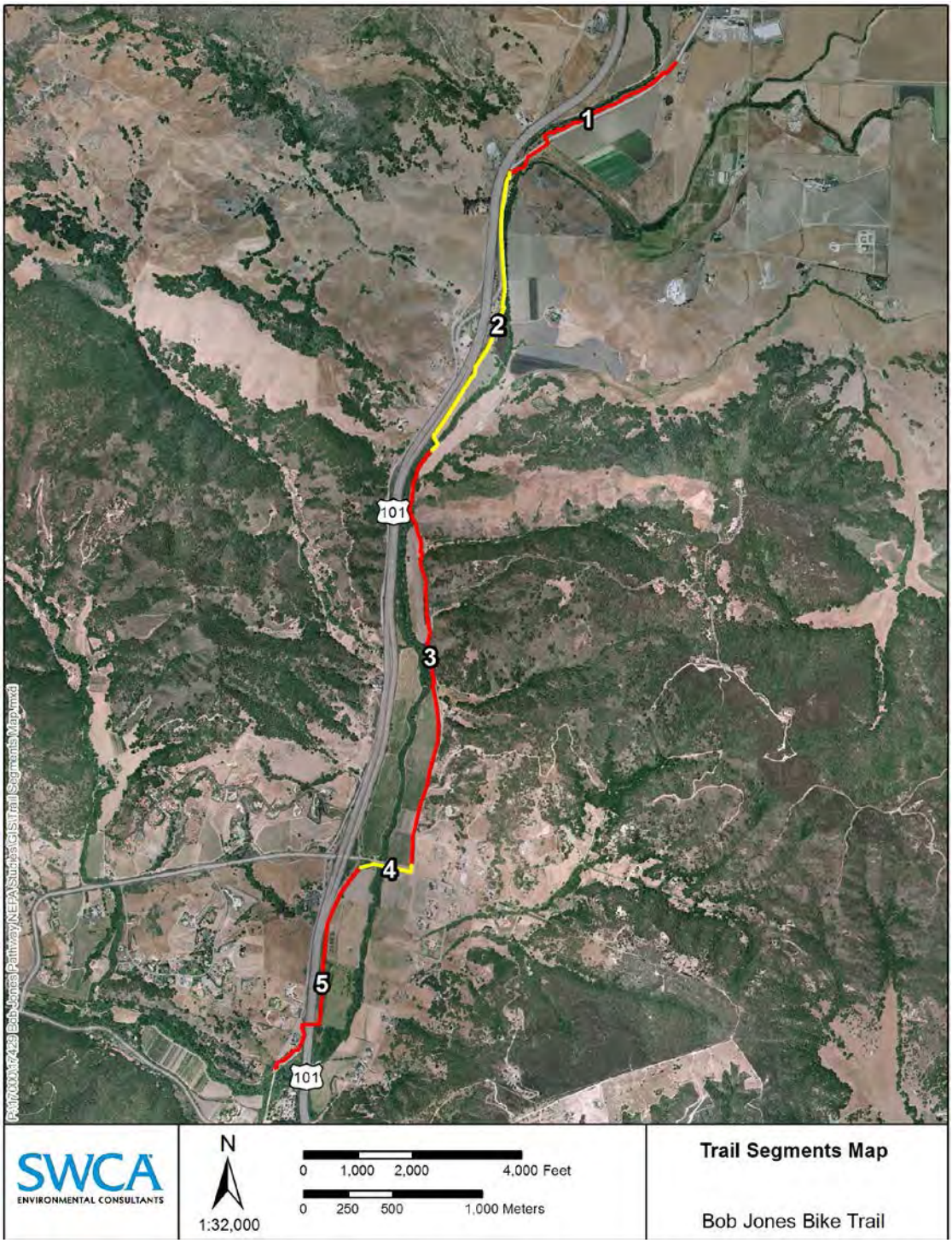
Figure 3. Trail Segments Map



1.2. Project Description

Several proposed project alternatives were examined for feasibility. During the project development phase it was proposed that the path would either be on the west side of SLO Creek; between State Route 101, existing streets, and the creek; or on the east side of SLO Creek within a 20-foot (ft) (6-meter [m]) corridor at the top of bank (or beyond the riparian edge); or a combination of each. The preferred alignment was selected based on an assessment that determined which route has the least environmental and land use impacts and is most cost effective, while still meeting the overall purpose of the project. Alternatives for several bridge crossings and installation of rock slope protection (RSP) within SLO Creek were also considered. During the project development phase it was proposed that RSP would be installed within the channel of SLO Creek in the vicinity of bridges and other areas for bank stabilization. In response to Caltrans concerns, these areas were redesigned to avoid impacts to wetlands along the riparian corridor of SLO Creek. Installation of RSP in SLO Creek is no longer proposed and project plans have been changed to remove RSP. The two alternatives remaining include the No-Build Alternative and one Build Alternative.

1.2.1. No Build Alternative

The No-Build Alternative would essentially maintain the status quo with the discontinuous mosaic of existing roadways and bike lanes between South Higuera and Ontario Road and assumes no construction to resolve this discontinuity, or provide a safe pedestrian pathway.

1.2.2. Build Alternative

The Build Alternative would resolve the discontinuity and provide a safe multi-use pathway. The Streets and Highway Code Section 890.4 defines a "bikeway" as a facility that is provided primarily for bicycle travel. The Build Alternative would incorporate Class I and III Paths. The three classes of paths are defined as:

1) Class I Bikeway (Bike Path). Provides a completely separated right of way (ROW) for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized.

2) Class II Bikeway (Bike Lane). Provides a striped lane for one-way bike travel on a street or highway.

3) Class III Bikeway (Bike Route). Provides for shared use with pedestrian or motor vehicle traffic.

For the purposes of this proposed project, widths of the pathways are shown in the Trail Cross Sections in Appendix C and the details in Appendix D, Sheet 1, and would be approximately:

1) Class I: separated 8 ft (2.4 m) trail including 2 ft (0.6 m) shoulders on either side; the 8-ft section would likely be paved with asphalt and the shoulders would be base material; and,

2) Class III: varying from 5 to 7.5 ft (1.5 to 2.3 m) of shared use along existing road surface.

Class I bikeway segments would be built within a 20-ft (6-m) trail ROW. Construction of the bike/pedestrian pathway would primarily occur within a typically narrow 30 to 60-ft (9 to 18-m) wide construction disturbance zone on nearly level terrain. In some areas the construction disturbance zone would be wider, up to 140 ft (43 m) wide, to include adjacent staging or lay-down areas, for instance for assembly and installation of the pedestrian bridges. In several areas the pathway would run parallel to and within 30 ft (9 m) of the banks of SLO Creek and its riparian corridor. Some tree trimming at the riparian canopy edge will be required for construction access and to ensure adequate overhead clearance for bicyclists, where the trail parallels the creek corridor. Trimming and possible removal of some trees may be necessary for placement of bridge decks at the creek crossings.

The proposed trail has been broken down into five segments for descriptive purposes (refer to Appendix A, Sheet 1).

1.2.2.1. SEGMENT 1: OCTAGON BARN TO SOUTH HIGUERA STREET CROSSING

Segment 1 of the new trail would begin at the Octagon Barn on South Higuera Street where a 10,000 ft^2 (930 m^2) trailhead with parking and other facilities would be constructed (refer to Appendix A, Sheet 2). Grading for approximately 65 parking spaces, a restroom, and bicycle parking adjacent to the restroom would occur and the surface of the parking spaces would likely be covered with a permeable surface (e.g., decomposed granite). The parking spaces and restroom would occupy an approximately 1.52-ac (66,211-ft^2) footprint. The County would also construct access to the parking spaces, an emergency exit (which the bike path is located within), and the portion of the Bob Jones Pathway that that occurs on the Octagon Barn site. To

accommodate a turn lane devoted to traffic in and out of the Octagon Barn property, the County will widen an approximately 865-ft (263.7 m) stretch of South Higuera Street. For the turn lane specifications: the approach taper lengths (northbound) on each side would be at least 330 linear feet in accordance with standard high speed road requirements. The bay taper and deceleration lengths (southbound) would be 485 linear feet. An additional 50 linear feet would be provided for stacking (2 cars assumed). Other components may include:

- 2:1 slopes on the edges of the road;
- installation of a retaining wall; or,
- Lengthening of the existing headwall near where a culvert drains an isolated riparian wetland near the northwest section of the property.

There would be a maximum 8 to 10-foot wide permanent disturbance on either side of the road, and a 10-foot total disturbance corridor (permanent plus temporary impact) along both sides of the road is assumed. This equates to approximately 17,300 ft^2 (0.40 ac) of total disturbance along the edges of South Higuera Street (0.20 ac on each side). These assumptions are consistent with County of San Luis Obispo Department of Public Works (County Public Works) requirements (Marshall 2010).

A Class I path would proceed southwest for approximately 300 ft (90 m) with a 180-ft (55-m) long, 4-ft to 6-ft (1.2-m to 1.8-m) high retaining wall along the east side of South Higuera Street, where a new crosswalk and traffic signal would be implemented to route the Class I pathway to the west side of South Higuera Street (the traffic signal would be part of the future Buckley Road extension project and not part of the Bob Jones Pathway Project). Access would be provided from the staging or parking area through the Octagon Barn area to the Class I pathway.

After crossing to the west side of South Higuera Street, the Class I pathway would extend approximately 3,500 ft (1,067 m) along the west side of South Higuera Street between the road and SLO Creek, with the installation of six culverts/bridges under the path to allow for storm water drainage. Two of these crossings would be constructed over jurisdictional waters of the U.S. However, installation of freespan foot bridges would negate the need for fill in the drainage (conceptual details for general crossings are included in Appendix D, Sheet 1). The largest of the culverts would be a new 20-ft (6-m) long, 72-inch (180-cm) concrete box culvert crossing of an un-named small farm drainage ditch tributary to SLO Creek. The proposed box

culvert is an extension of the existing box culvert under South Higuera Street, about 600 ft (180 m) south of the Octagon Barn.

The trail would then be routed across to the east side of South Higuera Street via a new crosswalk with traffic warning device, over another installed culvert, and proceed southwest paralleling South Higuera Street for approximately 400 ft (122 m) before reaching a new South Higuera Bridge for the pathway to be constructed across SLO Creek near the Filipponi Ecological Reserve (refer to Appendix A, Sheets 3 and 4). The bridge across SLO Creek has been designed to span the creek, negating the need for fill in the creek and in-stream work.

Proposed construction of the South Higuera Bridge (BR-A) (refer to Appendix D, Sheet 2) would include:

1) one (1) 10-ft wide by 50-ft long (3-m by 15-m) earthfill approach ramp at five percent (5%) grade on either side of the SLO Creek crossing;

2) two (2) 10-ft wide by 50-ft long (3-m by 15-m) pre-fabricated steel truss approach ramps at five percent (5%) grade on either side of the SLO Creek crossing; with proposed 5-ft landings every 50 ft on 3-ft (1m) diameter piers;

3) one (1) 15-ft (4.5-m) wide concrete abutment/landing on a 3-ft (1-m) diameter pier placed on either side of the SLO Creek crossing; and,

4) one (1) 10-ft wide by 120-ft long (3-m by 36.5-m) pre-fabricated steel truss bridge and one 10-ft-wide by 60-ft-long(3-m by 18.25-m) pre-fabricated steel truss bridge both with deck elevations at 90 ft (27.5 m) spanning SLO Creek.

1.2.2.2. SEGMENT 2: SOUTH HIGUERA STREET CROSSING TO BUNNELL CROSSING

After crossing SLO Creek at the new South Higuera Bridge, the bike path would proceed an additional 2,500 ft (760 m) between the east edge of South Higuera Street and the SLO Creek corridor, upon reaching the Maino property in the vicinity of the U.S. 101 northbound off ramp (refer to Appendix A, Sheet 4). Along this section just north of Cloveridge Lane, a 200-linear ft (61-linear m) by 3-ft (1-m) high retaining wall and curb would be added as needed where the west bank of SLO Creek slopes steeply toward the thalweg (low point of the channel).

Four existing 30-inch to 36-inch (76-cm to 90-cm) corrugated metal pipe (CMP) culverts conveying road drainage and runoff from South Higuera Street and Highway 101 to SLO Creek have deteriorated. These existing culverts will need to be repaired

and replaced in the near future. An exposed and eroded section of an existing 36-inch (90-cm) concrete culvert, located approximately 1,500 ft (460 m) south of the proposed South Higuera Street Bridge crossing of SLO Creek will be restored with replacement piping, earth fill materials and bio-technical slope protection. Discussion of existing culvert repairs is provided for informational purposes based on current conditions. These culvert repairs would not be constructed as part of this project and should not be considered part of the project description for environmental review purposes.

South of this location and just north of Cloveridge Lane the proposed trail will require widening of the South Higuera shoulder area with an approximately 200-ft (60-m) long solider-pile wall.

At the southern end of this section, the trail would be located within the Cloveridge Lane right-of-way and would become a Class III path for approximately 1,300 ft (395 m) with a split rail fence. Trail head parallel parking is proposed along the west side of Cloveridge Lane. Surface of the parking spaces would likely be covered with a permeable surface (e.g., decomposed granite). The trail from the south end of Cloveridge Lane to the new Bunnell Bridge would be a Class I path for approximately 1,500 ft (460 m) with the installation of two new culverts and repair of one existing culvert as needed (refer to Appendix A, Sheet 5).

At this point, the pathway would turn east and the Bunnell Bridge would be constructed to cross SLO Creek. Proposed construction of the Bunnell Bridge (BR-B) (refer to Appendix D, Sheet 3) would be similar to that of the South Higuera Bridge, including:

1) one (1) 10-ft wide by 50-ft long (3-m by 15-m) earthfill approach ramp at five percent (5%) grade on either side of the SLO Creek crossing;

2) three (3) 10-ft wide by 50-ft long (3-m by 15-m) pre-fabricated steel truss approach ramps at five percent (5%) grade on the northeast side relative to SLO Creek and four approach ramps of similar dimension on the southwest side relative to SLO Creek, with proposed 5-ft (1.5-m) landings every 50 ft (15 m) on 3-ft (1-m) diameter piers;

3) one (1) 15-ft wide (4.5-m) concrete abutment/landing on a 3-ft (1-m) diameter pier placed on either side of the SLO Creek crossing; and,

4) one (1) 10-ft wide by 120-ft long (3-m by 36.5-m) pre-fabricated steel truss bridge with deck elevation at 74.5 ft (23 m) spanning SLO Creek.

1.2.2.3. SEGMENT 3: BUNNELL CROSSING TO SAN LUIS BAY DRIVE

After crossing SLO Creek at the Bunnell Bridge, Segment 3 of the Class I path would proceed for approximately 3,000 ft (915 m) adjacent to an agricultural field in Baron Canyon open space lands east of the SLO Creek corridor, with 1,000 ft (305 m) of unfenced area and 2,000 ft (610 m) of t-post fencing (refer to Appendix A, Sheet 6). Four new culverts would be installed under the path along this section, primarily extensions of the culverts that drain Monte Road, along with the improvement of two existing culverts near where the path would join Monte Road, as needed.

Once this section of the trail reaches Monte Road, it would proceed along Monte Road as a Class III path for approximately 1,000 ft (305 m) with a split rail fence and improvement of one existing culvert as needed (refer to Appendix A, Sheet 7). At this point, the trail would convert to a Class I path through the edge of agricultural land just west of Monte Road for approximately 4,000 ft (1,220 m), with the extension of three existing culverts as needed and the installation of two new culverts, along with t-post fencing before reaching San Luis Bay Drive.

1.2.2.4. SEGMENT 4: SAN LUIS BAY DRIVE CROSSING

At the intersection of Monte Road and San Luis Bay Drive, a new crosswalk with a three-way stop would be implemented. From the Monte Road/San Luis Bay Drive intersection the bike trail would run south of and parallel to San Luis Bay Drive. Segment 4 of the Class I path would continue for approximately 400 ft (120 m), with the extension of two existing culverts. The path would be separated from San Luis Bay Drive with either a metal guardrail or concrete barrier before reaching a new San Luis Bay Drive Bridge for the pathway.

Proposed construction of the new San Luis Bay Drive Bridge (BR-C) (refer to Appendix D, Sheet 4) would include:

1) one (1) 10-ft-wide by 30-ft long (3-m by 9-m) earthfill approach ramp at five percent (5%) grade east of SLO Creek;

2) two (2) 10-ft wide by 50-ft long (3-m by 15-m) pre-fabricated steel truss approach ramps at five percent (5%) grade east of SLO Creek with proposed 5-ft (1.5-m) landings every 50 ft (15 m) on 3-ft (1-m) diameter piers;

3) one (1) 15-ft wide (4.5-m) concrete abutment/landing on a 3-ft (1-m) diameter pier placed on either side of the SLO Creek crossing;

4) one (1) 10-ft wide by 120-ft long (3-m by 36.5-m) pre-fabricated steel truss bridge with deck elevation at 45.5 ft (14 m) spanning SLO Creek;

5) one (1) 10-ft wide by 50-ft long (3-m by 15-m) pre-fabricated steel truss approach ramp at five percent (5%) grade west of SLO Creek; and,

6) one (1) 10-ft wide by 20-ft long (3-m by 6-m) earthfill approach ramp at five percent (5%) grade west of SLO Creek.

At the west end of the San Luis Bay Drive Bridge, a 10,000 ft^2 (930 m^2) temporary staging area is proposed. A Class I path with a split rail fence would extend approximately 300 ft (90 m) with the installation of one new 24-inch culvert toward the end of Segment 4. The pathway would be separated from San Luis Bay Drive by guardrails or metal bollards.

1.2.2.5. SEGMENT 5: SAN LUIS BAY DRIVE TO ONTARIO ROAD STAGING AREA

The final segment of the pathway, Segment 5, extends from roughly San Luis Bay Drive to the Ontario Road Staging Area (refer to Appendix A, Sheets 8 and 9). An approximately 2,500-ft (760-m) Class I path would extend from the junction of Segment 4 and Segment 5, eventually traveling within or slightly west of an existing farm access road easement. In this segment, the Class I path would be located to coincide with the farm road thereby providing farm access on the east side of the road and bicycle/pedestrian access on the west side. Within this segment, four small 12-inch (30-cm) culverts would be installed under the path to allow sheet flow and drainage from Highway 101. The Class I path would then reach an elevated approach ramp for the new Highway 101 bike/pedestrian overcrossing for the pathway.

Proposed construction of the Highway 101 overcrossing (BR-D) (refer to Appendix D, Sheet 5), proceeding north to south, would include:

1) One (1) 10-ft wide by 50-ft long (3-m by 15-m) earthfill approach ramp at five percent (5%) grade;

2) four (4) 10-ft wide by 50-ft long (3-m by 15-m) pre-fabricated steel truss segments at five percent (5%) grade, with proposed 5-ft (1.5-m) landings every 50 ft (15 m) on 3-ft (1-m) diameter piers and with landscape buffer planting along the west side of the ramp;

3) one (1) 15-ft wide (4.5-m) concrete landing/refuge on two (2) 3-ft (1-m) diameter piers;

4) five (5) 10-ft wide by 50-ft long (3-m by 15-m) pre-fabricated steel truss segments at five percent (5%) grade, with proposed 5-ft (1.5-m) landings every 50 ft (15 m) on 3-ft (1-m) diameter piers;

5) one (1) 15-ft wide (4.5-m) concrete abutment/view deck structure on two (2) 3-ft (1-m) diameter piers;

6) three (3) 10-ft wide by 80-ft long (3-m by 24-m) pre-fabricated steel truss overcrossing segments with elevation from 55 to 60 ft (16.8 to 18.3 m) spanning State Route 101 on two (2) 3-ft (1-m) diameter piers; and,

7) one (1) 65-ft long (20-m) earthfill approach ramp at five percent grade (5%) with a 100-ft long (30-m) retaining wall.

From the south end of the overcrossing, the Class I path would proceed approximately 400 ft (120 m) south with a 210-ft (64-m) long by 8-ft (2.4-m) high retaining wall parallel to Highway 101 through the Ontario Road Staging Area before connecting with the existing Bob Jones Trail to the south (refer to Appendix A, Sheet 9).

1.2.2.6. CONSTRUCTION STAGING AREAS AND CONSTRUCTION ACCESS

Several proposed construction staging areas have been identified along the new path (refer to Path Right of Way in Appendix B). All construction staging areas will result in temporary impacts unless otherwise described. Construction staging areas proposed include:

1) one 12,000 ft^2 (1,115 m^2) construction staging area located a few hundred feet southwest of the Octagon Barn on the west side of South Higuera Street (refer to Appendix B, Sheet 2);

2) one 6,000 ft^2 (557.5 m^2) construction staging area near the crosswalk from the west side to the east side of South Higuera Street, and a 12,000 ft^2 (1,115 m^2) staging area along the access roadway on the Filipponi Ecological Preserve (refer to Appendix B, Sheet 3);

3) two 15,000 ft^2 (1,395 m^2) staging areas located within and adjacent to the Cloveridge Lane ROW that would become future permanent trailhead parallel parking; 7,500 ft^2 (695 m^2) and 5,000 ft^2 (465 m^2) staging areas near the Bunnell

Bridge (BR-B); and, a temporary construction easement over Venado Trail approximately 2,050 ft (625 m) long with an overland extension of approximately 670 ft (204 m) to the east side of SLO Creek (refer to Appendix B, Sheet 5);

4) one 10,000 ft^2 (930 m^2) staging area south of the proposed San Luis Bay Drive Bridge (BR-C) (refer to Appendix B, Sheet 8); and,

5) one 5,000 ft^2 (465 m^2) staging area within County road ROW near the Ontario Road Staging Area, a 30,000 ft^2 (2,787 m^2) staging area along the east approach ramp to the Hwy 101 bridge, and an approximately 13,800 ft^2 (1,282 m^2) access area between Ontario Road and the west end of the Hwy 101 bridge (refer to Appendix B, Sheet 9).

Access will be along public and private roads and along Caltrans ROW.

1.2.2.7. CONSTRUCTION TECHNIQUES

Construction of the approximately 4.4-mile (7.1-kilometer) long bike path will be similar to the construction of a narrow country road. In areas adjacent to sensitive species, sensitive habitat, or active farmland, temporary fencing and similar materials (such as wattles, silt fencing, etc.) will be installed prior to construction. The intent of the fencing and similar materials are to provide a barrier between construction equipment and sensitive areas.

The Contractor may utilize heavy equipment such as such as scrapers, dozers, graders, or excavators for constructing the bike path. In addition heavy equipment, such as track excavators, drill rigs, and concrete trucks and pumps, would be used for specialized and localized aspects of the project. Examples would be retaining wall construction near the Octagon Barn, installation of culverts to provide drainage, and construction of the pedestrian and highway over-crossing bridge piers and abutments. Finally, large construction cranes will be required to lift the 40, 80, and 120-ft (12 m, 24 m, and 36.5-m) long pre-engineered steel bridge and approach ramp sections into place on the piers and abutments.

As proposed, path construction would occur within a varying 20 to 140-ft (9 to 43-m) wide construction zone, primarily on nearly level terrain, which in many places runs parallel to and within 30 ft (9 m) of the bank of SLO Creek, and directly alongside well-traveled county roads. A detailed traffic control plan will need to be prepared. Much of the construction work will be close to creek channels, with three stream crossings using pre-engineered pedestrian bridges. A detailed project erosion control

and revegetation plan, along with a Stormwater Pollution Prevention Plan (SWPPP) will therefore be a necessary and important part of the final project design.

Grading for path construction will involve cuts and fills of less than two ft (0.6 m), within the 12 to 30-ft (3.5 to 9-m) wide path section with average cuts to level higher lying areas and fills of low lying areas of less than one ft (0.3 m). A front end loader or skip loader, and a backhoe with a front bucket will likely be utilized for most of the earthwork, including initial clearing and grubbing of the path alignment, minor cuts and fills needed to create a level course for the subgrade, and placement and compaction of the Class 2 aggregate base (AB) course that will underlie the eight-ft (2.5-m) wide asphalt concrete (AC) surface.

Clearing and grubbing of the path alignment will involve the removal and off-haul of two to three inches (five to 7.5 centimeters (cm)) of root laden surface soils and associated vegetation within the 12 to 30-ft (3.5 to 9-m) wide path cross section. Larger trees have been avoided in the path alignment, with the exception of trees that need to be removed for bridge construction. All stockpiling will be confined to the proposed 30 to 140-ft (9 to 43-m) wide construction zone (designated on the plans).

Following the clearing and grubbing and subgrade preparation to create the level, firm path sub-surface, approximately four to six inches (10 to 15 cm) (final thickness) of Class 2 AB will be imported and placed across the width of the 12-ft (3.65-m) path cross section. The Class 2 AB material will be imported in dump trucks and placed in temporary approved stockpile areas. The Class 2 AB will be placed in an eight to ten-inch (20 to 25-cm) thick lift by a front end loader or skip loader, moisture conditioned by a water truck, and compacted to achieve the four to six-inch (10 to 15-cm) minimum AB thickness. Final AC path surfacing will be accomplished using a paver and vibratory roller. Four to five inches of loose AC material will be placed over the prepared Class 2 AB surface and rolled to obtain a final compacted minimum two-inch (5-cm) thick surface. Following any sealing, a center stripe dividing north and southbound lanes, and pavement stenciling may be applied using pickup mounted striping equipment.

The project also includes the installation of fencing, signage, benches, and other fixtures. Installation of these structures will require the drilling of shallow 24 to 36-inch deep by 12-inch (61 to 91.5-cm by 30.5 cm) diameter postholes, (for fencing and signage) installation of the posts, and backfilling with concrete. Equipment such as a

backhoe or skid-steer equipped with a small auger will be used for the installation of these items.

1.2.2.8. CONSTRUCTION SCHEDULE

The County has indicated that construction of the new corridor would be in roughly three sections/phases as funding becomes available. Construction of the entire path would be anticipated to occur within six years of the start of Phase 1. Construction of the bridge crossings and pathway segments located immediately adjacent to and through the riparian corridor of SLO Creek would occur within the typical agency-allowed window from June 1 to October 31 of any given year. Construction of the remainder of the pathway outside of the riparian corridor would occur year-round, weather permitting, and provided that all erosion control and stormwater management measures were in place and properly functioning.

Chapter 2. Study Methods

2.1. Regulatory Requirements

The proposed project will require federal, state, and local regulatory authorizations for construction. These authorizations may be issued in the form of legal permits, agreements, or other forms of environmental review. Authorizations will likely include numerous requirements for environmental compliance, which will be enforced through construction monitoring, documentation, and reporting.

2.1.1. Federal Policies and Regulations

2.1.1.1. NATIONAL ENVIRONMENTAL POLICY ACT

NEPA declares a continuing Federal policy "to use all practicable means and measures...to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations." NEPA directs "a systematic, interdisciplinary approach" to planning and decision making and requires environmental statements for "major Federal actions significantly affecting the quality of the human environment." Implementing regulations by the Council on Environmental Quality (40 Code of Federal Regulations (CFR) Parts 1500-1508) requires federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Federal agencies are further directed to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental laws and Executive Orders into the NEPA process. The NEPA process is considered to be an overall framework for the environmental evaluation of federal actions.

2.1.1.2. SECTION 404 OF THE CLEAN WATER ACT

The U.S. Army Corps of Engineers (USACE) is responsible for the issuance of permits for the placement of dredged or fill material into “Waters of the United States” pursuant to Section 404 of the Clean Water Act (CWA) (33 USC 1344). As defined by USACE at 33 CFR 328.3(a) (parts 1-6), the following summarizes “Waters of the United States” as:

> “Those waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all

> waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas."

Under federal regulations, wetlands are "waters of the United States" which are identified as:

> "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (USACE, 1987).

In any event where project activities would result in impacts to "waters of the U.S." (wetlands or non-wetland other waters), the project would be subject to either an individual permit, a general permit, or may be exempt from regulatory requirements under Section 404 of the CWA, based on review by the USACE. In some instances, activities have been granted a blanket authorization under the provisions of a general permit through the nationwide system.

Jurisdictional wetlands and other waters were delineated during the Wetland Assessment (refer to Appendix H). The proposed project will require three crossings of SLO Creek (refer to Appendix F) and installation of two culverts within a drainage identified as USACE "other waters". Activities that would result in the deposition of dredged or fill material within the OHWMs of SLO Creek could require a USACE Section 404 permit, but the project has been designed to avoid the deposition of fill within the ordinary high water marks (OHWMs) of SLO Creek and the drainages.

2.1.1.3. SECTION 401 OF THE CLEAN WATER ACT

Section 401 of the CWA and its provisions ensure that federally permitted activities comply with the federal CWA and state water quality laws. Section 401 is implemented through a review process that is conducted by California's Regional Water Quality Control Board (RWQCB), and is triggered by the Section 404 permitting process. The RWQCB issues a Water Quality Certification via the 401 process that a project complies with applicable effluent limitations, water quality standards, and other conditions of California law. Evaluating the effects of the project on both water quality and quantity (runoff) falls under the jurisdiction of the RWQCB. Any activities requiring a permit from the USACE would likely also require a

RWQCB Section 401 Water Quality Certification, but this is not expected for this project because a Section 404 permit from USACE is not likely to be required.

2.1.1.4. FEDERAL ENDANGERED SPECIES ACT

FESA of 1973 provides legal protection for plant and animal taxa (taxonomic groups) that are in danger of extinction, and classified as either threatened or endangered. Section 7 of the FESA requires federal agencies to make a finding on all federal actions as to the potential to jeopardize the continued existence of any listed species potentially affected by the action, including the approval by an agency of a public or private action, such as FHWA funding or the issuance of an USACE permit under Section 404 of the CWA. Caltrans has been delegated the authority to act as the lead federal agency under the FESA for Section 7 consultations associated with this project.

Section 9 of the FESA protects federally listed plant and animal species from unlawful "take." Take is defined by FESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) regulate activities that may result in take of federally endangered or threatened species, or candidate species. USFWS typically exerts jurisdiction over freshwater and terrestrial species, and NMFS typically exerts jurisdiction over marine species and anadromous fish (such as steelhead trout). Project-related activities that could result in impacts, such as take, to listed species would require any involved federal agencies to consult with the USFWS and/or NMFS to determine the extent of impacts to listed species. The documentation submitted to USFWS and/or NMFS analyzing impacts to federally listed species is typically a Biological Assessment. Once USFWS and/or NMFS review a Biological Assessment for a project, they may issue a federal Biological Opinion and Incidental Take Statement under FESA Section 7 that includes provisions for legal take, provided that specific mitigation measures are employed for construction.

Pursuant to FESA Section 7, consultation with the USFWS is anticipated to be necessary for California red-legged frog (CRLF) (*Rana aurora draytonii*) and with the NMFS for the central California coast steelhead (*Oncorhynchus mykiss irideus*) evolutionarily significant unit (ESU). A Biological Assessment for this project has been concurrently prepared with this NES.

2.1.1.5. FEDERAL MIGRATORY BIRD TREATY ACT

The federal Migratory Bird Treaty Act (MBTA) protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to end the commercial trade in bird feathers popular in the latter part of the 1800s. The MBTA is enforced by the USFWS, and potential constraints to species protected under this law may be evaluated by the USFWS during the consultation process.

If any removal of trees, shrubs, or other vegetation that could support nesting bird species is scheduled to occur during the typical nesting season (February 15 to August 31), preactivity nest surveys should be conducted to determine if birds are actively nesting within the project area. Any work near active bird nests will need to be avoided until the young have left the nest.

2.1.1.6. EXECUTIVE ORDER 11988 – FLOODPLAINS MANAGEMENT

Executive Order 11988 was signed on May 24, 1977, to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative, According to Executive Order 11988, each Federal agency shall provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this Order.

The proposed project was determined to have a minimal encroachment with no significant impacts on the flood-carrying capacity of the SLO Creek (Questa Engineering, 2007). No significant impacts on local flooding are predicted to result from the proposed project.

2.1.1.7. EXECUTIVE ORDER 11990 – PROTECTION OF WETLANDS

Executive Order 11990 was enacted on May 24, l977, to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative, According to Executive Order 11990, each Federal agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the

natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities. Each Federal agency, to the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors.

The proposed project has been designed to avoid//minimize harm to wetlands to the extent feasible.

2.1.1.8. EXECUTIVE ORDER 13112 – INVASIVE SPECIES

On February 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. The Executive Order requires that a Council of Departments dealing with invasive species be created. Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, (1) identify such actions; (2) (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

The proposed project has included avoidance and minimization measures to address the introduction and spread of invasive species in the Biological Study Area (BSA).

2.1.2. State Policies and Regulations

2.1.2.1. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Guidance for determining CEQA significance thresholds is based on Appendix G of the state CEQA Guidelines. Using these guidelines, activities requiring CEQA review within the project study area would have a significant impact on biological resources if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Game (CDFG) or the USFWS;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA;

- Interfere substantially with the movement of any resident or migratory species of wildlife, wildlife corridors, or wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources; and/or,

- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP) or other approved local, regional, or state habitat conservation plan.

2.1.2.2. CALIFORNIA ENDANGERED SPECIES ACT

California has a parallel mandate to the FESA, which is embodied in the California Endangered Species Act of 1984 (CESA) and the Native Plant Protection Act of 1977 (NPPA). CESA ensures legal protection for plants listed as rare or endangered, and wildlife listed as threatened or endangered. The CDFG regulates activities that may result in take of such species. CESA has a much less inclusive definition of take (limited to direct takes such as hunting, shooting, capturing, etc.) that does not include the broad "harm" and "harassment" definitions in federal law. The CDFG also maintains a list of California Special Concern (CSC) species based on limited distribution, declining populations, diminishing habitat, or unusual scientific,

recreational, or educational value. Under state law, the CDFG is empowered to review projects for their potential to affect state-listed species and CSC species, and their habitats.

In addition, certain plants are listed as rare or endangered by the California Native Plant Society (CNPS), but have no designated status. The CDFG has authority during the CEQA process to review potential constraints to rare plant species and require mitigation to reduce the level of significance. The CEQA Guidelines, Section 15065 (”Mandatory Findings of Significance”), requires that a reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (”Rare or endangered species”) provides for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the CNPS Lists 1A, 1B, and 2 are typically considered under CEQA.

Take of state-listed species would require a Section 2081 Incidental Take Permit from the CDFG. This process requires submittal of a sensitive species study and permit application package, and is similar to the FESA Section 10 process, except that the CDFG is the regulatory and decision-making agency. A Section 2081 Incidental Take Permit from the CDFG for CESA compliance will not be required for the proposed project, because no take of state-listed species is expected.

2.1.2.3. FISH AND GAME CODE

Section 1602

Section 1602 of the State of California Fish and Game Code requires any person, state or local government agency, or public utility proposing a project that may affect a river, stream, or lake to notify the CDFG before beginning the project. If activities will result in the diversion or obstruction of the natural flow of a stream, substantially alter its bed, channel, or bank, impact riparian vegetation, or adversely affect existing fish and wildlife resources, a Streambed Alteration Agreement is required. This agreement lists the CDFG conditions of approval relative to the project, and serves as an agreement between an applicant and the CDFG for a term of not more than five years for the performance of activities subject to Section 1602. CDFG has 30 days to review a notification application upon receipt and 60 days to issue a Streambed Alteration Agreement. Due to current staffing and funding constraints, Streambed Alteration Agreements are occasionally not processed in this time-frame; therefore, CDFG may issue an “operation of law letter” that allows a project to proceed as planned, but requires resubmission of a notification package if the project changes.

According to CDFG, all proposed crossings of SLO Creek would be subject to CDFG jurisdiction and require a Streambed Alteration Agreement or operation of law letter (Hillyard, 2006). Any work activities within the floodplain of SLO Creek would also require a Streambed Alteration Agreement (Hillyard, 2006), but the selected Build Alternative path route has been positioned avoid the SLO Creek floodplain.

Other Fish and Game Code Sections

California Fish and Game Code Section 3503 includes provisions to protect the nests and eggs of birds. Section 3513 requires State of California compliance with the Federal MBTA. Sections 3511, 4700, 5050, and 5515 include provisions to protect Fully Protected species, such as 1) Prohibiting take or possession "at any time" of the species listed in the statute, with few exceptions; 2) stating that "no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take the species; and, 3) stating that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession. The CDFG is unable to authorize incidental take of Fully Protected species when activities are proposed in areas inhabited by those species. Any project-related activities that could result in take of any Fully Protected species such as white-tailed kite (*Elanus leucurus*) would need to be avoided.

2.1.2.4. CALIFORNIA WATER CODE SECTION 13263(A)

California Water Code Section 13263(a) requires that waste discharge requirements (WDRs) be prescribed as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge (SWRCB, 2004). It is the intent of these General WDRs to regulate a subset of the discharges that have been determined not to fall within federal jurisdiction, particularly those projects involving impacts to small acreage or linear feet and those involving a small volume of dredged material. Such WDRs must implement any relevant water quality control plans, taking into consideration beneficial uses to be protected, the water quality objectives reasonably required for those purposes, other waste discharges, the need to prevent nuisance, and other provisions of the Water Code.

General WDRs are restricted to dredged or fill discharges of not more than two-tenths (0.2) of an acre and 400 linear feet for fill and excavation discharges, and of not more than 50 cubic yards for dredging discharges. Projects that may be covered under these General WDRs include land development, detention basins, disposal of dredged material, bank stabilization, revetment, channelization, and other similar projects. To the extent they are determined to fall within federal jurisdiction, it is likely that the

State Water Resources Control Board (SWRCB) and RWQCBs will continue to regulate dredged or fill discharges primarily through their authority under CWA Section 401 of the CWA; therefore, General WDRs do not apply to discharges to federal waters that are subject to Sections 401 and 404 of the CWA. Discharges that could have a significant impact on rare, candidate, threatened, or endangered species require detailed project-specific analysis and individual regulation and may not be authorized by General WDRs.

Since the proposed project will impact riparian areas not under federal jurisdiction, a Notice of Intent may need to be submitted to SWRCB/RWQCB to obtain a General WDR.

2.1.3. Local Policies and Regulations

Caltrans and the County of San Luis Obispo (County) are lead agencies that conduct CEQA environmental review for projects under their jurisdiction requiring their approval. The lead agency may require botanical and/or wildlife surveys and reporting from a qualified biologist prior to ground disturbance for projects that may affect natural habitats within the project area.

The main local policy guidance for SLO Creek is the San Luis Obispo Creek Waterway Management Plan (Program) (City of San Luis Obispo and County of San Luis Obispo, 2003). The Program encompasses the watershed area of SLO Creek and its tributaries, and applies to properties that are regulated by the County and the City of San Luis Obispo. The Program is a combination of policies, programs, and plans proposed to address flooding and flood control along SLO Creek and its tributaries. The project planning for activities and development within and affecting the stream corridor has historically been managed or guided by the policies of numerous different agencies.

For biological communities, County standards dictate that development shall be designed and located to minimize adverse impacts to important biological resources. Any removal of native trees for the proposed project will be mitigated with the planting of replacement trees in a manner described in the conceptual Habitat Mitigation and Monitoring Plan (HMMP) (refer to Appendix I) and consistent with County standards.

2.2. Studies Required

Several focused surveys/studies for special-status species and habitats are required to satisfy requirements of federal and state regulatory laws and local CEQA-level analyses. Surveys were conducted within the BSA (refer to Figure 2 and Appendix F) based on species lists obtained from the California Natural Diversity Database (CNDDB, 2006-2008), from USFWS (USFWS, December 2012), and information provided by the CNPS (CNPS, 2006-2008). The list of species obtained from USFWS reaffirmed the CNDDB records and augmented the number of species for consideration.

For the purposes of this project, the BSA is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. The Area of Direct Impact (ADI) is defined as the area that is either temporarily or permanently, but directly, impacted by construction and construction-related activities.

Biological survey efforts summarized within this NES focused on the vicinities of the proposed pathway route, access, and staging areas. Areas located outside of, but adjacent to the project site were included in field survey efforts to maximize the potential for observing special-status species with migratory behaviors or life histories. Studies were timed appropriately when the special-status species in question were most likely to be present, or when regulations allowed/recommended.

SWCA Environmental Consultants (SWCA), conducted biological surveys for the proposed project. Focused surveys for special-status plants known to occur in the region and with the potential for occurrence onsite were initiated within the BSA on February 23 and 24, 2006 by SWCA Biologists Geoff Hoetker and Travis Belt. Spring surveys were conducted on May 30, 2006 by SWCA biologists Geoff Hoetker and Katie Thaxter. Supplemental summer surveys were conducted on July 11, 2006 by Geoff Hoetker. Surveys were timed to correspond with the appropriate flowering seasons for regional special-status plant species. In addition, a floristic inventory of the BSA was compiled within the project site during these dates following the guidelines of CDFG (CDFG, 2000) and USFWS (USFWS, 1996). Plants were identified with dichotomous keys used as necessary (Hoover, 1970; Hickman, ed., 1993). Presence or absence of special-status plant species in the project area was confirmed during the floristic surveys. General-level reconnaissance surveys for special-status wildlife coincided with the 2006 botanical surveys. A list of plants and wildlife observed within the BSA is included in Appendix J.

The BSA is within the south-central California coast region for steelhead, which is a federally threatened species. This particular area is defined as that geographic region north of the Santa Maria River, northward to (and including) the Pajaro River (and its tributaries), Santa Cruz County. No protocol survey method exists for steelhead; however, steelhead were readily visible during reconnaissance surveys and the potential for suitable habitat was assessed during biological surveys of the project site.

The BSA is within the range of the CRLF, which is also a federally threatened species. A site assessment for CRLF habitat was conducted following USFWS protocol (USFWS, 2005) from February 2006 to March 14, 2007 by SWCA Biologists Geoff Hoetker and Travis Belt. The results of the CRLF site assessment were submitted to the Ventura USFWS office on April 2, 2007. Upon review of the CRLF site assessment, USFWS determined that presence of CRLF within the BSA could be inferred and protocol surveys would not be required (Elvin, 2007).

A wetland delineation/jurisdictional determination was conducted within the BSA on April 3 and 4, 2008. Supplemental botanical inventories were also conducted in April 2008 during field work for the wetland delineation. The routine wetland determination methodology was followed, as described in the 1987 USACE Wetlands Delineation Manual (USACE, 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2006). The full Wetland Assessment is included in Appendix H, and the results are summarized in Chapter 4 of this NES.

2.3. Personnel and Survey Dates

Table 1 summarizes biological survey efforts conducted to date.

Table 1. Survey Tasks, Dates, Personnel, and Methodology

Study or Survey	Date	SWCA Personnel	Methodology
Floristic Surveys and Reconnaissance Wildlife Surveys	February 23 and 24, 2006	Geoff Hoetker and Travis Belt	CDFG (2000) and USFWS (1996) guidelines for floristic surveys; no specific protocol for wildlife
Floristic Surveys and Reconnaissance Wildlife Surveys	May 30, 2006	Geoff Hoetker and Katie Thaxter	CDFG (2000) and USFWS (1996) guidelines for floristic surveys; no specific protocol for wildlife
Floristic Surveys and Reconnaissance Wildlife Surveys	July 11, 2006	Geoff Hoetker	CDFG (2000) and USFWS (1996) guidelines for floristic surveys; no specific protocol for wildlife
CRLF Site Assessment	February 23 and 24, 2006; July 11, 2006; January 9, 2007; March 14, 2007	Geoff Hoetker and Travis Belt	USFWS revised guidelines (2005)
Wetland Delineation	April 3 and 4, 2008	Geoff Hoetker and Jon Claxton	USACE (1987) methodology and USACE regional Arid West Supplement (2006)

2.4. Agency Coordination and Professional Contacts

Table 2 summarizes agency coordination and professional contacts to date.

Table 2. Agency Coordination and Professional Contacts

Name	Agency/Company	Title/Responsibility	Type of Coordination
Jan Di Leo	County of San Luis Obispo	Parks Planner	Project Coordination
Julie Eliason	County of San Luis Obispo	Environmental Resource Specialist	Environmental Planning
Mike Giuliano	Caltrans	Local Assistance	Project Coordination
John Smida	Caltrans	Local Assistance	Project Coordination
Gary Ruggerone	Caltrans	Environmental Planning	Project Coordination
Tom Edell	Caltrans	Biologist	Project Coordination
Diane Noda	USFWS	Field Supervisor	CRLF site assessment
Chris Kofron	USFWS	Senior Fish and Wildlife Biologist	Environmental Planning
Julie Vanderwier	USFWS	Senior Fish and Wildlife Biologist	Environmental Planning
Steve Henry	USFWS	Fish and Wildlife Biologist	Species List Request
Mark Elvin	USFWS	Fish and Wildlife Biologist	CRLF Site Assessment
Chris Dellith	USFWS	Fish and Wildlife Biologist	CRLF Proposed Critical Habitat
Anthony Spina	NMFS	Fisheries Biologist	Steelhead Critical Habitat
Deborah Hillyard	CDFG	Biologist	Environmental Planning, Field Visit
Bob Stafford	CDFG	Biologist	Environmental Planning
Julie Means	CDFG	Senior Environmental Scientist	Streambed Alteration Agreement
Jeff Phillips	USFWS	Deputy Assistant field Supervisor	Federal Species List

2.4.1. Agency Coordination Summary

November 30, 2005: Crystahl Handel (SWCA) submitted a letter request to Steve Henry (USFWS Biologist) requesting a USFWS-approved species list for the proposed project.

August 10, 2006: Geoff Hoetker and Keith Miller (SWCA) attended a meeting with Chris Kofron and Julie Vanderwier (USFWS), Bob Stafford and Deborah Hillyard (CDFG), and Julie Eliason (County of San Luis Obispo Department of Planning and Building) to discuss the project and the route alternatives. A field visit with CDFG was tentatively scheduled for September 6, 2006.

September 6, 2006: Geoff Hoetker and Keith Miller (SWCA) and Jeff Peters (Questa Engineering) conducted a field visit with Deborah Hillyard (CDFG) to discuss the project and seek CDFG input on project design. According to Ms. Hillyard, all proposed crossings of SLO Creek and any other work activities within the floodplain of SLO Creek would be subject to CDFG jurisdiction and require a Streambed Alteration Agreement or operation of law letter (Hillyard, 2006). Ms. Hillyard also commented that avoiding impacts to bird nesting would be an issue along the SLO Creek riparian corridor. Least Bell's vireo would not be a concern. Ms. Hillyard also commented that while bats may occur within the BSA, the only area within the BSA that may be capable of supporting roosting bats is the existing South Higuera Street Bridge.

September 7, 2006: Geoff Hoetker (SWCA) had a phone conversation with Mark Elvin (USFWS Biologist) regarding the potential for the project to affect CRLF. Mr. Hoetker indicated that a field visit had just been conducted with CDFG. Mr. Hoetker informed Mr. Elvin that the CRLF Site Assessment Report would eventually be submitted to USFWS for review, and that SWCA would be waiting on further direction on the potential need to conduct protocol CRLF site surveys.

September 20, 2006: Geoff Hoetker (SWCA) contacted Tom Edell (Caltrans) via email to have him review the preliminary list of species with potential for occurrence.

September 21, 2006: Geoff Hoetker (SWCA) received an email reply from Tom Edell (Caltrans). Mr. Edell indicated that the list of species considered was adequate from a NEPA standpoint. For CEQA purposes, he suggested adding yellow-breasted chat (*Icteria virens*) based on recent coastal records including a likely breeding at San Simeon State Park a couple of years ago. Yellow warbler (*Dendroica petechia*) was also a possibility because it was found nesting along Price Canyon in spring/summer

2006. Cooper's hawk (*Accipiter cooperi*) was more likely to occur within the BSA than sharp-shinned hawk (*Accipiter striatus*). There was a recent nesting record for loggerhead shrike (*Lanius ludovicianus*) in the SLO area. This species would not be expected in riparian habitat, but possibly in open areas nearby. These species should be considered when surveying for the project and during any preconstruction surveys. Mr. Edell noted that SLO Creek is not appropriate habitat for least Bell's vireo (LBV) (*Vireo belli pusillus*), that western yellow-billed cuckoo (*Coccyzus americanus occidentalis*),is not expected to nest in SLO County, and that it is unlikely that bald eagle (*Haliaeetus leucocephalus*) would nest along SLO Creek.

October 17, 2006: Geoff Hoetker (SWCA) contacted Anthony Spina (NMFS) via email to inquire whether the tributaries of SLO Creek are included in the federal critical habitat designation for the south central California coast steelhead ESU.

October 18, 2006: Geoff Hoetker (SWCA) received an email reply from Anthony Spina (NMFS) (Spina, 2006) with documentation delineating steelhead critical habitat areas (NMFS, 2005). The mainstem of SLO Creek was included in the critical habitat designation but its tributaries examined in this NES are not considered critical habitat.

April 2, 2007: SWCA submitted the CRLF Site Assessment Report for the project to Dianne Noda (USFWS Field Supervisor) for review and to determine whether protocol CRLF surveys would be necessary for the proposed project.

May 11, 2007: Geoff Hoetker (SWCA) contacted Julie Vanderwier (Ventura USFWS) regarding the status of review of the CRLF Site Assessment Report. Ms. Vanderwier told Mr. Hoetker to contact Mark Elvin (USFWS Biologist), who had been assigned to the project. Mr. Hoetker contacted Mr. Elvin and left him a voicemail message.

May 14, 2007: Mark Elvin (USFWS Biologist) contacted Geoff Hoetker (SWCA), informing Mr. Hoetker that based on the information provided in the CRLF Site Assessment Report, the presence of CRLF in the project BSA could be inferred and protocol CRLF surveys would not be necessary. Mr. Elvin also mentioned that the FHWA Programmatic Biological Opinion for CRLF (USFWS 2003, revised in 2011) would be applicable for this project.

July 1, 2008: Geoff Hoetker (SWCA) contacted Julie Means (CDFG) via email to inquire about the extent of CDFG jurisdiction within the SLO Creek floodplain.

July 7, 2008: Geoff Hoetker (SWCA) received an email and phone response from Julie Means (CDFG) regarding the extent of CDFG jurisdiction within the SLO Creek floodplain. Ms. Means indicated that CDFG prefers to consider each project within a floodplain on a case-by-case basis, and those factors such as hydrology, vegetation, and the locations of buildings and other structures typically influence where CDFG claims jurisdiction within a floodplain.

January 8, 2009: Geoff Hoetker (SWCA) contacted Chris Dellith (USFWS Biologist) via phone to inquire regarding proposed CRLF critical habitat in the vicinity of SLO Creek. Mr. Dellith checked USFWS maps and indicated that the boundary of proposed CRLF critical habitat Unit SLO-3 ends at approximately the intersection of Marsh Street and Broad Street in downtown San Luis Obispo (northeast of the Bob Jones Pathway – San Luis Obispo to Ontario Road project area). The boundary line then abruptly heads west from this intersection. Locations along SLO Creek south of this boundary line, including the proposed project area discussed herein, do not fall with proposed CRLF critical habitat Unit SLO-3.

November 26, 2012: On behalf of the County, Travis Belt (SWCA) submitted a written request to USFWS for an updated project species list. USFWS sent the updated species list on December 31, 2012.

2.5. Limitations That May Influence Results

Special-status plant species with the potential to occur in the project area may be annual species that may be difficult to detect following seasons of abnormal rainfall, or during those times of the year when particular species do not typically flower; however, botanical surveys were timed to accommodate the flowering period for the species considered in this NES. Special-status animal species with the potential to occur in the project area may be cryptic (difficult to detect) or transient, migratory species. The population size and locations of special-status species may also fluctuate dramatically through time. This may lower the predictive value of known plant and wildlife locations as indicators of future occurrences. Although reconnaissance surveys were performed, riparian trees within the BSA were not surveyed in detail for nesting birds. Additional nesting bird surveys are recommended prior to construction if vegetation removal activities will occur during the typical nesting bird season (February 15 to August 31).

Chapter 3. Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. Biological Study Area

As stated previously, the BSA is defined as the area that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. The BSA encompasses an area in the vicinity of SLO Creek between San Luis Obispo and Avila Beach, California. The northern terminus of the BSA begins just southwest of the LCSLO's Octagon Barn on South Higuera Street; continues south along a corridor that includes SLO Creek, State Route 101, and adjacent lands; and, reaches the southern terminus at the Ontario Road Staging Area/parking lot, south of Avila Bay Drive (refer to Figures 2 and 3 and Appendices A and B).

The size of the BSA is approximately 6,477,607 ft² (601,789 m^2) (148.7 ac) and encompasses an area larger than the area likely to be impacted by project-related activities. The BSA includes the location of the proposed pathway route in the vicinity of State Route 101 and adjacent agricultural and conservation lands, various stream crossings over SLO Creek, potential access and staging areas, and roadside drainages and other aquatic areas within the immediate vicinity of proposed project activities.

3.1.2. Physical Conditions

The north-to-south oriented BSA roughly parallels SLO Creek and State Route 101, east of the Irish Hills, in central San Luis Obispo County at an elevation of approximately 50 to 150 feet (15 to 46 meters). SLO Creek is a perennial stream subject to flooding, and is the dominant hydrological feature within the BSA. This stream is fed by a number of perennial and ephemeral drainages, including the East Fork of SLO Creek, Davenport Creek, and several unnamed tributaries. Land use in the area is primarily agricultural and conservation lands.

During the site visits, SLO Creek was inundated with several inches to several feet of flowing water. Water levels within the project area are expected to be substantially higher during the wet season (typically recognized as October 15 to June 30). Some features of SLO Creek were previously mapped for the *Waterway Management Plan*

for San Luis Obispo Creek Watershed (City of San Luis Obispo and County of San Luis Obispo, 2003) and have been incorporated into the habitat mapping for this project.

The Soil Conservation Service (SCS) has mapped 14 soil series within the BSA (SCS, 1984). These include map units (MUs): 116 – Chamise shaly clay loam, 15 to 30 percent slopes; 120 – Concepcion loam, 2 to 5 percent slopes; 131 – Diablo and Cibo clays, 10 to 30 percent slopes; 142 – Gaviota fine sandy loam, 15 to 50 percent slopes; 152 – Lodo-rock outcrop complex, 30 to 75 percent slopes; 156 – Lopez very shaly clay loam, 30 to 75 percent slopes; 169 – Marimel sandy clay loam, occasionally flooded; 181 – Nacimiento-Calodo complex, 30 to 50 percent slopes; 191 – Pismo-Tierra complex, 9 to 15 percent slopes; 194 – Riverwash; 197 – Salinas silty clay loam, 0 to 2 percent slopes; 198 – Salinas silty clay loam, 2 to 9 percent slopes; 203 – Santa Lucia shaly clay loam, 30 to 50 percent slopes; and 210 – Still gravelly sandy clay loam, 2 to 9 percent slopes. USACE jurisdictional limits and existing soil series are described in more detail in the Wetland Assessment (refer to Appendix H**).**

3.1.3. San Luis Obispo Creek Watershed

Much of the information in regards to the SLO Creek watershed as addressed in this NES has been provided by the following sources:

- *Waterway Management Plan for San Luis Obispo Creek Watershed, Volume 1, Appendix B: Biological Resources Inventory* (City of San Luis Obispo and County of San Luis Obispo, 2003). The Waterway Management Plan (WMP) contains inventory information, a detailed hydrologic/hydraulic analysis of the watershed and its main tributaries, and an identification of the management problems and management needs of the waterways;

- *Distribution and Abundance of Steelhead in the San Luis Obispo Creek Watershed, California* (Thomas R. Payne & Associates, 2004), which generated estimates of abundance and described the distribution of juvenile steelhead rearing during the summer low-flow period throughout the SLO Creek watershed; and,

- *Distribution of the Five Native Fish Species in the San Luis Obispo Creek Watershed* (Tamagni, 1995), which contains information on the distribution of the five native fish species in the watershed and habitat data.

The SLO Creek watershed is centrally located in San Luis Obispo County between the Santa Lucia Mountains and coastal hills of central California. Its headwaters originate in the foothills near Cuesta Grade north of San Luis Obispo, flowing approximately 18 miles (29 km) to the Pacific Ocean at San Luis Bay, near the community of Avila Beach. The general flow of water is from the northeast to the southwest, closely paralleling State Route 101 south of San Luis Obispo. The city of San Luis Obispo encompasses 9.5 mi^2 (24.6 km^2) near the center of the watershed, with the remaining 84 mi^2 (217 km^2) watershed area in County jurisdiction.

SLO Creek and the following major tributaries were considered in the WMP: East Fork of SLO Creek, Prefumo Creek, Froom Creek, Stenner Creek, Brizziolari Creek (tributary to Stenner Creek), See Canyon Creek, Old Garden Creek (tributary to Stenner Creek), and Davenport Creek. SLO Creek, the East Fork of SLO Creek (East Fork), and Davenport Creek are three streams included in the BSA that were examined for this NES.

The watershed extends from a high elevation of 2,461 ft (750 m) above sea level near Cuesta Grade to sea level at Avila Beach. SLO Creek is the major waterway that runs through the city of San Luis Obispo, which is situated at an elevation of about 230 ft (70 m) (downtown). The drainage area of the SLO Creek watershed at its mouth is approximately 84.2 mi^2 (218 km^2). The basin is a slightly elongated area about 13 miles (21 km) long and between 6.2 and 10 miles (10 and 16 km) wide, with a dendritic drainage pattern.

The upper watershed is steep, and SLO Creek and its tributaries flow through narrow canyons with steep stream gradients in their headwaters. From its headwaters, SLO Creek spills onto a small sparsely developed grassy plateau-like area below Cuesta Grade at Reservoir Canyon, before descending onto the gently to moderately sloping alluvial plain occupied by the city of San Luis Obispo. East Fork and Davenport Creek drain the Islay Hill area. East Fork drains an area of generally flat to rolling relief on the east side about 1.2 miles (2 km) below (south of) the confluence of Prefumo Creek and the city limits. Davenport Creek drains a rugged canyon area on the east side of SLO Creek below East Fork.

While SLO Creek is incised into an alluvial plain within the downtown and upper residential area of the city of San Luis Obispo, it crosses the broader upper Los Osos Valley and the lower Laguna Lake area before changing its character below Froom Creek and Los Osos Valley Road. The creek descends through a narrow alluvial

valley bounded by the steep Irish Hills in this area. The narrowest part of this segment begins near the confluence of Davenport Creek with SLO Creek, and is referred to as "The Narrows" by local residents. The San Luis Obispo Valley downstream of The Narrows ranges from about 985 to 1970 ft (300 to 600 m) wide. SLO Creek turns abruptly westward from its southerly ascent through the city and lower valley area to enter a more narrow and steep-sided canyon before discharging into an estuary area at Avila Beach below the See Canyon confluence.

Only about 11 percent of the watershed is urbanized; principally the town of San Luis Obispo and the surrounding unincorporated area, and the small community of Avila Beach; however, the urbanized area upstream of the lower urban reserve limits of the city (near Los Osos Valley Road) is about 15 percent of the watershed above this point. The urbanized area is predominantly suburban, with the exception of the central downtown area where building densities are higher with a larger percentage of impervious surfaces. Much of the upper and lower watershed is in open space, used as grazing land or range. Upper watershed areas are not heavily wooded; oak forests occur predominantly on north facing canyon slopes and canyon bottoms, with chaparral vegetation generally on steep south facing slopes and areas with shallow, rocky soils.

Many changes have taken place in the SLO Creek watershed since 1960 (Tamagni, 1995). Urban and agricultural development has channelized the watershed and encroached upon the riparian corridor in many stretches. Groundwater pumping has reduced flows and toxic spills have resulted in fish kills; however, upgrades to the San Luis Obispo wastewater treatment plant have improved the quality of effluent discharged into SLO Creek and implementation of the WMP has benefited the watershed.

3.1.3.1. UPPER WATERSHED

The areas in the watershed that consist of cool, clear water passing through V-shaped canyons are located mainly in the upper reaches of the drainage, above the city of San Luis Obispo (Tamagni, 1995). This area is well north of the BSA and is not examined in detail for the purposes of this NES.

3.1.3.2. MIDDLE WATERSHED

The portions of the watershed in the mid-section include SLO Creek from its confluence with Reservoir Canyon Creek downstream to a point just above the outlet of the wastewater treatment plant. This includes all of Davenport Creek downstream to its confluence with SLO Creek and all of the East Fork to its confluence with SLO

Creek. In the mid-reaches of the watershed, portions of the riparian corridor are severely fragmented due to development (Tamagni, 1995). The SLO Creek streambed has been altered and straightened through this section and passes through an underground culvert through sections of San Luis Obispo. Water quality is influenced throughout this section from both urban and agricultural runoff. The stream bottom consists of larger (shallower) pools than the upper sections of the watershed with some riffles in between. Sediment buildup in this section is higher due to increased erosion and a declining stream gradient. Upstream portions of this area usually have a perennial flow with downstream portions becoming intermittent during the summer months.

The lower, wetted portion of the middle reach is similar in character to the lower reach (described next), but with less streamflow (Thomas R. Payne & Associates, 2004). In the upper, urban portion of the middle reach, SLO Creek is relatively open with less riparian vegetation but larger substrate (i.e., more gravel, cobble, boulder, and bedrock) than the lower reach. Pools in the middle reach are relatively and exceeded in size only by pools in the lower reaches.

3.1.3.3. LOWER WATERSHED

The lower section of the SLO Creek main channel extends from the wastewater treatment facility downstream to the Pacific Ocean. While the riparian corridor is established throughout most of this section, it is only a few trees wide to almost non-existent in some areas due to agricultural encroachment. Water quality has historically been poor throughout most of this section due to the outflow of secondary treated sewage effluent at the wastewater treatment facility (Tamagni, 1995), but has improved in recent years. The lower reach contains a thick riparian zone with an abundance of instream cover provided by overhanging branches, aquatic vegetation, accumulations of woody debris, and occasional undercut banks (Thomas R. Payne & Associates, 2004). Most of the channel substrate is composed of sand, silt, or fine gravel, with little cover provided by larger substrate elements. Pool habitats in the lower reach are longer, wider, and deeper than pools in any other reach. Riffles, in contrast, are typically very short and represent the smallest proportion of habitat (nine percent) of all reaches.

SLO Creek flows throughout the lower stretch all year; however, during the late summer and early fall the continuous overland flow can be mainly attributed to the influx of treated sewage effluent. If there was no effluent discharge from the San Luis Obispo wastewater treatment plant, the summer baseflow normally would not provide

enough water for continuous overland flow (Tamagni, 1995); however, continual flow may be possible following an above average rainfall year. The stream flow is generally slow through this section with high siltation, limited shallow pools, and many aquatic plants. Fresh water from See Canyon Creek enters SLO Creek at a point northeast of Avila Beach, and Castro Canyon adds additional fresh water approximately 2.5 miles (4 km) above this point, north of the intersection of San Luis Bay Drive and State Route 101. Historically, these fresh water influxes have diluted the severely polluted water to some extent and a positive change in fish populations has resulted below these areas (Tamagni, 1995).

3.1.4. Biological Conditions in the Biological Study Area

3.1.4.1. NATURAL COMMUNITIES

Natural communities/habitats present within the BSA include agricultural land, ruderal (disturbed), landscaping/ornamental vegetation (including groundcover and planted trees), non-native annual grassland, serpentine bunchgrass, coastal scrub, coast live oak woodland, riparian (including riparian forest, riparian scrub, freshwater marsh, and riverine habitats), and seasonal wetlands (refer to Habitat Impacts Maps in Appendix F). Much of the remaining areas within the BSA consist of roads, buildings, and other artificial structures, and are largely unvegetated and have been mapped as developed areas but not quantified. Habitats in the BSA have been mapped using global positioning system (GPS) and geographic information system (GIS) technology, and dominant plant species observed and wildlife species expected to occur in these habitats are described below. Each of the natural communities mentioned above are mapped in Appendix F and quantified in Table 3. A list of species observed during surveys conducted within the BSA is included in Appendix J, and photos of habitats within the BSA are included in Appendix K.

Agricultural Land

Agricultural fields occupy a large portion of BSA (refer to Appendices F and K). These fields support row crops, orchards, fallow areas, and disturbed dirt access roads and edges. Agricultural fields may provide habitat for rodents, other small mammals, and foraging birds, but are unlikely to support sensitive species because they are often subjected to considerable disturbance unsuitable for these species. Approximately 2,881,920 ft² (267,739 m²) (66.00 ac) of agricultural land were mapped within the BSA.

Table 3. Natural Community/Habitat Quantities in the BSA

Plant Community/Habitat	ft^2	m^2	ac
Agricultural Land	2,881,921	267,739	66.00
Ruderal (Disturbed)	638,218	59,292	14.60
Landscaping/Ornamental Vegetation	52,936	4,918	1.20
Non-native Annual Grassland	558,931	51,926	12.80
Serpentine Bunchgrass	25,015	2,324	0.57
Coastal Scrub	306,757	28,499	7.04
Coast Live Oak Woodland	93,285	8,667	2.14
Riparian	1,337,871	124,292	30.70
Seasonal Wetlands	6,793	631	0.15

Ruderal (Disturbed)

Ruderal habitat typically consists of areas dominated by the growth of weedy species tolerant of disturbance. Ruderal habitat occurs in disturbed areas within the BSA that are not landscaped, including road edges, unpaved lots, areas where vegetation has been cleared, etc. (refer to Appendices F and K). Ruderal areas within the BSA are dominated mainly by nonnative annual weedy species such as red-stem filaree (*Erodium cicutarium*), common sow thistle (*Sonchus oleraceus*), Italian thistle (*Carduus pycnocephalus*), bull mallow (*Malva nicaensis*), wild radish (*Raphanus* spp.), black mustard (*Brassica nigra*), telegraph weed (*Heterotheca grandiflora*), castor bean (*Ricinus communis*), common groundsel (*Senecio vulgaris*), hoary cress (*Cardaria draba*), and several others. Non-native Mediterranean grass species also thrive in ruderal areas. Because of the disturbance to which they are subjected, ruderal habitats are not likely to support sensitive plant or wildlife species, but may contain disturbance-tolerant species such as western fence lizard (*Sceloperus occidentalis*) or California ground squirrel (*Spermophilus beecheyi*). Approximately 638,218 ft^2 (59,292 m^2) (14.60 ac) of ruderal (disturbed) habitat were mapped within the BSA.

Landscaping/Ornamental Vegetation

Portions of the BSA are vegetated by ornamental species, or other herbaceous plants, shrubs, and trees typically used for landscaping. Landscaped areas occur primarily near residences and along road edges and medians (refer to Appendices F and K). Several introduced species have been planted for landscaping within the BSA, such as

acacia tree (*Acacia* sp.), iceplant (*Carpobrotus edulis*), birdsfoot trefoil (*Lotus corniculatus*), garden nasturtium (*Tropaeolum majus*), ornamental lupine (*Lupinus* spp.), clover (*Trifolium* sp.), and violet (*Viola* sp.), as well as Monterey pine (*Pinus radiata*) that have been planted in certain residential areas. Because these plants tend to grow or be planted in disturbed areas, they do not typically support sensitive species habitat; however, areas landscaped with planted trees may support habitat for nesting, roosting, or foraging bird species. Approximately 52,936 ft² (4,918 m^2) (1.20 ac) of landscaping / ornamental vegetation were mapped within the BSA.

Non-native Annual Grassland

Non-native annual grasslands occur throughout a large portion of California, primarily below 3,000 feet elevation on fine-textured, usually clay soils. This vegetation type is dominated by introduced annual grasses in association with many species of showy native forbs (herbaceous annual plants such as wildflowers), especially in years of abundant rainfall. These grasses and flowers germinate with the onset of late fall and winter rains. Growth, flowering, and seed-set occur from winter through spring. Most annuals in this community die by summer and persist as seeds until the return of winter rains. Annual grasslands can support good quality habitat for sensitive species along the central coast of California, especially plant species.

Non-native grasslands comprise one of the more dominant plant communities in the region, particularly west of State Route 101 and west of the BSA. These communities are mostly undeveloped grasslands or used as rangeland or pastures (refer to Appendices F and K). Areas vegetated by non-native annual grassland in or near the BSA include patches east of Monte Road, the southern portion of the Bunnell property, and a section of the Filipponi Ecological Reserve north of the East Fork of SLO Creek. Dominant species are typically introduced Mediterranean grasses such as wild oat (*Avena* spp.), brome grasses (*Bromus* spp.), Italian ryegrass (*Lolium multiflorum*), and Harding grass (*Phalaris aquatica*). Approximately 558,930 ft² (51,926 m^2) (12.8 ac) of non-native annual grassland were mapped within the BSA.

Serpentine Bunchgrass

Serpentine bunchgrass is a declining and rare plant community recognized as a CNDDB Sensitive Habitat (CNDDB, 2006-2008). This community is restricted to serpentinite rock sites, and is open grassland dominated by perennial bunchgrasses such as *Nassella* spp. Total cover is typically low, but markedly dominated by native species (Holland, 1986). This community is widely scattered throughout the Coast Ranges. An area including a patch of serpentine bunchgrass was identified in the

BSA, just south of the East Fork of SLO Creek, on the Filipponi Ecological Reserve (refer to Appendices F and K). This patch of grassland occurs on a serpentine rock outcrop between a hill to the east of the BSA and SLO Creek to the west, and is mainly dominated by purple needlegrass (*Nassella pulchra*). Approximately 25,015 ft² (2,324m^2) (0.57 ac) of serpentine bunchgrass were mapped within the BSA.

Coastal Scrub

Coastal scrub communities support shrubs that are 1 to 2 meters high, typically characterized along the central California coast by species such as coyote brush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), sage (*Salvia* spp.), and bush monkeyflower (*Mimulus aurantiacus*). The understory may be sparse to moderately dense.

Coastal scrub primarily occurs interspersed amongst coast live oak woodlands and annual grasslands along the west facing hillsides east of Monte Road (refer to Appendices F and K). These coastal scrub communities support a mixture of coastal sage scrub and central coastal scrub, with dominant species such as coyote brush, California sagebrush, black sage (*Salvia mellifera*), bush monkeyflower, along with several other woody perennials and herbaceous annuals. Coastal scrub communities provide habitat for various wildlife species, including lizards, various nesting bird species, and rabbits (*Sylvilagus* spp. and *Leporis californicus*). Approximately 306,758 ft² (28,499 m^2) (7.04 ac) of coastal scrub habitat were mapped within the BSA.

Coast Live Oak Woodland

Coast live oak woodland is dominated by evergreen coast live oaks, reaching 10 to 25 m (33 to 82 ft) in height. These cismontane woodland communities typically grow on north-facing slopes, shaded ravines in the south and more exposed sites in the north (Holland, 1986). The shrub layer is typically poorly developed, but may include species such as toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), or elderberry (*Sambucus* spp.). The herb component is continuous and dominated by brome grasses (*Bromus* spp.) and other introduced species.

Coast live oak woodlands primarily occur along the west facing hillsides east of Monte Road (refer to Appendices F and K). These woodlands support nearly monotypic stands of coast live oak, with some toyon in the understory, and a ground cover of mainly introduced Mediterranean grasses. Coast live oak woodland communities provide habitat for various wildlife species, including lizards, various

nesting bird species (including raptors), raccoon (*Procyon lotor*), and mule deer (*Odocoileus hemionus*). Approximately 93,284 ft² (8,667 m^2) (2.14 ac) of coast live oak woodland habitat were mapped within the BSA. Impacts to oak trees are not expected because the route will avoid oak woodlands.

Riparian

Riparian communities occur adjacent to existing flowing stream channels, along seasonally flooded arroyos, or along ponds or depressional areas located close to ground water. These communities occur as transitional areas between riverine and upland habitats. Riparian habitat is often indicative of waters of the U.S. and/or jurisdictional wetland habitat. Along stream channels, riparian habitat may fall within USACE jurisdiction in areas below the OHWM and within CDFG jurisdiction toward the outer extent of riparian growth. Riparian habitat may also fall outside of the jurisdiction of these agencies if typically riparian trees such as willow, cottonwood, or walnut occur in isolated areas away from stream or other aquatic systems. The riparian habitat within the BSA includes a mosaic of riparian forest, riparian scrub, and the freshwater marsh and riverine habitats along SLO Creek and sections of tributaries, as well as isolated riparian trees in some areas. Riparian forest, riparian scrub, freshwater marsh, and riverine areas have been mapped together as "riparian habitat" (refer to Appendices F and K). Approximately 1,337,870 ft² (124,292 m^2) (30.70 ac) of riparian habitat were mapped within the BSA.

Riparian forest habitat occurs within riparian corridors adjacent to perennial stream channels with seasonally variable depths to the water table. These communities are similar to riparian scrub habitats, but typically provide a more contiguous upper canopy of larger tree species. SLO Creek itself has a nearly continuous riparian corridor from its headwaters at Cuesta Grade to Avila Beach. The riparian forest habitat within the BSA can be further classified as central coast arroyo willow riparian forest (Holland, 1986). Dominant tree species of the riparian forest communities within the BSA support a diverse assemblage, including southern California black walnut (*Juglans californica* var. *californica*), western sycamore (*Platanus racemosa*), cottonwood (*Populus spp.*) box elder (*Acer negundo* var. *californicum*), California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia),* arroyo willow (*Salix lasiolepis*), and coast live oak.

Riparian scrub occurs below the riparian forest layer. The riparian scrub habitat within the BSA can be further classified as central coast riparian scrub (Holland, 1986). These riparian scrub communities are typically close to groundwater and

usually vegetated by willows (*Salix* spp.) (Holland, 1986). They have relatively low overstories compared to riparian forest communities. Dominant plant species for this habitat type within the BSA include arroyo willow, with species such as California blackberry (*Rubus ursinus*), greater periwinkle (*Vinca major*), and garden nasturtium at the ground layer. Young coast live oak trees and coyote brush are occasionally interspersed with the willows in these riparian scrub communities.

Freshwater marsh communities typically occur in nutrient-rich mineral soils saturated throughout most of the year. These communities are found in locations containing slow-moving or stagnant shallow water and a high water table (Holland, 1986). Such sites commonly occur in stream channels and around springs, seeps, and depressional areas. Standing water does not have to be present throughout the entire year, since the water table is so close to the soil surface that it can be tapped in the dry season by hydrophytic plants. Freshwater marsh vegetation ranges from sparse to moderately dense along the channel section traversing the BSA, including species such as watercress (*Rorripa nasturtium-aquaticum*), smartweed (*Polygonum* sp.), brown-headed rush (*Juncus phaeocephalus*), umbrella sedge (*Cyperus eragrostis*), and spikerush (*Eleocharis macrostachya*).

Riverine habitat along the streambed of SLO Creek is seasonally variable and includes open water components (active, flowing channel), unvegetated sandbars (riverwash, active floodplain), and seasonally emergent wetlands. The stream gradient of this habitat type is low, water velocities are slow, and floodplains are typically well developed. The stream reach through the project site is channelized with steep banks, approximately 15 to 20 ft (4.5 to 6 m) high. Substrate within this habitat type is variable and consists of silt, sand, gravel, and cobbles. Using the Cowardin et al. (1979) classification, SLO Creek can be described as Riverine, Upper Perennial, Unconsolidated Bottom, and Permanently Flooded. The tributaries of SLO Creek within the BSA are riverine intermittent streambeds, with some supporting riparian vegetation and others without (refer to Appendices F and K).

Riparian habitats provide habitat for a diverse assemblage of aquatic, semi-aquatic, and terrestrial wildlife species. Native fish known to occur in the SLO Creek watershed include steelhead trout, speckled dace (*Rhinichthys osculus*), threespine stickleback (*Gasterosteus aculeatus*), prickly sculpin (*Cottus asper*), and Pacific lamprey (*Petomyzon tridentat*) (Tamagni, 1995). Introduced fish species include goldfish (*Carassius auratus*), largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), mosquitofish (*Gambusia*

affinis), channel catfish (*Ictalurus punctatus*), brown bullhead (*Ameiurus nebulosus*), golden shiners (*Notemigonus crysoleucas*), and fathead minnows (*Pimephales promelas*) (Tamagni, 1995). Common carp (*Cyprinus carpio*) has also been observed in SLO Creek (personal observation). When and where each of these species was introduced is speculative. Some were introduced to Laguna Lake and have since been swept downstream to habitat in the lower stretches of SLO Creek; others were possibly used as baitfish at one time or another (Tamagni, 1995).

A variety of amphibian and reptile species are expected to occur in association with riparian areas within the BSA including Pacific chorus frog (*Pseudacris regilla*), and southwestern pond turtle (SWPT) (*Actinemys marmorata pallida*). The non-native crayfish (*Procambarus* sp.), and bullfrog (*Rana catesbeiana*) were also observed during reconnaissance surveys, and are known to be numerous throughout the channel. Although there are no records from this stretch of SLO Creek, the federally threatened CRLF also occurs in riverine habitats and adjacent uplands. Riparian areas also provide important nesting, roosting, and foraging habitat for a variety of migratory songbirds and various raptors.

Seasonal Wetlands

Certain areas of low relief within the BSA adjacent to the floodplain of SLO Creek support seasonal wetlands (refer to Appendices F and K) and are inundated for only a portion of the year, but long enough to support the growth of hydrophytic ("water-tolerant") vegetation. Areas that are occasionally inundated support stands of facultative wetland species such as poison hemlock, of which a small but homogenous patch occurs within the BSA. Areas more frequently inundated, such as the center of the SLO Creek floodplain, support wetland species such as brown-headed rush and spikerush but these areas occur outside of the BSA. The seasonal wetlands within the BSA are isolated and not considered jurisdictional. This is discussed in more detail in the Wetland Assessment (refer to Appendix H). Approximately 6,793 ft² (631 m^2) (0.15 ac) of seasonal wetlands were mapped within the BSA.

3.1.4.2. IMPORTANT NATURAL COMMUNITIES

Wetlands and Other Waters

Wetlands may be defined as those areas transitional between open water and upland habitats. Wetlands function to improve water quality, detain storm water runoff, recharge groundwater, and provide wildlife habitats. USACE jurisdictional wetlands and other waters (jurisdictional aquatic areas lacking wetland vegetation) were identified within the BSA along SLO Creek and drainages with connectivity to SLO