist(s) shall supervise site dewatering and relocate steelhead and other stranded aquatic species.

AMM BIO-71: If it is determined by the biological monitor(s) or the National Marine Fisheries Service-approved biologist(s) that impacts to steelhead would have the potential to exceed the levels authorized by National Marine Fisheries Service, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will resolve the situation immediately by eliminating the cause of the identified effect on the species or require that all actions that are causing these effects be halted until coordination with the appropriate resource agency is completed. No work will resume until the issue is resolved.

AMM BIO-72: Following construction, temporary impacts on streamside vegetation used as sheltering areas or streambed sandbars, gravels, and cobbles used by fish species will be restored to their preconstruction conditions, at a minimum.

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1 would also compensate for potential impacts on aquatic areas within the Biological Study Area that could support steelhead. Section 7 formal consultation will be conducted for all federally listed species that could be affected by the proposed project. No additional compensatory mitigation is proposed.

Mitigation Measure BIO-73: Additionally, the fish passage barrier associated with the hydraulic drop and sheet flow over the concrete apron at the outlet of the culvert at post mile 9.97 will be improved for the benefit of fish passage. Caltrans will implement a phased approach to correcting fish passage in Valencia Creek at post mile 9.97 and post mile 9.88. This project, EA 05-0C734, will complete short-term, or partial, improvements to fish passage. Then project EA 05-1N900 (Valencia Creek Fish Passage) will follow up with long-term remediation of the fish passage issues at post mile 9.97 and post mile 9.88, which will be funded through the state SHOPP program.

The following mitigation is proposed immediately downstream of the arch culvert to address fish passage issues as part of the short-term improvements required for impacts from this project. Design plans for remediation work will be included with project designs and based on coordination with the California Department of Fish and Wildlife and National Marine Fisheries Service.

1. The existing baffle fishway in the arch culvert, which consists of dividing walls and baffles, would be extended to the downstream edge of the concrete outlet apron. This will confine the flows and achieve the desired hydraulic conditions at the outlet apron for fish passage. The extended dividing walls and baffles would be constructed of timber and, if necessary, concrete to achieve the same hydraulic performance as the existing baffles. Additionally, an outlet baffle shall be placed at the most downstream bay of the extended baffle system. This will concentrate plunging flows off the lip of the concrete outlet apron and maximize water depths in the most downstream bay of the fishway. This is where fish would be expected to complete their leap from downstream into the arch culvert, thus, improving fish passage.

2. To promote pool development and maintenance immediately downstream of the outlet apron, a starter channel would be excavated and boulder-root wad combinations would be installed in the upstream area immediately adjacent to the opening of the arch culvert. The boulder-root wad combinations would be installed at an appropriate elevation so that some of the instream woody material would remain submerged below the water surface where it would provide instream cover for fish across a range of flow conditions. By constricting the channel slightly and adding roughness, the boulder-root wad combinations would help to maintain pool water surface elevations and depth immediately downstream of the outlet apron (arch culvert), thereby creating more favorable conditions for adult and juvenile fish to access the fishway, thus improving fish passage.

Tidewater Goby

Measures to avoid or minimize impacts to riparian areas and other waters, discussed in Section 2.3.2, Wetlands and Other Waters, can be applied to aquatic areas within the Biological Study Area that could support tidewater goby. In addition, the following measures will be implemented to further avoid or minimize impacts on tidewater goby:

AMM BIO-74: If in-stream work is proposed to occur Aptos Creek, incidental take authorization from the Service through a Section 7 biological opinion and incidental take statement shall be acquired, if deemed necessary by the Service. Formal consultation with the Service may be necessary if a Section 404 permit is issued.

AMM BIO-75: A component including a description of tidewater goby, its ecology, and the need for conservation of the species will be integrated into the worker environmental training program.

AMM BIO-76: Prior to construction, if it is necessary to dewater/divert areas within Aptos Creek prior to project implementation, a Service-approved biologist shall conduct a preconstruction survey for tidewater goby and use seining, dip-nets, or other approved methods to capture and relocate tidewater goby from the areas to be dewatered to areas with suitable habitat outside of the area of proposed disturbance.

AMM BIO-77: If dewatering/stream diversion is necessary, a diversion and dewatering plan shall be prepared and implemented to allow for passage of aquatic species through the site during construction. The form and function of all pumps used during the dewatering activities shall be checked twice daily, at a minimum, by the biological monitor(s) to ensure a dry work environment and minimize adverse effects on aquatic species and habitats.

AMM BIO-78: During project activities, if pumps are incorporated to assist in temporarily dewatering the site, intakes shall be completely screened with no larger than 0.2-inch wire mesh to prevent tidewater goby and other sensitive aquatic species from entering the pump system. Pumps shall release the additional water to a settling basin allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area.

AMM BIO-79: During dewatering/diversion activities, or if tidal fluctuations breach a formerly dewatered and isolated project site, the Service-approved biological monitor(s) or other Service-approved biologist(s) shall supervise site dewatering and relocate tidewater goby and other stranded aquatic species.

AMM BIO-80: If it is determined by the biological monitor(s) or the Service-approved biologist(s) that impacts on tidewater goby have the potential to exceed the levels authorized by the Service, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation immediately by eliminating the cause of the identified effect on the species or require that all actions that are causing these effects be halted until coordination with the appropriate resource agency is completed. No work will resume until the issue is resolved.

AMM BIO-71: Following construction, temporary impacts on streamside vegetation used as sheltering areas or streambed sandbars, gravels, and cobbles used by fish species will be restored to their preconstruction conditions, at a minimum.

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1 would also compensate for potential impacts on aquatic areas within the Biological Study Area that could support tidewater goby. Section 7 formal consultation will be conducted for all federally listed species that could be affected by the proposed project. No additional compensatory mitigation is proposed.

Southwestern Willow Flycatcher and Least Bell's Vireo

The following measures would be implemented to avoid and minimize potential effects on least Bell's vireo and southwestern willow flycatcher.

AMM BIO-81: Focused surveys following the Service survey guidelines for least Bell's vireo and southwestern willow flycatcher will be completed to determine the presence/absence of least Bell's vireo and southwestern flycatcher wherever suitable habitat is present within 500 feet of the limits of construction. Surveys will be conducted within 1 year prior to the onset of construction activities. If least Bell's vireo or southwestern willow flycatcher are detected during these surveys, formal Section 7 consultation will be reinitiated.

AMM BIO-82: Caltrans will provide the Service with a report detailing least Bell's vireo and southwestern flycatcher survey efforts for the breeding season preceding construction.

AMM BIO-83: Worker awareness trainings and educational materials will include information about least Bell's vireo and southwestern willow flycatcher and their habitat.

In addition to those measures above, the following measures would be implemented to avoid and minimize potential effects on nesting migratory birds, including least Bell's vireo and southwestern willow flycatcher, if present:

AMM BIO-84: If feasible, removal of trees shall be scheduled to occur in the fall and winter (between September 15 and February 1), outside of the typical nesting season.

AMM BIO-85: If any construction activities are proposed to occur during the typical nesting season (February 1 to September 15), a nesting bird survey of the area of disturbance shall be conducted by qualified biologists no more than 2 weeks prior to construction to determine presence/absence of nesting birds within the project area.

AMM BIO-86: If evidence of migratory bird nesting that may be affected by construction activities is discovered, or when birds are injured or killed as a result of construction activities, the contractor shall immediately notify the engineer or biological monitor. At a minimum, a 500-foot radius of the

nest shall be designated an environmentally sensitive area for nesting raptors, and a 250-foot radius shall be designated an environmentally sensitive area for other nesting avian species, unless otherwise directed by the Service or the California Department of Fish and Wildlife. Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code would not be moved or disturbed until the end of the nesting season or until young fledge, whichever is later, nor would adult birds be killed, injured, or harassed at any time. The environmentally sensitive area shall remain in place until such time that the nest is no longer considered active by the qualified biologist. Written notification shall be provided to Caltrans, the Santa Cruz County Regional Transportation Commission, and the resource agencies by the qualified biologist.

AMM BIO-87: If least Bell's vireo and/or southwestern willow flycatcher are identified within the Biological Study Area at any time during the proposed project, the biological monitor shall thoroughly document the species activity and ensure that immediate project activities avoid any impacts on the species. If there is a potential for take, the Service shall be contacted immediately to ensure that avoidance of take is maintained throughout the duration of project activities.

AMM BIO-88: Vegetation removal in potential nesting habitats shall be monitored and documented by the biological monitor(s) regardless of time of year.

Mitigation Measure BIO-17: Compensatory mitigation proposed for impacts on aquatic habitats as described in Section 2.3.1 would also compensate for potential impacts on habitat within the Biological Study Area that could support nesting least Bell's vireo and/or southwestern willow flycatcher. No additional compensatory mitigation is proposed.

References

Bryan Mori Biological Consulting Services. 2021. Santa Cruz Long-Toed Salamander Site Assessment. For the Caltrans Highway 1 State Park Drive to Freedom Boulevard Auxiliary Lanes and Bus-on-Shoulder Project. Watsonville. Letter report. January 6.

SWCA Environmental Consultants. 2022. Natural Environmental Study. For the State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project. San Luis Obispo. September.

Xerces Society Western Monarch Count. 2022. Western Monarch Thanksgiving Count and New Year's Eve Count Data, 1997-2021.

2.3.6 Invasive Species

Regulatory Setting

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

Affected Environment

The information in this section summarizes the Natural Environment Study prepared for the project in September 2022 (SWCA Environmental Consultants).

A total of 64 exotic, invasive plant species as identified by the California Invasive Plant Council Inventory were observed in the Biological Study Area. A total of 27 of these plants have an invasiveness rating of Limited, 25 plants have an invasiveness rating of Moderate, and 8 plants have an invasiveness rating of High including red brome (*Bromus madritensis* ssp. *rubens*), iceplant (*Carpobrotus edulis*), pampas grass (*Cortaderia jubata*), cape ivy (*Delairea odorata*), fennel (*Foeniculum vulgare*), French broom (*Genista monspessulana*), and English ivy. Additionally, 4 plants identified in the Biological Study Area are on the "Watch List." A full list of plant species encountered in the Biological Study Area, including invasive plants, is below in Table 2-63, List of Plant Species Observed.

Table 2-63. List of Plant Species Observed

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Acacia dealbata	silver wattle	Fabaceae	exotic/California Invasive Plant Council moderate
Acacia longifolia	Sydney golden wattle	Fabaceae	exotic
Acacia melanoxylon	blackwood acacia	Fabaceae	exotic/California Invasive Plant Council limited
Agapanthus praecox	African lily or lily of the Nile	Liliaceae	exotic

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Ageratina adenophora	sticky snakeroot	Asteraceae	exotic/California Invasive Plant Council moderate
Allium triquetrum	three cornered leek	Alliaceae	exotic
Anthemis cotula	dog fennel	Asteraceae	exotic
Arbutus unedo	strawberry tree	Ericaceae	exotic
Avena barbata	slender wild oat	Poaceae	exotic/California Invasive Plant Council moderate
Avena fatua	common wild oat	Poaceae	exotic/California Invasive Plant Council moderate
Bellis perennis	English lawn daisy	Asteraceae	exotic
Betula papyrifera	paper birch	Betulaceae	exotic
Borago officinalis	common borage	Boraginaceae	exotic
Brassica nigra	black mustard	Brassicaceae	exotic/California Invasive Plant Council moderate
Brassica rapa	rape mustard	Brassicaceae	exotic/California Invasive Plant Council limited
Briza maxima	big rattlesnake grass	Poaceae	exotic/California Invasive Plant Council limited
Briza minor	little rattlesnake grass	Poaceae	exotic
Bromus catharticus	rescue grass	Poaceae	exotic
Bromus diandrus	ripgut brome	Poaceae	exotic/California Invasive Plant Council moderate
Bromus hordeaceous	Soft chess brome	Poaceae	exotic/California Invasive Plant Council limited
Bromus madritensis ssp. *rubens*	red brome	Poaceae	exotic/California Invasive Plant Council high
Calendula arvensis	field marigold	Asteraceae	exotic
Campsis radicans	trumpet creeper	Bignoniaceae	exotic
Capsella bursa-pastoris	shepherd's purse	Brassicaceae	exotic
Carduus pycnocephalus	Italian thistle	Asteraceae	exotic/California Invasive Plant Council moderate
Carpobrotus edulis	iceplant	Aizoaceae	exotic/California Invasive Plant Council high

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Scientific Name	Common Name	Family	exotic/California Invasive Plant Council Status
Cedrus deodara	Deodar cedar	Pinaceae	exotic
Centranthus ruber	red valerian	Valerianaceae	exotic
Cirsium vulgare	bull thistle	Asteraceae	exotic/California Invasive Plant Council moderate
Cistus sp.	rock rose	Cistaceae	exotic
Conium maculatum	poison hemlock	Apiaceae	exotic/California Invasive Plant Council moderate
Convolvulus arvensis	field bindweed	Convolvulaceae	exotic
Cortaderia jubata	pampas grass	Poaceae	exotic/California Invasive Plant Council high
Cotoneaster franchetii	Francheti cotoneaster	Rosaceae	exotic/California Invasive Plant Council moderate
Cotoneaster integrifolius	entire-leaved cotoneaster	Rosaceae	exotic
Cotoneaster pannosus	silverleaf cotoneaster	Rosaceae	exotic/California Invasive Plant Council moderate
Cotoneaster sp.	cotoneaster	Rosaceae	exotic
Delairea odorata	cape ivy	Asteraceae	exotic/California Invasive Plant Council high
Dimorphotheca ecklonis	blue & white daisybush	Asteraceae	exotic
Echium candicans	pride of Madeira	Boraginaceae	exotic/California Invasive Plant Council limited
Ehrharta erecta	panic veldt grass	Poaceae	exotic/California Invasive Plant Council moderate
Eriobotrya japonica	loquat	Rosaceae	exotic
Erodium botrys	long beaked filaree	Geraniaceae	exotic
Erodium cicutarium	red-stemmed filaree	Geraniaceae	exotic/California Invasive Plant Council limited
Escallonia rubra	red claws	Grossulariacea	exotic
Eucalyptus globulus	blue gum	Myrtaceae	exotic/California Invasive Plant Council limited
Euphorbia peplus	petty spurge	Euphorbiaceae	exotic

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Festuca myuros	rattail fescue	Poaceae	exotic/California Invasive Plant Council moderate
Festuca perennis	Italian ryegrass	Poaceae	exotic/California Invasive Plant Council moderate
Foeniculum vulgare	fennel	Apiaceae	exotic/California Invasive Plant Council high
Fumaria capreolata	white ramping fumitory	Papaveraceae	exotic
Gastridium phleoides	nit grass	Poaceae	exotic
Genista monspessulana	French broom	Fabaceae	exotic/California Invasive Plant Council high
Geranium dissectum	cutleaf geranium	Geraniaceae	exotic/California Invasive Plant Council limited
Geranium molle	dove's foot geranium	Geraniaceae	exotic
Geranium robertianum	Robert's geranium	Geraniaceae	exotic
Geranium rotundifolium	roundleaf geranium	Geraniaceae	exotic
Hedera helix	English ivy	Araliaceae	exotic/California Invasive Plant Council high
Helminthotheca echioides	bristly oxtongue	Asteraceae	exotic/California Invasive Plant Council limited
Hesperocyparis macrocarpa	Monterey cypress	Cupressaceae	planted or naturalized
Holcus lanatus	common velvet grass	Poaceae	exotic/California Invasive Plant Council moderate
Hordeum marinum ssp. gussoneanum	seaside barley	Poaceae	exotic/California Invasive Plant Council moderate
Hordeum murinum	foxtail barley	Poaceae	exotic/California Invasive Plant Council moderate
Hypericum calycinum	Aaron’s beard	Hypericaceae	exotic
Hypochaeris glabra	smooth cat’s ear	Asteraceae	exotic/California Invasive Plant Council limited
Hypochaeris radicata	hairy cat’s ear	Asteraceae	exotic/California Invasive Plant Council moderate

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Ilex aquifolium	holly	Aquifoliaceae	exotic/California Invasive Plant Council limited
Juglans hindsii	northern California black walnut	Juglandaceae	planted or naturalized
Lactuca serriola	prickly lettuce	Asteraceae	exotic
Lantana montevidensis	trailing lantana	Verbenaceae	exotic/“watch list”
Lavandula stoechas	French lavender	Lamiaceae	exotic
Ligustrum vulgare	European privet	Oleaceae	exotic
Linum bienne	narrow leaved flax	Linaceae	exotic
Liquidambar styraciflua	sweet gum	Hamamelidaceae	exotic
Lobularia maritima	sweet alyssum	Brassicaceae	exotic/California Invasive Plant Council limited
Lonicera japonica	Japanese honeysuckle	Caprifoliaceae	exotic
Lophostemon confertus	Brisbane box	Myrtaceae	exotic
Lysimachia arvensis	scarlet pimpernel	Primulaceae	exotic
Malus domestica	orchard apple tree	Rosaceae	exotic
Marah fabacea	California manroot	Cucurbitaceae	native
Medicago polymorpha	burclover	Fabaceae	exotic/California Invasive Plant Council limited
Medicago sativa	alfalfa	Fabaceae	exotic
Melaleuca citrinus	crimson bottlebrush	Myrtaceae	exotic
Melilotus alba	white sweetclover	Fabaceae	exotic
Melilotus indicus	yellow sweetclover	Fabaceae	exotic
Myoporum laetum	ngaio	Scrophulariaceae	exotic/California Invasive Plant Council moderate
Myosotis latifolia	broadleaf forget-me-not	Boraginaceae	exotic/California Invasive Plant Council limited
Nerium oleander	oleander	Apocynaceae	exotic
Oxalis corniculata	creeping wood sorrel	Oxidalaceae	exotic
Oxalis incarnata	crimson wood sorrel	Oxidalaceae	exotic
Oxalis pes-caprae	Bermuda butercup	Oxidalaceae	exotic/California Invasive Plant Council moderate
Parietaria judaica	spreading pellitory	Urticaceae	exotic
Parthenocissus quinquefolia	Virginia creeper	Vitaceae	exotic
Paspalum dilatatum	Dallis grass	Poaceae	exotic

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Phalaris aquatica	Harding grass	Poaceae	exotic/California Invasive Plant Council moderate
Phormium tenax	New Zealand flax	Asphodelaceae	exotic
Photinia x fraseri	Fraser's photinia	Rosaceae	exotic
Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Pinus halepensis	Aleppo pine	Pinaceae	exotic
Pittosporum undulatum	Australian cheesewood	Pittosporaceae	exotic
Plantago coronopus	cutleaf plantain	Plantaginaceae	exotic
Plantago lanceolata	English plantain	Plantaginaceae	exotic/California Invasive Plant Council limited
Plantago major	common plantain	Plantaginaceae	exotic
Poa annua	annual bluegrass	Poaceae	exotic
Podranea ricasoliana	pink trumpet vine	Bignoniaceae	exotic
Polypogon monspeliensis	rabbitsfoot grass	Poaceae	exotic/California Invasive Plant Council limited
Polypogon viridis	water beard grass	Poaceae	exotic
Populus trichocarpa	black cottonwood	Salicaceae	native
Prunus avium	sweet cherry	Rosaceae	exotic
Prunus cerasifera	cherry plumb	Rosaceae	exotic/California Invasive Plant Council limited
Prunus laurocerasus	cherry laurel	Rosaceae	exotic
Prunus sp.	prunus (ornamental)	Rosaceae	exotic
Pyracantha angustifolia	narrowleaf firethorn	Rosaceae	exotic/California Invasive Plant Council limited
Raphanus sativus	wild radish	Brassicaceae	exotic/California Invasive Plant Council limited
Rosa sp.	garden rose	Rosaceae	exotic hybrid cultivar
Rosmarinus officinalis	rosemary	Lamiaceae	exotic
Rubus armeniacus	Himalayan blackberry	Rosaceae	exotic/California Invasive Plant Council high
Rumex acetosella	sheep sorrel	Polygonaceae	exotic/California Invasive Plant Council moderate
Rumex crispus	curly leaved dock	Polygonaceae	exotic/California Invasive Plant Council limited

Scientific Name	Common Name	Family	Origin/California Invasive Plant Council Status
Salvia leucantha	Mexican bush sage	Lamiaceae	exotic
Scandix pecten-veneris	shepherd's needle	Apiaceae	exotic
Senecio vulgaris	common groundsel	Asteraceae	exotic
Sequoia sempervirens	coast redwood	Cupressaceae	native
Silybum marianum	milk thistle	Asteraceae	exotic/California Invasive Plant Council limited
Solanum laxum	potato vine	Solanaceae	exotic
Sonchus asper ssp. asper	prickly sow thistle	Asteraceae	exotic
Sonchus oleraceus	common sow thistle	Asteraceae	exotic
Stellaria media	chickweed	Caryophyllaceae	exotic
Stipa miliacea var. miliacea	Smilo grass	Poaceae	exotic/California Invasive Plant Council limited
Taraxacum officinale	dandelion	Asteraceae	exotic
Torilis arvensis	field hedge parsley	Apiaceae	exotic/California Invasive Plant Council moderate
Toxicodendron diversilobum	poison oak	Anacardiaceae	native
Tragopogon porrifolius	purple salsify	Asteraceae	exotic
Trifolium angustifolium	narrow leaf crimson clover	Fabaceae	exotic
Trifolium campestre	hop clover	Fabaceae	exotic
Trifolium hirtum	rose clover	Fabaceae	exotic/California Invasive Plant Council limited
Triticum aestivum	wheat	Poaceae	exotic
Tropaeolum majus	garden nasturtium	Tropaeolaceae	exotic
Ulmus parvifolia	Chinese elm	Ulmaceae	exotic
Veronica persica	bird’s eye speedwell	Plantaginaceae	native
Urtica dioica	stinging nettle	Urticaceae	native
Vicia benghalensis	purple vetch	Fabaceae	exotic
Vicia villosa ssp. varia	smooth vetch	Fabaceae	exotic
Vinca major	bigleaf periwinkle	Apocynaceae	exotic/California Invasive Plant Council moderate
Zantedeschia aethiopica	calla lily	Araceae	exotic

Environmental Consequences

Build Alternative

Project activities would disturb invasive plants and soil within the Biological Study Area and could lead to the spread or introduction of invasive plants within the Biological Study Area or elsewhere. The project could spread invasive plant species to areas where they are absent outside of the Biological Study Area if invasive plants removed during clearing, grubbing, and construction are not disposed of or transported correctly. The avoidance and minimization measures described below would minimize the potential for the project to spread or introduce invasive plants within the Biological Study Area or elsewhere.

No-Build Alternative

The No-Build (No-Action) Alternative would not result in site disturbances or other activities that would have the potential to introduce or spread the invasive species discussed above. Therefore, there would be no impacts associated with invasive species.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization efforts are recommended to address invasive species.

AMM BIO-89: To avoid the spread of invasive species, the contractor will stockpile topsoil and redeposit the stockpiled soil on slopes after construction is complete, or transport all topsoil to a certified landfill for disposal.

AMM BIO-90: During construction, the project will make all reasonable efforts to limit the use of imported soils for fill. Soils currently existing on-site should be used for fill material. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species, or the material must consist of purchased clean material such as crushed aggregate, sorted rock, or similar.

AMM BIO-91: The landscape and restoration planting plans will emphasize the use of native species expected to occur in the area. Project plans will avoid the use of plant species that the California Invasive Plant Council, California Department of Fish and Wildlife (CDFW), or other resource organizations considers to be invasive or potentially invasive. Prior to issuance of grading permits, all project landscape and restoration plans will be verified to ensure that the plans do not include the use of any species considered invasive by the California Invasive Plant Council or the California Department of Fish and Wildlife.

References

SWCA Environmental Consultants. 2022. Natural Environmental Study. For the State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project. San Luis Obispo. September.