Name	Agency/Company	Title/Responsibility	Type of Coordination
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 path 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).

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 National Environmental Policy Act (NEPA) standpoint. 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 evolutionarily significant unit (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 BA 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 that 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 Existing Biological and Physical Conditions

3.1.1. Biological Study Area

As stated previously, 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 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 Land Conservancy'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 ft^2 (601,789.2 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 path 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 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.

3.1.3. SLO Creek Watershed

Much of the information regarding the SLO Creek watershed as addressed in this BA 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 BA.

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 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 SLO 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 SLO 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 has not been examined in detail for the purposes of this BA.

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 SLO 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 5. A list of species observed during surveys conducted within the BSA is included in Appendix H and photos of habitats within the BSA are included in Appendix I.

Agricultural Land

Agricultural fields occupy a large portion of BSA (refer to Appendices F and I). 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 3,397,641 ft^2 (315,662 m^2) (78.00 ac) of agricultural land were mapped within the BSA.

Table 5. 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 I). 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 I). 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 m2) (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 I). 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 m2) (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 I). 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 (2,324m2) (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 (refer to Appendices F and I). 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 m2) (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 I). 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 m2) (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 I). Approximately 1,337,870 ft^2 (124,292 m2) (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 (*Rorippa 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, 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 I).

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 (*Lamprey tridentata*) (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 I) 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. Approximately 6,793 ft^2 (631 m2) (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 its tributaries. USACE jurisdictional other waters were identified within the BSA along a drainage ditch with connectivity to SLO Creek near the northern section of the proposed project. CDFG jurisdictional areas were also identified and mapped along the SLO Creek riparian corridor and its

tributaries as well as the aforementioned drainage ditch. Jurisdictional wetlands and other waters in the BSA have been mapped in a separate Wetland Assessment that will be submitted to USACE and other regulatory agencies.

Riparian Corridors

Riparian corridors are considered sensitive and important habitats by various regulatory agencies. Within the BSA, riparian corridor areas include SLO Creek and sections of tributaries. The diversity of wildlife species occurring within riparian habitats is typically high and these habitats are sensitive to disturbance. Riparian vegetation provides important roosting and foraging habitat for migratory bird species, regulates water temperatures, and provides, directly or indirectly, food sources for aquatic organisms. Riparian habitats serve as migratory corridors for wildlife, and as such, are important in linking non-contiguous or fragmented wildlife habitats. Activities within the SLO Creek riparian corridor in the BSA may fall under jurisdiction of the USACE, RWQCB, and CDFG.

3.1.4.3. MIGRATION AND TRAVEL CORRIDORS

SLO Creek provides a migration and travel corridor for steelhead trout and other aquatic species. The riparian corridor of SLO Creek contains sufficient tree canopy that provides suitable travel corridors for various birds and terrestrial wildlife species passing through surrounding developed areas. More mobile animal species may traverse surrounding developed areas, but at a greater risk of exposure. No apparent barriers to aquatic species migration were observed within the BSA.

3.1.4.4. INVASIVE SPECIES

A total of 36 invasive plant species as identified by the California Invasive Plant Council (Cal-IPC) Inventory (2007) were observed within the BSA. Four exotic plant species were identified with an invasiveness rating of High were observed in the BSA (refer to List of Species Observed in Appendix H): giant reed (*Arundo donax*), red brome (*Bromus madritensis*), iceplant (*Carpobrotus edulis*), and fennel (*Foeniculum vulgare*). A total of 20 plant species observed within the BSA with a Cal-IPC invasiveness rating of Moderate and 12 species with an invasiveness rating of Limited were also observed in the BSA. The distribution of these invasive plant species is scattered throughout the BSA, with notable concentrations of giant reed along particular areas of the SLO Creek riparian corridor. The Land Conservancy of San Luis Obispo County has been actively eradicating giant reed along the project pathway in recent years.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

In this BA, the term "effect" reflects a quantifiable or qualifiable change or response to an activity. Impacts to habitats within the project BSA have been quantified based on the project Area of Direct Impact (ADI). The ADI was derived from the project plans presented as of March 2010 and includes the permanent and temporary impact areas listed below.

Permanent impact areas include the pathway trail including pavement and shoulders, graded bridge approaches, bridge piers and footings, retaining walls, traffic barriers, culverts, and new permanent parking areas. Also quantified as permanent impacts are bridge spans where riparian trees must be removed for construction and on-going maintenance, landscape screen planting areas, and the entire trail ROW because permanent maintenance is assumed.

The ADI was overlain with habitat mapping and with jurisdictional areas to quantify both permanent and temporary impacts. Estimated impacts to habitats characterized and described in Chapter 3.1.4.1 are quantified in Table 6.

Impacts to aquatic areas could result from hazardous material spills, and increased erosion and sedimentation. Construction of the new pathway and associated structures, the new bridges, and the State Route 101 overcrossing would permanently impact vegetation displaced by these structures and temporarily impact vegetation within the disturbance corridor needed by construction equipment and worker foot-traffic.

Table 6. Estimated Impacts to Habitats

Habitat Type	Permanent			Temporary			TOTAL		
	ft^2	m^2	ac	ft^2	m^2	ac	ft^2	m^2	ac
Agricultural Land	73,812	6,857	1.69	150,935	14,022	3.47	**224,747**	**20,879**	**5.16**
Ruderal (Disturbed)	63,619	5,910	1.46	193,611	17,987	4.44	**257,230**	**23,897**	**5.9**
Landscaping/ Ornamental	4,025	374	0.09	14,758.13	1,371.07	0.34	**18,783**	**1,745**	**0.43**
Annual Grassland	32,339	3,004	0.74	138,678	12,884	3.18	**171,017**	**15,888**	**3.92**
Serpentine Bunchgrass	0	0	0	0	0	0	**0**	**0**	**0**
Coastal Scrub	22,625	2,102	0.52	60,379	5,609	1.39	**83,004**	**7,711**	**1.91**
Oak Woodland	0	0	0	305	28	0.01	**305**	**28**	**0.01**
Riparian	39,065	3,629	0.90	126,097	11,715	2.89	**165,162**	**15,344**	**3.79**
Seasonal Wetlands	2,483	231	0.06	2,030	189	0.05	**4,513**	**420**	**0.11**
Developed	29,399	2,731	0.67	127,213	11,818.44	2.92	**156,612**	**14,549**	**3.59**

4.1. Federally Listed, Candidate, and Proposed Plant Species Occurrences

Potential habitat occurs within the BSA for plant species that may be federally listed as threatened or endangered, formal candidates for listing, or proposed for listing. The plant species included in Table 1 with suitable habitat present within the BSA have been addressed as a group for conciseness. A brief description of each species considered follows.

4.1.1. Discussion of Marsh Sandwort (*Arenaria paludicola*), Pismo Clarkia (*Clarkia speciosa* ssp. *immaculata*), and Gambel's Water Cress (*Rorippa gambelii*)

Marsh sandwort (*Arenaria paludicola*) is a stoloniferous herb in the pink family (Caryophyllaceae) that is native to California and Washington. It occurs in bogs and ferns along with freshwater marshes and swamps. The species flowers from May to August. It is federally listed as endangered and is known to occur in coastal lake and

spring habitats in San Luis Obispo County (CNDDB, 2006-2008) and is not expected to occur in inland locations.

Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*) is an annual herb in the evening primrose family (Onagraceae) that is endemic to California and found only in San Luis Obispo County. It occurs in chaparral margins and openings, cismontane woodland, and valley and foothill grassland in sandy soils. The species flowers from May to July. Pismo clarkia is a federally endangered species. It is known to occur in the vicinity of Arroyo Grande, Nipomo, and surrounding areas (CNDDB, 2006-2008) and is not expected to occur in or near San Luis Obispo.

Gambel's water cress (*Rorippa gambelii*) is a rhizomatous herb in the mustard family (Brassicaceae) that is native to California. It occurs in freshwater or brackish marshes and swamps and flowers from April to September. It is federally listed as endangered.

4.1.1.1. SURVEY RESULTS

Floristic surveys were conducted in 2006 during the appropriate flowering periods to enable identification and determine presence or absence of special-status plant species within the BSA. Supplemental botanical inventories were also conducted in April 2008 during field work for the wetland delineation. Freshwater marsh, annual grassland, and coastal scrub habitats were considered to be the habitats that were most likely to support special-status plant species; however, these habitats are marginal within the BSA and may not be within the appropriate elevation limits or have the required soil types to support each of the special-status species considered for this BA.

Marsh sandwort and Pismo clarkia were not observed during floristic surveys. Gambel's water cress is restricted to four occurrences in California (CNPS, 2006-2008), and known from only Black Lake Canyon and Oso Flaco Lake in San Luis Obispo County (CNDDB, 2006-2008; CNPS, 2006-2008). This species was not observed during surveys within the BSA; rather, the common water cress (*Rorripa nasturtium-aquaticum*) was observed and can be differentiated from the endangered Gambel's water cress, which typically exhibits taller growth, dentate leaflets, and relatively more leaflets than common water cress (Hickman, 1993). No special-status plant species in Table 1 were observed in the BSA or are expected to occur.

4.1.1.2. CRITICAL HABITAT

The BSA does not occur within any designated critical habitat units for any federally listed plant species.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

Although no federally listed, candidate, or proposed plant species are expected to occur within the BSA, the following avoidance and minimization measure is recommended for special-status plant species:

1) Federally listed plant species were not observed during floristic surveys and are not expected to occur in the BSA; however, if any special-status plant species are observed in or near work areas during the monitoring of construction, the distribution of special-status plant species shall be mapped, marked off with exclusion zones, and avoided until the appropriate regulatory agencies (e.g., Caltrans, USFWS, and CDFG) are consulted for mitigation options. Should a federally listed plant species be found during monitoring or construction, Caltrans shall be notified so that it can initiate FESA Section 7 discussions with USFWS.

4.1.1.4. PROJECT EFFECTS

The proposed project will produce no effects that would impact federally listed, candidate, or proposed plant species. No take of federally listed, candidate, or proposed plant species is expected.

4.1.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

No modifications to the project to mitigate effects for federally listed, candidate, or proposed plant species are necessary.

4.1.1.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in this discussion because they require a separate consultation pursuant to Section 7 of the FESA. Cumulative effects for federally listed, candidate, or proposed plant species are not expected because none are expected to occur in the BSA, and there are no other known actions that are reasonably certain to occur in the action area.

4.2. Federally Listed, Candidate, and Proposed Animal Species Occurrences

Potential habitat occurs within the BSA for wildlife species that are federally listed as threatened or endangered, formal candidates for listing, or proposed for listing. The wildlife species included in Table 2 as having suitable habitat present within the BSA are addressed below.

4.2.1. Discussion of South-central California Coast Steelhead (*Oncorhynchus mykiss irideus*)

Steelhead are the anadromous form of rainbow trout. Steelhead historically ranged from Alaska southward to the California-Mexico border, though current data suggest that the Ventura River is presently the southernmost drainage supporting substantial steelhead runs. Steelhead along the central and southern California coast are important because they represent the southernmost portion of the native steelhead range in North America, having ecologically and physiologically adapted to seasonally intermittent coastal California streams.

All populations of steelhead occurring within the South-Central California Coast ESU Region, which 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, were listed as federally threatened by NMFS in August 1997.

Optimal habitat for steelhead throughout its entire range on the Pacific Coast can generally be characterized by clear, cool water with abundant instream cover (i.e., submerged branches, rocks, logs), well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio (Raleigh et al., 1984); however, steelhead are occasionally found in reaches of streams containing habitat that would be considered less than optimal. Steelhead within the central coast region begin migrating up coastal drainages following the first substantial rainfall of the fall season. Spawning typically occurs during the spring in riffle areas that consist of clean, coarse gravels. Deposited eggs incubate for approximately three to four weeks, with hatched fry rearing within the gravel interstices for an additional two to three weeks. Emergent fry rear at the stream margins near overhanging vegetation. Juveniles (smolts), after rearing for one to three years within freshwater, and post-spawning adults, outmigrate to the ocean from March to July, depending on streamflows.

4.2.1.1. SURVEY RESULTS

Steelhead are known to inhabit SLO Creek and were readily visible during surveys conducted for this BA. The SLO Creek watershed is composed of the main channel SLO Creek as well as numerous tributaries. Most tributaries are small and become dry or severely intermittent throughout the summer months, and thus provide little or no rearing habitat for juvenile steelhead. While several important tributaries do exist that are thought to provide significant rearing habitat to juvenile fish, other biologists have identified Davenport Creek and the East Fork of SLO Creek as unsuitable habitat for steelhead rearing during the summer survey due to extreme low flows with poor water

quality in widely isolated pools (Thomas R. Payne & Associates, 2004). These conditions were also apparent during the surveys SWCA biologists conducted for this BA.

SLO Creek is an important component of the south-central California coast steelhead ESU (Thomas R. Payne & Associates, 2004). Based on pool sampling, significant numbers of fry and juvenile steelhead occur in the main channel of SLO Creek, as well as selected tributaries. The total number of juvenile steelhead within the entire San Luis Obispo watershed is unknown, but is undoubtedly somewhat greater than the estimated abundance in pool habitats alone.

4.2.1.2. CRITICAL HABITAT

The National Marine Fisheries Service designated critical habitat for nineteen evolutionary significant units (ESUs) for salmon and steelhead on March 17, 2000 (NMFS, 2000). On April 30, 2002, the U.S. District Court for the District of Columbia approved the NMFS consent decree withdrawing the March 2000 critical habitat designation for steelhead. A revised critical habitat designation for seven Evolutionarily Significant Units of Pacific salmon and steelhead in California was finalized on September 2, 2005 (NMFS, 2005).

The primary constituent elements (PCEs) essential for the conservation within ESUs are those sites and habitat components that support one or more life stages, including:

1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development;
2) Freshwater rearing sites with: (i) water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; (ii) water quality and forage supporting juvenile development; and (iii) natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks;
3) Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival; and,
4) Estuarine areas free of obstruction and excessive predation with: (i) water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; (ii) natural cover such as submerged and

overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and (iii) juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

The main channel of SLO Creek occurs within the south-central California coast steelhead critical habitat unit defined as Estero Bay Hydrologic Unit 3310 – (xii) San Luis Obispo Creek Hydrologic Sub-area 331024. The East Fork of SLO Creek and Davenport Creek are not included in the critical habitat designation (NMFS, 2005). Based on surveys within the project area and a review of the relevant literature, the section of SLO Creek that traverses the BSA contains the constituent elements of steelhead critical habitat. SLO Creek is a known steelhead stream, and freshwater spawning and rearing sites are present within this drainage. There are no known major obstructions that prevent migratory steelhead from reaching these reaches of the stream, and steelhead were readily visible during site surveys. Tributaries of SLO Creek may be capable of support steelhead when water levels are adequate, but appear to support inferior habitat conditions as compared to SLO Creek and do not support critical habitat PCEs.

4.2.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures will serve to avoid or minimize impacts to steelhead and steelhead critical habitat:

The following measures will serve to avoid or minimize impacts to steelhead and steelhead critical habitat:

1) Prior to construction, a component including a description of south-central California coast steelhead, its ecology, and the need for conservation of the species shall be integrated into a worker environmental training program. All construction personnel conducting in-stream work shall participate in the training program conducted by a qualified biologist.
2) Prior to construction, the applicant will retain a qualified biological monitor(s) approved by all involved regulatory agencies to ensure compliance with avoidance and minimization measures within the project environmental documents. Monitoring will occur throughout the length of construction or as directed by the regulatory agencies. Full-time monitoring will occur during vegetation removal and erosion control installation. Monitoring may be reduced to part time once construction activities are underway and the potential for additional impacts are reduced.

3) Any construction activities across SLO Creek will take place between June 15 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will only be made with permission from the relevant regulatory agencies and Caltrans.
4) Prior to construction, the project site shall 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 shall be clearly flagged as off-limit areas to avoid/discourage unnecessary damage to sensitive habitats or existing vegetation within the project site.
5) Prior to construction, an Erosion Control Plan and Stormwater Pollution Prevention Plan (SWPPP) for the project shall be prepared. Provisions of these plans shall be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.
6) Prior to construction, the applicant shall prepare a Hazardous Materials (HAZMAT) Response Plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
7) A conceptual Habitat Mitigation and Monitoring Plan (HMMP) has been prepared (refer to Appendix K). Prior to construction, the applicant shall prepare a comprehensive final HMMP to mitigate impacts to vegetation and natural habitats. The final HMMP will include the specific mitigation sites along the vicinity of the SLO Creek riparian corridor, based on the specific mitigation acreage required by regulatory agencies during the permitting process. The HMMP shall be consistent with federal and state regulatory requirements and shall be amended with any regulatory permit conditions, as required. The applicant shall implement the HMMP as necessary during construction and immediately following project completion.
8) During construction, erosion control measures shall be implemented. Silt fencing, fiber rolls, and barriers (e.g., hay bales) shall be installed between the project site and adjacent wetlands and other waters. No synthetic plastic mesh products shall be used in any erosion control materials. At a minimum, silt fencing shall be checked and maintained on a daily basis throughout the construction period. The contractor shall also apply adequate dust control techniques, such as site watering, during construction.
9) To control erosion during and after project implementation, the applicant shall implement standard Caltrans best management practices (BMPs).

10) During construction, the cleaning and refueling of equipment and vehicles shall occur only within a designated staging area and at least 65 ft (20 m) from wetlands, other waters, or other aquatic areas. This staging area shall conform to BMPs applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles shall be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills.
11) During construction, all project-related hazardous materials spills within the project site shall be cleaned up immediately. Spill prevention and cleanup materials shall be on-site at all times during construction.
12) During construction, the biological monitor(s) shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project site shall be removed and properly disposed. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species. If soil from weedy areas (such as areas with poison hemlock or other invasive exotic plant species) must be removed off-site, the top six inches containing the seed layer in areas with weedy species shall be disposed of at a certified landfill.
13) During construction, trash shall be contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
14) During construction, no pets shall be allowed on the construction site.

4.2.1.4. PROJECT EFFECTS

The project may affect, but is not likely to adversely affect, south-central California coast steelhead. Construction of bridges across SLO Creek could result in the removal of riparian cover that provides thermoregulation for steelhead; although, this amount is estimated to be minimal. No in-stream work will be required. While the removal of trees to accommodate the new bridges may slightly alter shading and micro-climate characteristics of the riparian corridor, the bridge themselves would create shade over the section of the creek flowing underneath, and shading differences are likely to be negligible. The loss of trees to clear space for the bridge crossings will also be mitigated with replacement trees, which will offer shade and temperature regulation in other areas along SLO Creek.

The proposed project may affect, but will not adversely modify, south-central California coast steelhead critical habitat. Although there will be impacts resulting from trimmed or removed willows, these effects would be minor and would not substantially affect the ability of steelhead to spawn, rear young, migrate, or feed in

SLO Creek. It is anticipated the proposed project would permanently impact approximately 9,835 ft^2 (914 m^2) (0.23 ac) of steelhead critical habitat associated with construction of bridge crossings through the SLO Creek riparian corridor. Temporary impacts to approximately 19,671 ft^2 (1,827 m^2) (0.45 ac) of steelhead critical habitat are estimated to result from work space associated with bridge construction. There will be no permanent or temporary loss of service to steelhead because no in-stream work or fill will be required within SLO Creek.

4.2.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Mitigation proposed in Section 4.2.1.3 and to be included the final HMMP will be adequate to compensate for impacts to steelhead habitat. No other modifications to the project are proposed.

4.2.1.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in this discussion because they require a separate consultation pursuant to Section 7 of the FESA.

Historical land management practices in and adjacent to SLO Creek have resulted in a deterioration of habitat quality for steelhead and other aquatic organisms that inhabit the drainage. During recent years, restoration activities have been conducted along SLO Creek in an attempt to improve its water and habitat quality. Although implementation of the proposed project would result in the loss of some riparian vegetation, SLO Creek will ultimately benefit from habitat restoration and enhancement through the implementation of the final HMMP.

According to the County of San Luis Obispo, CDFG, and the LCSLO, current or reasonably foreseeable, non-federal actions within the BSA expected to affect steelhead or steelhead critical habitat include routine, ongoing agricultural practices and continued implementation of the Waterway Management Plan for SLO Creek (City of San Luis Obispo and County of San Luis Obispo, 2003).

4.2.2. Discussion of California Tiger Salamander (*Ambystoma californiense*)

The California tiger salamander (*Ambystoma californiense*) (CTS) is a federal threatened species. Critical habitat has been designated for the species, but not within the BSA. It is a large terrestrial salamander with several white or pale yellow spots or

bars on jet-black skin. The species ranges from Sonoma County, south to northwest Tulare County, and in the Coast Range south to Buellton and Lompoc in the Santa Ynez drainage. The CTS can be found from sea level to about 3,600 ft (1,067 m) (Jennings and Hayes, 1994; CNDDB, 2006-2008).

Adult CTS spend most of their life in upland habitats with burrows. They cannot dig their own burrows, and as a result their presence is associated with burrowing mammals such as ground squirrels. CTS use both occupied and unoccupied burrows (USFWS, 2004). During the mating season, these salamanders move to nearby vernal pools and similar water bodies. Breeding pools are typically large, and may include stock ponds if they are managed to preclude predatory fish species such as sunfish (Family Centrarchidae) (USFWS, 2004).

4.2.2.1. Survey Results

No CTSs were observed during reconnaissance surveys of the BSA; however, no USFWS protocol CTS surveys were conducted. According to the CNDDB, the nearest occurrence record for CTS is near the vicinity of San Luis Obispo; however, this is a museum record from 1939 and noted herpetologist M. R. Jennings considers the site extirpated (CNDDB, 2006-2008). There are no other known nearby occurrence records for this species.

SLO Creek does not support suitable breeding habitat for CTS due to perennial flows within the channel and the presence of exotic predators such as Centrarchid fishes and crayfish. Marginal upland habitat for CTS may reside within grasslands in the BSA, but they are likely to be unoccupied by the species as there is no nearby suitable breeding habitat. No vernal pool habitat occurs in the BSA. Protocol surveys are not necessary for this project.

4.2.2.2. Critical Habitat

The BSA is located outside of critical habitat for the species.

4.2.2.3. Avoidance and Minimization Efforts

As CTS is not expected to inhabit areas in or near the BSA, no avoidance and minimization measures are necessary.

4.2.2.4. Project Effects

The project will have no effect on CTS. The basis for this determination is that it is highly unlikely that CTS uses aquatic areas within the BSA for breeding and/or

adjacent uplands for estivation. In addition, there are no known recent nearby occurrence records for the species.

4.2.2.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

No modification to mitigate effects to CTS is proposed.

4.2.2.6. CUMULATIVE EFFECTS (FESA)

No cumulative effects to CTS are expected as the species does not reside in the BSA.

4.2.3. Discussion of California Red-legged Frog (*Rana aurora draytonii*)

The CRLF was formally listed by the USFWS as federally threatened in 1996. Critical habitat has been designated for the subspecies, but not within the BSA. The CRLF is recognized by the reddish color that forms on the underside of its legs and belly and the presence of a diagnostic dorsolateral fold. The subspecies historically ranged from Marin County southward to northern Baja California (Stebbins, 1972; 2003). Monterey, San Luis Obispo, and Santa Barbara counties support the largest remaining CRLF populations within California.

The CRLF prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 ft (0.7 m), and the presence of fairly sturdy underwater supports such as cattails. The largest densities of this subspecies are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation (Jennings and Hayes, 1994). The CRLF typically breeds from January to July, with peak breeding occurring in February. Eggs are attached to subsurface vegetation, and hatched tadpoles require 11 to 20 weeks to metamorphose. It is estimated that only one percent of eggs actually reach adulthood. Riparian habitat degradation, urbanization, predation by bullfrogs, and historic market harvesting have all reportedly contributed to its population decline.

4.2.3.1. SURVEY RESULTS

A CRLF Site Assessment Report for areas within the BSA was submitted to USFWS on April 2, 2007 (refer to Appendix G) in which SWCA biologists determined that suitable habitat for CRLF occurs within the BSA. No CRLFs were observed during the reconnaissance surveys of the BSA; however, on May 14, 2007, USFWS indicated that based on the information provided in the CRLF Site Assessment Report, protocol CRLF surveys would not be necessary and presence of CRLF in the project BSA

could be inferred (Elvin, 2007). It should be noted that the maps and information in the CRLF Site Assessment Report reflect the various project alternatives under consideration in March 2007 and may not exactly match the other maps included in this BA; however, the BSA under consideration in 2007 encompasses the BSA currently considered in this BA.

4.2.3.2. CRITICAL HABITAT

The United States Fish and Wildlife Service designated critical habitat for the CRLF on March 13, 2001 (USFWS, 2001). On July 2, 2002, the U.S. District Court approved a USFWS consent decree withdrawing the March 2001 critical habitat designation for the CRLF. A revised critical habitat designation for CRLF was finalized on April 13, 2006 (USFWS, 2006). Based on the 2006 ruling, SLO Creek and its tributaries do did not occur within a currently designated CRLF critical habitat unit. In response to litigation, USFWS proposed revisions to the CRLF Critical Habitat Designations in September 2008There is a recent proposal to include certain areas in San Luis Obispo County within new critical habitat units for California red-legged frog (USFWS, 2008c). However, the 2008 proposed rule was finalized in March 2010 (USFWS 2010). The March 2010 designations are the current rule for California red-legged frog critical habitat. The BSA is located just south of Unit SLO-3 and does not fall within any of these newly proposed current critical habitat units.

4.2.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

Although CRLF has not been observed in the BSA during project-related surveys, there is suitable habitat and CRLF presence should be inferred within the BSA (Elvin, 2007). The proposed project has the potential to impact CRLF and its habitat. Recommended avoidance and minimization measures, as provided by the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (USFWS, 2011) include the following:

1) Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of CRLFs.
2) Ground disturbance shall not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work. Caltrans shall request approval of the biologist from USFWS.
3) A USFWS-approved biologist shall survey the project area no more than 48 hours before the onset of work activities. If any life stage of the CRLF is found and these individuals are likely to be killed or injured by work activities, the approved biologist shall be allowed sufficient time to move them from the site before work

activities begin. The USFWS-approved biologist shall relocate the CRLFs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The USFWS-approved biologist shall maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs [digital preferred]) to assist him or her in determining whether translocated animals are returning to the point of capture.

4) Before any activities begin on a project, a USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the CRLF and its habitat, the specific measures that are being implemented to conserve the CRLF for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
5) A USFWS-approved biologist shall be present at the work site until all CRLFs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, the state or local sponsoring agency shall designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist shall ensure that this monitor receives the training outlined in measure 4 above and in the identification of CRLFs. If the monitor or the USFWS-approved biologist recommends that work be stopped because CRLFs would be affected to a degree that exceeds the levels anticipated by Caltrans and the USFWS during the review of the proposed action, they shall notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer shall 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, Caltrans and the USFWS shall be notified as soon as is reasonably possible.
6) During project activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
7) All refueling, maintenance and staging of equipment and vehicles shall occur at least 60 ft (18 m) from the riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans shall ensure that a plan is in place for prompt and effective response to any accidental spills. All workers shall be informed of the

importance of preventing spills and of the appropriate measures to take shall a spill occur.

8) Project areas shall be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials shall be used to the extent practicable. Invasive, exotic plants shall be controlled to the maximum extent practicable. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or practical. (For example, an area disturbed by construction that would be used for future activities need not be revegetated.)
9) Habitat contours shall be returned to their original configuration at the end of the project activities. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or modification of original contours would not benefit the CRLF.
10) The number of access routes, size of staging areas, and the total area of activity shall be limited to the minimum necessary to achieve the project. Environmentally Sensitive Areas shall be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to CRLF habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.
11) Caltrans will attempt to schedule work for times of the year when impacts to the CRLF 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 CRLFs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and technical assistance between Caltrans and the USFWS during project planning shall be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.
12) To control sedimentation during and after project implementation, Caltrans shall implement BMPs outlined in any authorizations or permits, issued under the authorities of the Clean Water Act received for the project. If BMPs are ineffective, Caltrans shall attempt to attempt to remedy the situation immediately, in consultation with the USFWS.
13) If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 0.2 inch (5 mm) to prevent CRLFs from entering the pump system. Water shall be released or pumped

downstream at an appropriate rate to maintain downstream flows during construction. The methods and materials used in any dewatering shall be determined by Caltrans in consultation with the USFWS on a site-specific basis. Upon completion of construction activities, any diversions or barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed shall be minimized to the maximum extent possible; any imported material shall be removed from the streambed upon completion of the project.

14) Unless approved by the USFWS, water shall not be impounded in a manner that may attract CRLFs.
15) A USFWS-approved biologist shall 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 USFWS-approved biologist shall be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.
16) If Caltrans demonstrates that the disturbed areas have been restored to conditions that allow the site to function as habitat for CRLF, these areas will not be included in the amount of total habitat permanently disturbed.
17) The project site will be re-vegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive exotic plants will be controlled to the extent practicable. This measure 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 practicable.
18) The Service approved biologist shall follow the fieldwork code of practice developed by the Declining Amphibian Task Force at all times.
19) Caltrans will not use herbicides as the primary method 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 measures to protect CRLF.

    a. Caltrans will not use herbicides during the breeding season for CRLF.
    b. Caltrans will conduct surveys for CRLF immediately prior to the start of herbicide use, If found, CRLF will be relocated to suitable habitat far enough from the project area that no direct contact with herbicide would occur.
    c. Giant reed and other invasive plants will be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster or Rodeo.

d. Licensed and experienced Caltrans staff or a licensed and experienced contractor will use a hand held sprayer for foliar application of Aquamaster or Rodeo where large monoculture stands occur at a project site.
e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
f. Herbicide 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 speed is 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 applications is made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S Environmental Protection Program county bulletins.
j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic areas. Caltrans will ensure that contamination of aquatic habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plant 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.

4.2.3.4. PROJECT EFFECTS

The use and movement of construction equipment, construction debris, vegetation removal, and worker foot traffic could produce effects that result in direct impacts to CRLF adults and sub-adults. Indirect effects of construction activities, including noise and vibration, may cause CRLFs to temporarily abandon habitat adjacent to work areas. This disturbance may increase the potential for predation and desiccation if CRLFs abandon shelter sites. The indirect effects of erosion and sedimentation could also impact CRLFs. The removal of any encountered exotic species from SLO Creek may produce a beneficial effect by likely increasing reducing predation and competition pressures for CRLF.

The project may affect, and is likely to adversely affect, CRLF. Although no CRLFs were observed during reconnaissance surveys within the BSA, USFWS has indicated that CRLF presence within the BSA should be inferred. There would be a potential for take of CRLF during construction in potential upland dispersal habitat adjacent to SLO Creek and any necessary capture and relocation of CRLF. The proposed project will also create temporary and/or permanent impacts to vegetation along SLO Creek, which may offer shading and microhabitat temperature regulation in the channel; however, the loss of trees will be mitigated with replacement trees. The potential for take of CRLF is believed to be very low, as CRLF are believed to be uncommon along the SLO Creek corridor.

4.2.3.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

The previously described avoidance and/or minimization measures for impacts to steelhead and CRLF will be sufficient to mitigate potential impacts to CRLF and its habitat. The final HMMP will detail revegetation and restoration methods for habitats. No other modifications to the project are proposed.

4.2.3.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in this discussion because they require a separate consultation pursuant to Section 7 of the FESA.

As previously described, historical land management practices in and adjacent to SLO Creek have resulted in a deterioration of habitat quality for aquatic organisms that inhabit the drainage. Although implementation of the proposed project would result in the permanent loss of a minor quantity of CRLF habitat, SLO Creek will ultimately benefit from habitat restoration and enhancement through the implementation of the final HMMP.

According to the County of San Luis Obispo, CDFG, and the LCSLO, current or reasonably foreseeable, non-federal actions within the BSA expected to affect CRLF include routine, ongoing agricultural practices and continued implementation of the Waterway Management Plan for SLO Creek (City of San Luis Obispo and County of San Luis Obispo, 2003).

4.2.4. Discussion of Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a candidate species for federal listing. It is an uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California (Zeiner et al., 1990). Formerly much more common and widespread throughout lowland California, its numbers have been drastically reduced by habitat loss.

A slender brown bird with white underparts, the western yellow-billed cuckoo's wings appear rufous or cinnamon in flight and the tail shows black with white spots. Although the cuckoo nests in walnut and almond orchards in California, its natural nesting habitat is in cottonwood-tree willow riparian forest. It usually arrives from South American wintering areas in June, and departs by late August or early September. The twig nest typically is on the horizontal branch of a tree willow in a location hidden from view from the ground or surrounding trees. In California, most eggs are laid mid-June to mid-July. Clutch size averages three to four eggs and both sexes incubate eggs and care for altricial young. Incubation lasts nine to 11 days and young may leave the nest at six to nine days. Food items are typically large insects.

4.2.4.1. SURVEY RESULTS

The species was included for consideration because it appears on the on-line USFWS federally listed species list for species potentially occurring in San Luis Obispo County (refer to Appendix D). No focused surveys were conducted for the species because there are no recent CNDDB records for the species in or near the BSA. There are museum records for eggs collected in the vicinity of San Luis Obispo in 1921 and 1932 (CNDDB, 2007-2008) but location data is apparently incorrect (see below).

The western yellow-billed cuckoo is a casual spring and fall transient in SLO County. Although its historic status within the county is unknown, it was likely a regular breeder in large cottonwood-willow riparian woodlands. There are only eight San Luis Obispo County records for the species over the last fifty years, two of which pertain to nesting birds. The six recent non-breeding records are from Morro Bay (1961), Los Osos (1980), Morro Bay (1989), Carrizo Plain (1991), Oso Flaco Lake (1999), and San Simeon Creek (1999). This species was probably a breeder in dense willow and other floodplain habitats in San Luis Obispo County until the 1930s and possibly even later (Edell, 2004). The County's two nesting records involve a fledgling collected in San Luis Obispo in 1921 (San Bernardino County Museum) and

an egg set taken in 1932 at "Mile's Station" in upper Avila Valley, which is incorrectly mapped by the CNDDB as a City of San Luis Obispo record (Edell, 2004).

There are no known recent nesting records in San Luis Obispo County and there are no known breeding locations outside of the currently known breeding locations, none of which occur in San Luis Obispo County (Edell, 2004). The subspecies is not expected to nest within the BSA or otherwise be impacted by the proposed project.

4.2.4.2. CRITICAL HABITAT

No critical habitat has been designated for western yellow-billed cuckoo.

4.2.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

Although western yellow-billed cuckoo is not expected to occur in the region, the following measures shall be applied to bird species in general.

1) Prior to construction, the applicant shall schedule vegetation removal to occur outside of the nesting season (September 1 to February 14) if possible, to prevent birds from nesting within areas of disturbance during or just prior to construction.
2) Prior to construction, if construction activities are proposed to occur during the typical nesting season (February 15 to August 31) within 200 ft (60 m) of potential nesting habitat, a nesting bird survey shall be conducted by qualified biologists in potential nesting habitat at least two weeks prior to construction to determine presence/absence of nesting birds within the project area. Work activities shall be avoided within 100 ft (30 m) of active bird nests and 200 ft (60 m) of active raptor nests until young birds have fledged and left the nest. Readily visible exclusion zones shall be established in areas where nests must be avoided. Caltrans shall be contacted if western yellow-billed cuckoo or any other federally listed bird species are observed during surveys. USFWS and CDFG shall be contacted for additional guidance if nesting birds are observed within or near the boundaries of the project site. Nests, eggs, or young of birds covered by the MBTA 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.
3) Vegetation removal in potential nesting habitats shall be monitored and documented by the biological monitor(s) regardless of time of year.

4.2.4.4. PROJECT EFFECTS

The proposed project will have no effect on western yellow-billed cuckoo. The basis for this determination is that riparian habitat in the BSA, while present, is unsuitable and there are no known nesting records in or near the BSA.

4.2.4.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

No cumulative effects to western yellow-billed cuckoo are expected as a result of the proposed action. There are no other known actions that are reasonably certain to occur in the action area that would contribute to additional cumulative effects.

4.2.4.6. CUMULATIVE EFFECTS

No cumulative effects to western yellow-billed cuckoo are expected as a result of the proposed action. There are no other known actions that are reasonably certain to occur in the action area that would contribute to additional cumulative effects.

4.2.5. Discussion of Least Bell's Vireo (*Vireo bellii pusillus*)

The least Bell's vireo (*Vireo bellii pusillus*) (LBV) is a federal endangered species. Critical habitat has been designated for the species, but not within the BSA. Historically, the LBV was a common to locally abundant species in lowland riparian habitat, ranging from coastal southern California through the Sacramento and San Joaquin Valleys as far north as Tehama County. It has also occurred in foothill streams of the Sierra Nevada and Coast Ranges.

LBVs usually arrive in California during mid- to late-March. They build their nests in a variety of plants that provide concealment in the form of dense foliage. The most frequently used species include willows, mulefat (*Baccharis salicifolia*), wild rose (*Rosa* spp.), poison oak, mugwort (*Artemisia douglasiana*), and cottonwood (*Populus* spp.). Nests are typically placed within 3.3 ft (1 m) of the ground. The nests are open-cup nests placed in the horizontal fork of a tree or shrub branch and bound at the rim. Females typically lay clutches of two to four eggs, and incubation takes 14 days. Nestlings fledge 10-12 days after hatching. Vireos usually leave breeding grounds by September, but will occasionally overwinter in California. Their primary diet is insects.

The species bred north of Santa Barbara County at the San Joaquin River National Wildlife Refuge in 2005 and 2006. In 1983 three territorial males were along a six-mile stretch of the Salinas River in Monterey County and a singing male was identified in San Luis Obispo County near San Miguel a couple of years ago (Edell,

2008); however, habitat is more important than the known distribution, and the riparian corridor of SLO Creek is not suitable for LBV and the subspecies is not expected to nest within the BSA or otherwise be impacted by the proposed project.

4.2.5.1. SURVEY RESULTS

The species was included for consideration because it appears on the on-line USFWS federally listed species list for species potentially occurring in San Luis Obispo County (USFWS, 2007). There are no CNDDB records for the species in or near the BSA, nor are there any known recent nesting records in the vicinity of the BSA. No LBVs were observed during reconnaissance surveys of the BSA.

Least Bell's vireos require riparian areas to breed and typically inhabit structurally diverse woodlands along watercourses. They occur in a number of riparian habitat types, including cottonwood-willow woodlands/forests, oak woodlands, and mule fat scrub. Several investigators have attempted to identify the habitat requirements of the least Bell's vireo by comparing characteristics of occupied and unoccupied sites and have focused on two features that appear to be essential: 1) the presence of dense cover within 3-6 feet of the ground, where nests are typically placed; and, 2) a dense, stratified canopy, which is needed for foraging (USFWS, 1998). This type of stratified riparian habitat structure with dense cover near the ground does not occur along the SLO Creek riparian corridor within the BSA.

4.2.5.2. CRITICAL HABITAT

Critical habitat has been designated for LBV; however, the BSA does not occur within any designated critical habitat units for this species.

4.2.5.3. AVOIDANCE AND MINIMIZATION EFFORTS

Although LBV is not expected to occur in the region, the following measures shall be applied to bird species in general.

1) Prior to construction, the applicant shall schedule vegetation removal to occur outside of the nesting season (September 1 to February 14) if possible, to prevent birds from nesting within areas of disturbance during or just prior to construction.
2) Prior to construction, if construction activities are proposed to occur during the typical nesting season (February 15 to August 31) within 200 ft (60 m) of potential nesting habitat, a nesting bird survey shall be conducted by qualified biologists in potential nesting habitat at least two weeks prior to construction to determine presence/absence of nesting birds within the project area. Work activities shall be avoided within 100 ft (30 m) of active bird nests and 200 ft (60 m) of active raptor

nests until young birds have fledged and left the nest. Readily visible exclusion zones shall be established in areas where nests must be avoided. Caltrans shall be contacted if LBV or any other federally listed bird species are observed during surveys. USFWS and CDFG shall be contacted for additional guidance if nesting birds are observed within or near the boundaries of the project site. Nests, eggs, or young of birds covered by the MBTA 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.

3) Vegetation removal in potential nesting habitats shall be monitored and documented by the biological monitor(s) regardless of time of year.

4.2.5.4. PROJECT EFFECTS

The proposed project will have no effect on LBV. The basis for this determination is that riparian habitat in the BSA, while present, is unsuitable and there are no known nesting records in or near the BSA.

4.2.5.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

No modifications to the project to mitigate effects to LBV will be required.

4.2.5.6. CUMULATIVE EFFECTS

No cumulative effects to LBV are expected as a result of the proposed action. There are no other known actions that are reasonably certain to occur in the action area that would contribute to additional cumulative effects.

4.2.6. Discussion of Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The southwestern willow flycatcher (SWWF) (*Empidonax traillii extimus*) is a federal endangered species. There are four or five recognized subspecies (races) of the willow flycatcher (*Empidonax traillii*). These subspecies are distinguished primarily by subtle differences in color and morphology. The SWWF is somewhat paler and has slightly different wing and tail length ratios. Each of the subspecies occupies distinct breeding ranges. The SWWF breeding range includes southern California (from the Santa Ynez River south), Arizona, New Mexico, extreme southern portions of Nevada and Utah, extreme southwest Colorado, and western Texas. Records of probable breeding SWWF in Mexico are rare and restricted to extreme northern Baja California and Sonora.

The SWWF breeds in dense riparian habitats along rivers, streams, or other wetlands. The vegetation can be dominated by dense growths of willows (*Salix* sp.), mule fat (*Baccharis salicifolia*), or other shrubs and medium-sized trees. There may be an overstory of cottonwood (*Populus* sp.), tamarisk (*Tamarix* sp.), or other large trees, but this is not always the case. In some areas, the flycatcher will nest in habitats dominated by tamarisk and Russian olive (*Eleagnus angustifolia*). One of the most important characteristics of the habitat is the presence of dense vegetation, usually throughout all vegetation layers present (USFWS, 2005).

The SWWF population has declined during the last 100 years, primarily due to the loss, fragmentation, and modification of riparian habitats. In 1993, the USFWS formally proposed to list the flycatcher as a federal endangered species, and to designate critical habitat on July 23, 1993. In a 1995 ruling, the USFWS found that the flycatcher population was currently very low and faced a significant threat of extinction unless protected. Therefore, the flycatcher was listed as endangered on February 27, 1995, but designation of critical habitat was postponed.

4.2.6.1. Survey Results

The species was included for consideration because it appears on the 2012 USFWS federally listed species list for the project area. There are no CNDDB records for the species in San Luis Obispo County, and the nearest known recent nesting records are from Kern County near Lake Isabella (CNDDB, 2013). Although the BSA does support suitable habitat for the species, SWWFs were not observed during reconnaissance surveys of the BSA. No impacts to the species are expected from the proposed project alternatives. No further studies for this subspecies are required.

4.2.6.2. Critical Habitat

The USFWS designated critical habitat for SWWF on January 3, 2013. None of the designated critical habitat units are located in San Luis Obispo County. The nearest designated critical habitat units are located in distinct reaches of the Santa Ynez River in Santa Barbara County.

4.2.6.3. Avoidance and Minimization Efforts

Although SWWF is not expected to occur in the region, the following measures shall be applied to bird species in general.

1) Prior to construction, the applicant shall schedule vegetation removal to occur outside of the nesting season (September 1 to February 14) if possible, to prevent birds from nesting within areas of disturbance during or just prior to construction.