SR 65 Capacity and Operational Improvements Project

Natural Environment Study

State Route 65, Cities of Roseville, Rocklin, and Lincoln, Placer County

03-PLA-65 PM R6.5 to R12.8

EA 03-1F170

April 2017

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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STATE OF CALIFORNIA
Department of Transportation
District 3

Prepared By: _____ Date: April 3, 2017

Angela Alcalá, Jeff Kozlowski, and Margaret Widdowson
Wildlife, Fish, and Plant Biologists
ICF International, Sacramento Office
630 K Street, Suite 400, Sacramento, CA 95814
916-737-3000

Recommended for Approval By: _____ Date: 04 APRIL 2017

Jason Meigs, Associate Environmental Planner
D-3 North Region Environmental Division
California Department of Transportation, District 3
916-274-0564

Approved By: Liza Walker Date: 4/7/17

Liza Walker, Senior Environmental Planner
E-M2 Branch Chief
California Department of Transportation, District 3
530-741-4139

Summary

S.1 Project Description

The California Department of Transportation (Caltrans), in cooperation with the Placer County Transportation Planning Agency (PCTPA), Placer County, and the Cities of Roseville, Rocklin, and Lincoln (collectively referred to as the project proponent), proposes to construct capacity and operational improvements on State Route (SR) 65 from north of Galleria Boulevard/Stanford Ranch Road to Lincoln Boulevard (6.3 miles, from post miles 6.5 to 12.8) in Placer County, California (Figure 1).

S.2 Purpose and Need

The SR 65 Capacity and Operational Improvements Project (project) would construct capacity and operational improvements on segment of SR 65 in Placer County, California, in order to reduce traffic congestion, improve operations and safety, and comply with current Caltrans and local agency design standards. Construction of the proposed improvements has independent utility. The proposed project is not dependent on other projects or improvements to meet the purpose and need.

S.3 Summary of Results and Impacts

Survey results and potential project-related impacts on wetlands, waters of the United States (which also are considered waters of the State), natural communities of special concern, and special-status species in the biological study area (BSA) (defined in Chapter 3) are summarized below.

S.3.1 Waters of the United States/Waters of the State, Including Wetlands

Seven types of potential waters of the United States (including wetlands) were delineated in the BSA, including perennial streams/drainages, ephemeral streams, ditches, riparian scrub wetland, emergent wetlands, seasonal wetlands, and vernal pools. The preliminary wetland delineation report is included in Appendix C, and the temporary and permanent impacts on potential waters of the United States (including wetlands) are summarized in Table S-1. On May 24, 2016, Caltrans submitted the delineation report to the U.S. Army Corps of Engineers (USACE) Sacramento District for a preliminary jurisdictional determination (PJD). On May 31, 2016, USACE biologist Will Ness acknowledged receipt of the PJD request and requested additional information. As of the date of this report, coordination with the USACE is ongoing.

S.3.2 Natural Communities of Special Concern and Native Trees

Four types of natural communities of special concern were identified and mapped in the BSA including riparian scrub wetland, emergent wetland, seasonal wetland, and vernal pool. The temporary and permanent impacts on all natural communities of special concern are summarized in Table S-1.

Table S-1. Impacts on Waters of the United States/Waters of the State and Natural Communities of Special Concern

Resource Type	Temporary (acres)	Permanent (acres)
Perennial stream/drainage	0.019	0.032
Ephemeral stream	0.038	0.015
Ditch	0.459	0.070
Riparian scrub wetland	0.029	0.170
Emergent wetland	0.462	0.858
Seasonal wetland	0.270	0.137
Vernal pool	0	0

S.3.3 Special-Status Species

Project-related direct (temporary and permanent) and indirect impacts on special-status species are summarized below.

S.3.3.1 Special-Status Plants

Special-status plants were not observed within the BSA during appropriately timed botanical surveys in parcels for which access was available. However, based on the known presence of dwarf downingia at one location in the BSA, it was determined that this plant, and other special-status plants associated with vernal pools, could occur in suitable habitat within the BSA that could not be accessed to conduct surveys. Vernal pools and seasonal wetlands in the BSA that were not surveyed due to access constraints are located outside the limits of disturbances (permanent and temporary impact areas). Accordingly, there would be no direct impacts on dwarf downingia and other special-status plants. However, suitable habitat for vernal pool plants that occur near construction activities could be indirectly affected.

S.3.3.2 Special-Status Wildlife

The following potential impacts on special-status wildlife species could result from project construction.

- Potential direct and indirect impacts on vernal pools that provide potential habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*).

- Loss of habitat and potential disturbance of western spadefoot (*Spea hammondii*) and northern western pond turtle (*Actinemys marmorata*) during construction activities within aquatic habitats and ground disturbance in nearby uplands.
- Potential disturbance of nesting burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), purple martin (*Progne subis*), tricolored blackbird (*Agelaius tricolor*), and other migratory birds and raptors during vegetation removal and from construction noise and activity.
- Potential disturbance of actively roosting bats within existing overcrossing structures.

The temporary and permanent impacts on special-status wildlife habitat from project construction are summarized in Table S-2.

Table S-2. Impacts on Special-Status Wildlife Habitat

Resource Type	Temporary (acres)	Permanent (acres)
Vernal pool fairy shrimp and vernal pool tadpole shrimp	N/A	0.067 (direct) 0.776 (indirect)
Western spadefoot (aquatic)	0.751	1.027
Western spadefoot (upland)	1.251	1.862
Northern western pond turtle (aquatic)	0.481	0.890
Northern western pond turtle (upland)	1.063	1.751
Northern harrier (nesting)	1.983	2.857
Tricolored blackbird (nesting)	0.491	1.028
Tricolored blackbird (foraging)	1.521	1.999
California black rail	0.124	0.615
Swainson's hawk (foraging), white-tailed kite (foraging), northern harrier (foraging); burrowing owl	1.251	1.862
Structure-nesting birds and roosting bats	Yes	No

S.3.3.3 Special-Status Fish

The following summarizes the special-status fish species that have the potential to occur in the BSA and the potential impacts that could result from project construction.

California Central Valley Steelhead

- The proposed project area on Orchard Creek and Pleasant Grove Creek may be accessible to California Central Valley (CCV) steelhead (*Oncorhynchus mykiss*), a federally-listed threatened species.
- There is a low likelihood of encountering CCV steelhead in Orchard Creek and Pleasant Grove Creek during construction of the project because in-channel construction activities would be limited to the summer dry season (i.e., June 1 to October 31), when it is very unlikely that CCV steelhead would be present in the proposed project area.

- The proposed project would result in temporary and permanent impacts on habitat for CCV steelhead, including potential for sedimentation, turbidity, and contaminant spills, permanent loss of aquatic habitat, and pollutants from new asphalt; however, avoidance, minimization, and compensation measures are proposed to avoid, minimize, and compensate for impacts.
- The proposed project area does not overlap with designated critical habitat for CCV steelhead, and direct and indirect environmental effects of the proposed project would not extend downstream to designated critical habitat in Auburn Ravine and the Cross Canal.
- The federal Endangered Species Act (ESA) determination is the proposed project would have *no effect* on CCV steelhead and designated critical habitat; therefore, no consultation is required under Section 7 of the ESA.

Central Valley Fall-Run Chinook Salmon

- The proposed project area on Orchard Creek and Pleasant Grove Creek may be accessible to Central Valley (CV) fall-run Chinook salmon (*Oncorhynchus tshawytscha*), a federal species of special concern.
- There is a low likelihood of encountering CV fall-run Chinook salmon in Orchard Creek and Pleasant Grove Creek during construction of the project because in-channel construction activities would be limited to the summer dry season (i.e., June 1 to October 15), when it is very unlikely that CV fall-run Chinook salmon would be present in the proposed project area.
- The proposed project would result in temporary and permanent impacts on habitat for CV fall-run Chinook salmon, including potential for sedimentation, turbidity, and contaminant spills, permanent loss of aquatic habitat, and pollutants from new asphalt; however, avoidance, minimization, and compensation measures are proposed to avoid, minimize, and compensate for impacts.
- CV fall-run Chinook salmon are not federally listed and critical habitat has not been designated for the species; therefore, no consultation is required under Section 7 of the ESA.

S.3.3.4 Essential Fish Habitat

Essential fish habitat (EFH) for Pacific salmon (i.e., Chinook salmon) has been designated in Orchard Creek and Pleasant Grove Creek, including the portions in the BSA. Temporary increases in sedimentation and turbidity, contaminant spills, and pollutants from new asphalt and a relatively small amount of permanent fill in the channel represent the primary factors that potentially could adversely affect EFH in the BSA. However, the proposed project contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects on EFH in freshwater habitats. The proposed project would have *no adverse effect* on EFH for Pacific salmon; therefore, no consultation is required under the Magnuson-Stevens Fishery Management and Conservation Act (MSA).

S.3.3.5 Invasive Plants

Invasive plant species were identified in the BSA. The proposed construction activities have the potential to further spread invasive species within and beyond the BSA. The spread of invasive plant species could result in potential long-term degradation of natural communities within habitat preserves adjacent to the BSA would conflict with Executive Order (EO) 13112 (*Prevention and Control of Invasive Species*). Implementation of the proposed avoidance and minimization efforts identified in Chapter 4 will prevent the spread of invasive plant species resulting from project construction.

S.4 Permit Requirements

The project proponent will obtain and implement the conditions of the permits listed in Table S-3. For more detail, see Chapter 5.

Table S-3. Permits and Approvals Potentially Required for the Proposed Project

Permit/Approval	Approving Agency
Endangered Species Act Section 7: inter-agency consultation	USFWS
Clean Water Act Section 404: placement of fill	USACE Sacramento District
Clean Water Act Section 401: Water Quality Certification	Central Valley RWQCB
California Fish and Game Code Section 1602	CDFW

S.5 Mitigation Agreements

As part of the proposed project, the project proponent will implement avoidance and minimization measures and will provide mitigation compensation, as shown in Table S-4 and described in more detail in Chapter 4. These measures have been identified on the basis of natural resources determined to be present in or having the potential to occur in the BSA, and the potential project-related impacts.

Table S-4. Avoidance and Minimization Efforts and Compensatory Mitigation

Description of Measure
Avoidance and Minimization Efforts
Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources
Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel
Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats
Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters
Measure 7: Avoid and Minimize Potential Indirect Impacts on Habitat for Vernal Pool Branchiopods and Other Vernal Pool Species
Measure 9: Provide Escape Ramps for Wildlife and Inspect Pits and Trenches Daily
Measure 10: Conduct a Pre-Construction Survey for Northern Western Pond Turtle and Exclude Turtles from the Work Area
Measure 11: Conduct Pre-Construction Surveys for Burrowing Owl and Establish Exclusion Zones, if Necessary
Measure 12: Conduct Pre-Construction Surveys for Swainson's Hawk and Establish Exclusion Zones, if Necessary
Measure 13: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors
Measure 14: Conduct Occupancy Surveys for California Black Rail and Implement Avoidance Measures, if Necessary
Measure 15: Modify Existing Structures during the Non-Breeding Season for Purple Martin and Other Structure-Nesting Migratory Birds or Implement Exclusion Measures to Deter Nesting
Measure 16: Conduct All In-Channel Construction Activities between June 1 and October 15
Measure 17: Implement Cofferdam and Stream Diversion Restrictions
Measure 18: Conduct Pre-Construction Surveys for Roosting Bats and Implement Protection Measures
Measure 19: Avoid and Minimize the Spread of Invasive Plant Species during Project Construction
Compensatory Mitigation
Measure 5: Compensate for the Placement of Fill into Wetlands
Measure 6: Compensate for the Placement of Permanent Fill into Other Waters
Measure 8: Compensate for Direct and Indirect Impacts on Vernal Pool Branchiopod Habitat

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List of Abbreviated Terms

°C	degrees Celsius
°F	degrees Farenheit
AMSL	above mean sea level
Basin Plans	Water Quality Control Basin Plans
BMPs	best management practices
BA	Biological Assessment
BSA	biological study area
Cal-IPC	California Invasive Plants Council
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CCV	California Central Valley
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
Central Valley Subprovince	Sacramento-San Joaquin Province
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CV	Central Valley
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DPS	distinct population segment
EFH	Essential fish habitat
EO	Executive Order
EO	Element Occurrence
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act

ESAs	Environmentally Sensitive Areas
ESU	evolutionarily significant unit
FHWA	Federal Highway Administration
FR	Federal Register
HOV	high-occupancy vehicle
HUC	hydrologic unit code
I-80	Interstate 80
ICF	ICF International
ISAC	Invasive Species Advisory Committee
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MOU	memorandum of understanding
MSA	Magnuson-Stevens Fishery Management and Conservation Act
MTP/SCS	2016 Metropolitan Transportation Plan/Sustainable Communities Strategy
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NISC	National Invasive Species Council
NMFS	National Marine Fisheries Service
NPDES	Pollutant Discharge Elimination System
OHWM	ordinary high water mark
OSPOMP	Open Space Preserve Overarching Management Plan
PAHs	polycyclic aromatic hydrocarbons
PCTPA	Placer County Transportation Planning Agency
PJD	preliminary jurisdictional determination
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
project	State Route 65 Capacity and Operational Improvements Project
proposed species	Species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register)
ROW	right-of-way
RSP	rock slope protection
SACOG	Sacramento Area Council of Governments
SR	State Route

SRA	shaded riverine aquatic
SR 65	State Route 65
State Water Board	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VA	Value Analysis
waters of the state	waters of the State of California
WDRs	waste discharge requirements

Chapter 1 Introduction

This Natural Environment Study (NES) report was prepared for the State Route 65 (SR 65) Capacity and Operational Improvements Project (project). The California Department of Transportation (Caltrans), in cooperation with the Placer County Transportation Planning Agency (PCTPA), Placer County, and the Cities of Roseville, Rocklin, and Lincoln, proposes to construct capacity and operational improvements on State Route (SR) 65 from north of Galleria Boulevard/Stanford Ranch Road to Lincoln Boulevard (6.3 miles, from post miles 6.5 to 12.8) in Placer County, California (Figure 1).

This project has been assigned the Project Development Processing Category 4A for widening the existing freeway without requiring a revised freeway agreement. The project is subject to both federal and state environmental review requirements. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and under the California Environmental Quality Act (CEQA). The proposed project is included in the Sacramento Area Council of Governments' (SACOG) *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) (SACOG 2016), which was adopted February 18, 2016

1.1 Project History

SR 65 begins at its junction with Interstate 80 (I-80) and is an important interregional route serving both local and regional traffic. SR 65 generally runs north/south and is a major connector for both automobile and truck traffic originating from the I-80 corridor in the Roseville/Rocklin area to the SR 70/99 corridor in the Marysville/Yuba City area. SR 65 is a vital economic link from residential areas to shopping and employment centers in southern Placer County. It is also an important route for transporting aggregate, lumber, and other commodities. SR 65 is characterized by significant growth in the industrial, commercial, and residential sectors. The southern Placer County region is one of the fastest growing areas in California, both in terms of housing and economic development.

SR 65 was constructed as a two-lane expressway in 1971. The Roseville Bypass from I-80 to Blue Oaks Boulevard was constructed in 1985. SR 65 from Blue Oaks Boulevard to Twelve Bridges Drive was widened to a four-lane facility in 1999. In 2009, the Caltrans Corridor System Management Plan for SR 65 identified major mobility challenges, including highway and roadway traffic congestion, lack of roadway capacity, and inadequate transit funding. A Supplemental Traffic Report was completed in June 2012 by Caltrans District 3 Office of Freeway Operations. The report indicated that the segment of SR 65 from Galleria Boulevard/Stanford Ranch Road to Lincoln Boulevard was experiencing operational problems

caused by high peak-period traffic volumes, vehicles hours of delay, average speeds, travel time, and other traffic performance measures that were deteriorating as a result of increasing growth in the surrounding areas. In 2013, a Project Study Report-Project Development Support for Capital Support was approved for adding one vehicle lane in each direction in the median of SR 65 from 0.5 mile north of Galleria Boulevard/Stanford Ranch Road to Lincoln Boulevard.

PCTPA has identified the proposed project as a high-priority regional network project in its 2036 Regional Transportation Plan. This project is included in the South Placer Regional Transportation Authority Regional Traffic Congestion and Air Quality Mitigation Fee Program.

1.2 Purpose and Need

1.2.1 Purpose

The primary purpose of the proposed project is to relieve existing mainline congestion by adding additional mainline capacity. Adding additional capacity would help planned and anticipated growth along the corridor and would help achieve the mobility and economic development goals of the PCTPA. The project will improve traffic operations and safety in this segment of the highway

1.2.2 Need

Recurring morning and evening peak-period demand exceeds the current design capacity along SR 65, creating traffic operations and safety issues. These issues result in high delays and wasted fuel, all of which will be exacerbated by traffic from future population and employment growth.

Projected growth along the SR 65 corridor in Roseville, Lincoln, Rocklin, and South Placer County will result in additional mainline congestion. SR 65 connects major regional routes and must operate efficiently in order to serve commuter traffic, goods movement, and regional traffic in south Placer County.

1.3 Project Alternatives

Two build alternatives and a no-build alternative are being considered for this project. The assessment of alternatives is based on 2040 design-year conditions. No decision on a preferred alternative will be made until all alternatives have been fully evaluated. Detailed designs for each alternative are depicted on Preliminary Geometrics Approval drawings prepared for the project (dated June 2, 2015). Figures 2a through 2i depict the extent of permanent and temporary impacts associated with both build alternatives.

1.3.1 No-Build Alternative

SR 65 within the project limits would maintain the existing lane configuration and no SR 65 mainline widening would be constructed. However, several related transportation capacity expansion projects, such as the I-80/SR 65 Interchange Improvements and Phase I of Placer Parkway projects, are planned in the study area under construction year (2020) and design year (2040) conditions and would be developed and constructed.

1.3.2 Build Alternatives

Both build alternatives described in this section would allow for inside highway widening as future projects along SR 65 from north of the Blue Oaks Boulevard interchange to Lincoln Boulevard. Both alternatives would accommodate the I-80/SR 65 Interchange Improvements Project and consider the carpool/high-occupancy vehicle (HOV) lane restrictions and weaving volumes from the carpool/HOV lanes proposed by the I-80/SR 65 interchange project.

1.3.2.1 Carpool Lane Alternative

This alternative adds a 12-foot carpool/HOV lane in the southbound direction of SR 65 in the median from the Blue Oaks Boulevard interchange to north of Galleria Boulevard/Stanford Ranch Road. The carpool/HOV lane would connect to the carpool/HOV lanes proposed as part of the I-80/SR 65 interchange project.

The separate I-80/SR 65 interchange project will add a third lane in each direction of SR 65 from I-80 to Pleasant Grove Boulevard. This SR 65 Capacity and Operational Improvements project alternative would also add one 12-foot general purpose lane through the Pleasant Grove Boulevard Interchange, to create a third lane on SR 65 in both directions from I-80 to Blue Oaks Boulevard. This alternative would also add an auxiliary lane in each direction of SR 65 from the Galleria Boulevard interchange to the Pleasant Grove Boulevard interchange, from the Blue Oaks Boulevard interchange to the Sunset Boulevard interchange, and from the Whitney Ranch Parkway interchange to the Twelve Bridges Drive interchange.

1.3.2.2 General Purpose Lane Alternative

This alternative would add a 12-foot general purpose lane in the southbound direction of SR 65 from the Blue Oaks Boulevard interchange to the Galleria Boulevard/Stanford Ranch Road off-ramp. The separate I-80/SR 65 interchange project will add a third lane in each direction of SR 65 from I-80 to Pleasant Grove Boulevard. For added capacity on southbound SR 65, as recommended by the Value Analysis (VA) study, this alternative also includes an additional general purpose lane from the Blue Oaks Boulevard slip on-ramp to the Pleasant Grove Boulevard loop on-ramp. On northbound SR 65, a 12-foot general purpose lane would be added through the Pleasant Grove Boulevard interchange. These improvements would result in a third lane in both directions of SR 65 from I-80 to Blue Oaks Boulevard.

This alternative would also add an auxiliary lane on northbound SR 65 from the Galleria Boulevard interchange to the Pleasant Grove Boulevard interchange; in both directions of SR 65 from the Blue Oaks Boulevard interchange to the Sunset Boulevard interchange; and from Whitney Ranch Parkway interchange to the Twelve Bridges Drive interchange.

1.4 Common Design Details of the Build Alternatives

The two build alternatives have common design details that include the following components.

1.4.1 Highway Widening

Median widening for additional general purpose or carpool lanes consists of removing existing inside shoulders and paving the median and giving it a standard cross slope. From Galleria Boulevard to Blue Oaks Boulevard, median widening includes removing the existing thrie-beam barrier, paving the entire median, and installing concrete barrier at the center divide. The existing drainage systems, which currently collect runoff within the median and carry it into the existing cross culverts, would be abandoned, removed, or modified.

Paving the median would generate new impervious area for runoff to sheet flow across the travel way to the outside shoulder. On areas with fill material, runoff would be collected by the toe ditch or gutter and carried to the existing channel or waterway. On cut material, runoff would be channelized by the asphalt concrete dike on the edge of the roadway shoulder and discharged to the ditch or toe gutter through an overside drain. At shoulder cut locations, the water spread would be checked to see if drainage inlets are needed to avoid water spread encroaching into the freeway edge of traveled way. The new roadway drainage system would connect the inlets and pipe down the ditch or toe gutter. Most of the existing ditch or toe gutter would remain to collect runoff, except for segments affected by outside widening for auxiliary lanes; those segments would be replaced or reconstructed. To minimize downstream effects, the project would maintain the existing drainage pattern, which ultimately drains toward two waterways—Pleasant Grove Creek and Orchard Creek.

The median widening along southbound SR 65 would provide standard 10-foot inside shoulders. Along northbound SR 65, the inside paving is limited to a hot mix asphalt overlay for roadway cross-slope correction. The inside shoulder on northbound SR 65 would retain its nonstandard width of 5 feet. Justification for the nonstandard inside shoulder width would be documented in the exceptions to Caltrans' mandatory design standards.

Auxiliary lanes would be constructed by widening the existing pavement to the outside, including the replacement of existing outside shoulder with standard cross slope and side slopes of 4:1 or flatter for the fill for most of the corridor, to meet the minimum requirements specified

in the Caltrans Highway Design Manual (California Department of Transportation 2015a). Segments along the corridor between Stanford Ranch Road and Pleasant Grove Boulevard and between the Whitney Ranch Parkway and Twelve Bridges Drive interchanges would require side slopes of 3:1 or steeper, with a 30-foot clear recovery zone to avoid encroaching beyond existing right-of-way and wetlands or overfilling existing drainage ways. These areas along the corridor would require exceptions to Caltrans advisory design standards.

A tie-back wall would be needed at the Pleasant Grove Boulevard interchange to accommodate the highway and ramp widening. A segment on southbound SR 65 between the Whitney Ranch Parkway and Twelve Bridges Drive interchanges would require a cut slope of 3:1 to avoid encroaching outside existing right-of-way; slopes at 3:1 or flatter are considered traversable but would need approval from Caltrans Landscape.

1.4.2 Pleasant Grove Creek Bridge Widening

Both the northbound and southbound bridges over Pleasant Grove Creek would be widened by approximately 12 feet each to the outside of the highway and approximately 17 feet each tot eh inside of the highway. The widened bridge structures would be similar structure types to the existing bridges, which are reinforced concrete slab bridges with piles. Sixteen pier columns (four at each of the four bents), plus four piles per abutment would be installed for each new bridge. New piers would be constructed using driven concrete piles. The pile driving rig would be mobilized and the piles would be driven prior to constructing the temporary falsework necessary to construct the concrete slab bridges. Impact pile driving within the creek bed is anticipated. At each bridge, pile driving would occur within a 1-week period. Sixteen Class 90 piles (40 feet long and 16 inches in diameter) and thirty-two Class 140 piles (40 feet long and 16 inches in diameter) would be installed. If sheet piles are needed to stabilize work areas, they would be installed with a vibratory pile driver.

At each bridge abutment, approximately 3,200 square feet (approximately 400 cubic yards [600 square feet above the ordinary high water mark (OHWM) and 2,600 square feet below]) of rock slope protection (RSP) would be installed to prevent scour and erosion at the abutments. The RSP would be made up of primarily 23-inch diameter rocks. Large gaps in the RSP would be filled with soil to reduce potential for creating habitat for predators.

In order to remove water from the construction work area prior to bridge widening, a temporary water diversion is proposed using K-rail, sandbags, or other appropriate means. An open channel would be maintained at all times to allow water and fish passage during construction. The temporary water diversion would be consistent with best management practices (BMPs) described in Caltrans' *Construction Site BMPs Manual* (California Department of Transportation

2003). In the unlikely event that pumping would be needed to dewater the construction site, pumps would be properly screened to prevent fish entrainment, and pumped water would be treated/disposed according to permit requirements.

Widening the bridges would take one construction season each. Construction would occur sequentially over two construction seasons, with the construction methodology described above repeated at each bridge. All in-water work, including installation of materials needed for dewatering, would be limited to the period between June 1 and October 15.

1.4.3 Cross Culvert Extension

Several culverts cross the SR 65 corridor. Most of the cross culverts would not be affected by the project because they are of adequate length. Three culverts are short and would need to be extended to accommodate the proposed auxiliary lanes along the corridor.

1.4.3.1 Orchard Creek Tributary 2-1 Culvert Extension

The culvert at Orchard Creek Tributary 2-1, located between Whitney Ranch Parkway and Twelve Bridges Drive, is a 7-foot by 5-foot at-grade reinforced concrete box. The box culvert would be extended 6 feet upstream and 6 feet downstream, and would maintain the slope of the existing culvert. The inlet and outlet of the culvert extensions would be at the existing grade of the channel. Construction would be conducted in one season and limited to the dry season when minimal to no water is flowing through the culvert. Excavation around the existing structure would occur first, followed by the casting of the box extension, then backfilling around the extended culvert. If water is present at the time of construction, dewatering or a water diversion would be implemented following Caltrans' *Standard Specifications* (California Department of Transportation 2015b).

1.4.3.2 Other Cross Culvert Extensions

Two additional culverts would need to be extended to accommodate the proposed auxiliary lanes along the corridor.

- Double 72" Reinforced Concrete Pipe between Galleria Boulevard and Pleasant Grove Boulevard
- Double 10'x5' Reinforced Concrete Box between Blue Oaks Boulevard and Sunset Boulevard

Widening of the inlet and outlet side of the culverts would take one construction season and would be limited to the period between June 1 and October 15. If water is present at the time of construction, dewatering or a temporary water diversion would be implemented following Caltrans' *Standard Specifications* (California Department of Transportation 2015b).

1.4.4 Ramp Metering

Ramp meter modifications would occur for the slip on-ramps to a 2+1 configuration (2 metered lanes plus 1 carpool preferential lane) and a 1+1 (1 metered lane plus 1 carpool preferential lane) for the loop on-ramps. The southbound Pleasant Grove Boulevard slip and loop on-ramps, Blue Oaks Boulevard slip and loop on-ramps, and Lincoln Boulevard slip on-ramp would be modified to include these ramp metering changes.

1.4.5 Utility Relocation

Overhead electric facilities run parallel along northbound SR 65 outside of State right-of-way. At Pleasant Grove Creek, the overhead line turns east-west and crosses over SR 65. The overhead electric hangs over both the Pleasant Grove Creek bridges that are proposed for widening. The proximity of the overhead line may conflict with bridge foundation activities during construction. The overhead line may therefore need to be temporarily relocated outside of the creek area to accommodate widening the Pleasant Grove Creek bridges. Any relocation of transmission towers or power lines would be conducted consistent with Public Utilities Commission General Order 131-D.

1.4.6 Staging/Laydown Areas

No specific staging/laydown areas have been identified. However, the contractor may utilize areas within the existing median and areas between the main line and interchange on- and off-ramps for staging or laydown. All staging and laydown would occur within the limits of disturbance depicted as the permanent and temporary impact areas shown on Figures 2a through 2k.

1.4.7 Construction Equipment and Techniques

Equipment that would be used for construction includes graders, excavators, drilling rigs, cranes, pavers, compactors, and various types of construction vehicles. Project design and construction would incorporate the following standard construction measures.

- A preliminary site-specific geotechnical report and initial site assessment will be prepared and will be incorporated into the project's final design. If contaminated soil or groundwater, or suspected contamination, is encountered during construction, work will be halted in the area and the type and extent of the contamination identified. A qualified professional, in consultation with Caltrans, will then develop an appropriate method to remediate the contamination.
- A site-specific storm water pollution prevention plan will be prepared for construction.
- Fugitive dust emissions during construction will be minimized by frequently applying water from water trucks. Fugitive dust emissions from wind erosion of inactive areas disturbed by construction activities will also be controlled by applying water. Chemical dust suppressants will not be used unless approved for direct application to surface waters.

- The contractor will be required to install temporary BMPs to control any runoff or erosion from the project site, into the surrounding waterways. These temporary BMPs will be installed prior to any construction operations and will be in place for the duration of the contract. Removing these BMPs will be the final operation, along with the project site cleanup.

1.4.8 Construction Access

Temporary construction easements may be required for the contractor to access construction areas. Access to construction areas would be from the interchanges at Pleasant Grove Boulevard, Blue Oaks Boulevard, Sunset Boulevard, Whitney Ranch Parkway, Twelve Bridges Drive, and Lincoln Boulevard. Two lanes in each direction on SR 65 are anticipated to remain open to traffic for the majority of project's construction.

Chapter 2 Study Methods

This chapter describes the regulatory requirements that are relevant to biological resources and the methods used to identify special-status species and their habitats, sensitive natural communities, and waters of the United States and State (including wetlands) in the biological study area (BSA).

2.1 Biological Study Area

The project footprint includes three sections of roadway along SR 65 from Galleria Boulevard to Industrial Avenue/Lincoln Boulevard. Areas of road realignment, new road construction, ramp reconstruction, and drainage improvements are collectively referred to as the limits of disturbance. The BSA (approximately 589 acres) comprises the limits of disturbance (including permanent and temporary impact areas) and habitats within 250 feet of these limits to account for potential indirect effects on nearby aquatic resources (Figures 2a through 2k).

2.2 Regulatory Requirements

This section summarizes the federal and state regulations that protect special-status species; waters of the United States (which also are considered waters of the State), including wetlands; and sensitive habitats. This section also discusses pertinent local general plan policies and ordinances related to the protection and preservation of biological resources.

2.2.1 Federal Regulations

2.2.1.1 Federal Endangered Species Act

The federal ESA of 1973, and subsequent amendments, provides regulations for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS) (with jurisdiction over plants, wildlife, and resident fish) and the National Marine Fisheries Service (NMFS) (with jurisdiction over anadromous fish and marine fish and mammals) oversee the ESA. Section 7 of the ESA mandates all federal agencies to consult with USFWS and NMFS if they determine that a proposed project may affect a listed species or its habitat. Section 7 requirements do not apply to nonfederal actions; however, at present, a federal action is expected for the proposed project because the use of federal funds from the Federal Highway Administration (FHWA) is proposed. Consequently, consultation under Section 7 for effects on federally listed species will be required. Under Section 7, the federal lead agency must obtain incidental take authorization or a letter of concurrence stating that the proposed project is not likely to adversely affect federally listed species.

Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. *Take* is defined as any action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 also prohibits the unlawful removal and possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed for or under petition for listing receive no protection under Section 9.

Federally listed species identified as having the potential to occur in the BSA for the proposed project include vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed as threatened; and vernal pool tadpole shrimp (*Lepidurus packardi*), federally listed as endangered. These species are discussed in Chapter 4, *Results: Biological Resources, Discussion of Impacts and Mitigatio*n.

2.2.1.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267) and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109-479), requires federal agencies to consult with NMFS on activities that may adversely affect EFH. The purpose of the MSA is to conserve and manage the fishery resources of the United States and to promote protection of EFH. EFH is the aquatic habitat necessary for fish to spawn, breed, feed, or grow to maturity that will allow a level of production needed to support a long-term, sustainable commercial fishery and contribute to a healthy ecosystem (Pacific Fishery Management Council 2014). Important components of EFH include substrate, water quality, water quantity, depth, velocity, channel gradient and stability, food, cover, habitat complexity, space, access and passage, and habitat connectivity. EFH is described for Pacific salmon fisheries (specifically Chinook salmon) in Chapter 4. The MSA requires the following.

- Federal agencies undertaking, permitting, or funding an activity that may adversely affect EFH are required to consult with NMFS.
- NMFS is required to provide conservation recommendations for any federal or state activity that may adversely affect EFH.
- Within 30 days of receiving conservation recommendations from NMFS, federal agencies must provide a detailed response in writing to NMFS regarding the conservation recommendations (the response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH, or reasons for not following the recommendations).

EFH for Pacific salmon fisheries (specifically, Chinook salmon) may be potentially affected by the proposed project, and is discussed in Chapter 4.

2.2.1.3 Executive Order 11990: Protection of Wetlands

EO 11990, signed May 24, 1977, directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. A project that encroaches on wetlands may not be undertaken unless the agency has determined that (1) there are no practicable alternatives to such construction; (2) the project includes all practicable measures to minimize harm to wetlands that would be affected by the project; and (3) the impact will be minor.

The proposed project would affect wetlands; therefore, federal agencies are required to consider this EO prior to issuing permits. Measures identified in Chapter 4 will avoid, minimize, or compensate for potential direct and indirect impacts on waters of the United States and waters of the State associated with project activities.

2.2.1.4 Executive Order 13112: Prevention and Control of Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO established the National Invasive Species Council (NISC), which is composed of federal agencies and departments and a supporting Invasive Species Advisory Committee (ISAC) composed of state, local, and private entities. In 2008, NISC released an updated national invasive species management plan (National Invasive Species Council 2008) that recommends objectives and measures to implement the EO and to prevent the introduction and spread of invasive species. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

The proposed project may introduce or spread invasive species into the BSA; therefore, federal agencies are required to consider this EO prior to issuing permits. Measures identified in Chapter 4 will avoid or minimize the introduction and spread of invasive species as a result of project activities.

2.2.1.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects migratory bird species from take. Under the MBTA, *take* is defined as to (or attempt to) pursue, hunt, shoot, capture, collect, or kill (50 Code of Federal Regulations [CFR] 10.12). The definition differentiates between intentional take (take that is the purpose of the activity in question) and unintentional take (take that results from, but is

not the purpose of, the activity in question). EO 13186, signed January 10, 2001, directs each federal agency taking actions that would, or likely would, negatively affect migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the MBTA; it does not constitute any legal authorization to take migratory birds. Migratory birds could nest in the BSA. The discussion of nesting migratory birds in Chapter 4 describes potential project impacts on migratory birds and measures to avoid or minimize impacts on those species.

2.2.1.6 Clean Water Act

The Clean Water Act (CWA) was passed by Congress in 1972 with a broad mandate "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The chief purpose of the CWA is to establish the basic structure for regulating discharges of pollutants into waters of the United States. The CWA authorizes the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations, and includes programs addressing both point-source and nonpoint-source pollution. *Point-source pollution* is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. *Nonpoint-source pollution* originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. Aquatic resources (i.e., drainage features and wetlands) are present in the BSA and may be regulated under CWA Section 404 (described in Section 2.1.7.3).

Section 402: Permits for Stormwater Discharge

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, the State Water Resources Control Board (State Water Board) is authorized by EPA to oversee the NPDES program through the RWQCBs.

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge stormwater and to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must include a site map, a description of proposed construction activities, and the best management practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants. Because the proposed project would disturb more than 1 acre of land, the project proponent will prepare a SWPPP and apply for an NPDES permit.

Section 404: Permits for Fill Placement in Waters of the United States (Including Wetlands)

Waters of the United States (including wetlands) are protected under Section 404 of the CWA. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE). *Waters of the United States* is defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria or are adjacent to any of these waters or their tributaries. *Wetlands* are defined under Section 404 as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria.

- They support hydrophytic vegetation (i.e., plants that grow in saturated soil).
- They have hydric soil types (i.e., soils that are wet or moist enough to develop anaerobic conditions).
- They have wetland hydrology.

As currently designed, roadway and bridge construction associated with the proposed project is expected to result in a discharge of fill material into potential waters of the United States; therefore, a Section 404 CWA permit likely will be required for the project. A wetland delineation has been completed for the project and is contained in Appendix C of this NES. The wetland delineation report was submitted to the USACE on May 24, 2016, to support a preliminary jurisdictional determination for the proposed project.

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for water quality certification from the state. Therefore, all projects with a federal component that may affect the quality of waters of the state (including projects that require federal approval, such as a CWA Section 404 permit) must comply with CWA Section 401.

In the State of California, CWA Section 401 is administered by the State Water Board through the RWQCBs. All areas qualifying as waters of the United States under Clean Water Act Section 404 also qualify as "waters of the State of California (waters of the state)" under the jurisdiction of CWA Section 401 and the State Water Board and RWQCBs; however, some areas considered as waters of the state do not qualify as "waters of the United States". State Water Board jurisdiction at streams, lakes, and ponds considered as OWUS extends beyond the ordinary high water mark (OHWM) to the top of bank or to the greatest lateral extent of riparian vegetation, whichever is greater. Isolated wetlands, non-navigable waters and intrastate waters may also qualify as waters of the state subject to State Water Board Jurisdiction under CWA Section 401.

As currently designed the proposed project is expected to result in a discharge of pollutants into waters of the United States; therefore a CWA Section 401 water quality certification from the Central Valley Regional Water Quality Control Board (CVRWQCB) will be required for the project. All riparian areas associated with streams in the BSA also qualified as jurisdictional wetlands and are mapped and described in the delineation of aquatic resources. There were no additional areas in the BSA that are waters of the State but not waters of the United States.

2.2.2 State Regulations

2.2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code [CFGC] Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species on the federal and state lists, compliance with ESA satisfies CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with CESA under CFGC Section 2080.1. For projects that would result in take of a species that is only state listed, the project proponent must apply for a take permit under Section 2081(b). Two state-listed species, Swainson's hawk (*Buteo swainsoni*) and California black rail (*Laterallus jamaicensis coturniculus*), have the potential to occur in the BSA. Chapter 4 describes potential project-related impacts and identifies avoidance and

minimization measures that will avoid direct impacts and minimize indirect impacts on these species.

2.2.2.2 California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA) of 1977 prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the CNPPA are not protected under CESA but rather under CEQA. Three special-status plant species known to occur in the project region are listed as rare under the CNPPA. None of these species were observed in the BSA during the field surveys. Chapters 3 and 4 discuss the potential for special-status plants to occur in the BSA.

2.2.2.3 California Fish and Game Code

The following sections of the CFGC apply to the proposed project.

Lake or Streambed Alteration (Section 1602)

CDFW regulates activities that would interfere with the natural flow of—or substantially alter the channel, bed, or bank of—a lake, river, or stream, including disturbance of riparian vegetation under CFGC Sections 1600–1616. CDFW requires a Lake or Streambed Alteration Agreement (LSAA) permit for these activities. Requirements to protect the integrity of biological resources and water quality often are conditions of LSAAs. CDFW may establish conditions that include avoiding or minimizing vegetation removal, using standard erosion control measures, limiting the use of heavy equipment, limiting work periods to avoid impacts on fisheries and wildlife resources, and restoring degraded sites or compensating for permanent habitat losses. All areas qualifying as waters of the United States under CWA Section 404 also qualify as waters of the State of California under the jurisdiction of CFGC Sections 1600-1616; however, some areas considered as waters of the State of California do not qualify as waters of the United States. CDFW jurisdiction at streams, lakes, and ponds considered as non-wetland waters of the United States extends beyond the OHWM to the top of bank or to the greatest lateral extent of riparian vegetation, whichever is greater.

Waters of the state (i.e., perennial and ephemeral streams) that would be regulated by CDFW are present in the BSA. The proposed project is expected to result in modification of the bed, bank, or channel of a stream and removal of riparian vegetation adjacent to a stream; therefore, an LSAA will be required.

Protection of Birds and Raptors (Sections 3503 and 3503.5)

Section 3503 of the CFGC prohibits killing of birds and destruction of bird nests. Section 3503.5 prohibits killing of raptor species and destruction of raptor nests. Typical violations include destruction of active bird and raptor nests as a result of tree removal, and failure of nesting attempts (loss of eggs or young) as a result of disturbance of nesting pairs caused by nearby human activity.

The proposed project has the potential to adversely affect birds and raptors protected under Sections 3503 and 3503.5 of the CFGC. The project proponent will avoid violating CFGC Sections 3503 and 3503.5 by implementing measures identified for nesting birds in Chapter 4.

Fully Protected Species (Sections 3511, 3513, 4700, and 5050)

CFGC Sections 3511, 3513, 4700, and 5050 pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit take of these species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or if a Natural Community Conservation Plan (NCCP) has been adopted. Specifically, Section 3513 prohibits any take or possession of birds designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations pursuant to the MBTA.

Two fully protected bird species, white-tailed kite (*Elanus leucurus*) and California black rail, have the potential to nest in the BSA and be affected by the proposed project. The project proponent would avoid take of white-tailed kite and California black rail by implementing measures identified for nesting birds in Chapter 4.

2.2.2.4 Porter-Cologne Water Quality Control Act

The California Water Code addresses the full range of water issues in the state and includes Division 7, known as the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code Sections 13000–16104). Section 13260 requires “any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the State to file a report of discharge (an application for waste discharge requirements [WDRs])” with the appropriate RWQCB. Under this act, each of the nine RWQCBs must prepare and periodically update Water Quality Control Basin Plans (Basin Plans). Each Basin Plan sets forth water quality standards for surface water and groundwater, as well as actions to control non-point and point sources of pollution. Projects that affect waters of the State must meet the WDRs of the RWQCB. Pursuant to CWA Section 401, an applicant for a Section 404 permit to conduct any activity that may result in discharge into navigable waters must provide a certification from the RWQCB that such discharge will comply with state water quality standards. As part of the

wetlands permitting process under Section 404, the project proponent will be required to apply for water quality certification from the Central Valley RWQCB.

Section 13050 of the Porter-Cologne Act authorizes the State Water Board and the relevant RWQCB to regulate biological pollutants. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA.

As currently designed, the proposed project is expected to result in a discharge of fill material into waters of the State; therefore, this discharge is also regulated under the State Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that Have Received State Water Quality Certification".

2.2.3 Local Regulations

2.2.3.1 City of Roseville General Plan

The following policies from the three components of the Open Space and Conservation Element of the City of Roseville's General Plan 2025 (City of Roseville 2015) are the most pertinent to the proposed project.

Open Space System

- Policy #9–Where feasible, entryways into Roseville shall incorporate the preservation of natural resource areas, such as oak woodland, riparian and grassland areas as a way of defining the City's boundaries and identity.

Vegetation and Wildlife

- Policy #1 – Incorporate existing trees into development projects, and where preservation is not feasible, continue to require mitigation for the loss of removed trees. Particular emphasis shall be placed on avoiding the removal of groupings or groves of trees.
- Policy #2 – Preserve and rehabilitate continuous riparian corridors and adjacent habitat along the City's creeks and waterways.
- Policy #11 – Habitat preservation and mitigation for woodlands, creeks, riparian and seasonal wetland areas should occur within the defined boundaries of the impacting projects where long-term resource viability is feasible and desirable.
- Policy #13 – Work with adjacent jurisdictions, regulatory agencies, and community organizations to explore opportunities for regional mitigation banking.

2.2.3.2 City of Roseville Open Space Preserve Overarching Management Plan

The City of Roseville Open Space Preserve Overarching Management Plan (OSPOMP) was adopted in August 2011 to standardize monitoring and management of the City's vernal pool and wetland preserves (ECORP Consulting 2011a). The plan provides a city-wide approach to open space management, maintenance, and monitoring. It applies to all open space managed by the City within the city limits.

The OSPOMP refers to both Open Space Preserve and General Open Space. *Open Space Preserve* is land that was required to be set aside as part of a regulatory permitting action. These lands are primarily vernal pool grassland or riparian corridors protected because of the presence of waters of the United States or endangered species. *General Open Space* areas are owned by the City and were set aside because of City policy or to meet Specific Plan restrictions. Section 10.14 of the OSPOMP states that activities prohibited in Preserve areas may occur only with USACE and USFWS approval, and that such approval may include a permit.

The BSA overlaps Highland Reserve North, Highland Reserve South, Commerce Center 65, and Parkside Industrial Center (Figures 2f – 2k), areas identified in the OSPOMP as City-owned open space preserves. The proposed project would be constructed within the existing Caltrans right-of-way (ROW) along SR 65 and all permanent and temporary impact areas are located outside of preserve boundaries. The proposed project is not expected to directly affect habitat within the preserve.

2.2.3.3 City of Rocklin General Plan

The Open Space, Conservation, and Recreation Element of the City of Rocklin's General Plan contains the following policies that pertain to biological resources in the BSA.

- OCR-1 – Encourage the protection of open space areas, natural resource areas, hilltops, and hillsides from encroachment or destruction through the use of conservation easements, natural resource buffers, building setbacks or other measures.
- OCR-2 – Recognize that balancing the need for economic, physical, and social development of the City may lead to some modification of existing open space and natural resource areas during the development process.
- OCR-6 – Look for opportunities to interconnect open space and natural areas to accommodate wildlife movement and sustain ecosystems and biodiversity.
- OCR-7 – Consult with other jurisdictions concerning open space planning programs, including the County's Placer Legacy program and other similar regional programs, to the extent feasible.

- OCR-8 – Encourage public utility companies and agencies to consult with the City prior to undertaking projects that may affect open space and natural resource areas to minimize impacts to these areas.

The proposed project will comply with the City of Rocklin's general plan policies by implementing avoidance and minimization measure described in Chapter 4 to minimize effects on sensitive biological resources and open space preserves located within and adjacent to the project limits (Figures 2f, 2g, and 2h). The proposed project would be constructed within the existing Caltrans right-of-way (ROW) along SR 65 and all permanent and temporary impact areas are located outside of City of Rocklin open space boundaries. The proposed project is not expected to directly affect habitat within the preserve areas. Potential indirect effects on nearby wetlands (including vernal pools) would be minimized through implementation of measures described in Chapter 4.

2.2.3.4 City of Lincoln General Plan

The Open Space and Conservation Element of the City of Lincoln's General Plan (City of Lincoln 2008) contains the following policies that pertain to biological resources in the BSA.

- Policy OSC-1.6 – Soil Erosion: The City shall require new development to implement measures that minimize soil erosion from wind and water related to construction. Measures may include, but not be limited to the following:
  - Grading requirements that limit grading to the amount necessary to provide stable areas for structural foundations, street right-of-way, parking facilities, or other intended uses; and/or
  - Construction techniques that utilize site preparation, grading, and best management practices that provide erosion and sediment control to prevent construction-related contaminants from leaving development sites and polluting waterways.
- Policy OSC-1.7 – Soil Erosion and Site Planning: The City shall require all development to minimize soil erosion by maintaining compatible land uses, suitable building designs and appropriate construction techniques. Contour grading, where appropriate, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.
- Policy OSC-5.1 – No Net Loss of Wetlands: The City will maintain a policy of no net loss of wetlands on a project-by-project basis, which may include an entire specific plan area. For the purpose of identifying such wetlands, the City will accept a map delineating wetlands which has been accepted by the Army Corps of Engineers pursuant to Section 404 of the Clean Water Act of 1972. The term "no net loss" may include mitigation implemented through participation in an off-site mitigation bank or similar mitigation mechanism acceptable to the City.
- Policy OSC-5.13 – Minimize Lighting Impacts: The City shall ensure that lighting in residential areas and along roadways shall be deigned to prevent artificial lighting from reflecting into adjacent natural or open space areas.

The proposed project will comply with the City of Lincoln's general plan policies by implementing avoidance and minimization measure described in Chapter 4 to minimize soil erosion and effects on wetlands located within and adjacent to the project limits (Figures 2a, 2b, 2c, and 2d). A large portion of the BSA mapped within the City of Lincoln overlaps with areas designated as open space preserves (Figures 2a, 2b, 2c, and 2d). The proposed project would be constructed within the existing Caltrans right-of-way (ROW) along SR 65 and all permanent and temporary impact areas are located outside of City of Lincoln open space boundaries. The proposed project is not expected to directly affect habitat within the preserve areas. Potential indirect effects on nearby wetlands (including vernal pools) would be minimized through implementation of measures described in Chapter 4.

2.3 Studies Required

Potential biological resource issues associated with the proposed project were identified through review of existing information and field surveys. It was determined that the following studies and surveys would be required to document natural resources in the BSA.

- General habitat evaluation to determine whether suitable habitat exists for special-status plant and animal species.
- Botanical field surveys to map land cover types, including natural communities, and survey for special-status plant species.
- Delineation of waters of the United States and waters of the State.

To prepare for the field surveys, biologists reviewed existing resource information related to the project to evaluate whether special-status species or other sensitive biological resources (e.g., waters of the United States) could occur in the BSA. As this document was prepared and revised, updated versions of the resources were obtained, reviewed, and incorporated. The following sources were reviewed.

- California Native Plant Society's (CNPS's) online Inventory of Rare and Endangered Plants of California (2016).
- California Natural Diversity Database (CNDDB) records search of the Roseville and eight surrounding U.S. Geological Survey (USGS) 7.5-minute quadrangles (California Department of Fish and Wildlife 2016) (Appendix B).
- Official list of threatened and endangered species that may occur in the proposed project location or be affected by the proposed project (U.S. Fish and Wildlife Service 2016) (Appendix B).
- Lists of plants identified as noxious weeds or invasive plants by the U.S. Department of Agriculture (USDA) (2015), California Department of Food and Agriculture (CDFA) (2015) and the California Invasive Plant Council (Cal-IPC) (2015).

- The soil map unit descriptions for the BSA (Natural Resources Conservation Service 2013).
- Recent and historical aerial imagery of the BSA and surrounding area.

This information was used to develop lists of special-status species and other sensitive biological resources that could be present in the project region. Species from the lists were considered if they were known to occur in the project region (i.e., within a 10-mile radius of the BSA) or if potential habitat for the species was known to be present in the BSA.

2.4 Personnel and Survey Dates

ICF International (ICF) biologists conducted biological surveys in the BSA in 2014 and 2015 (Table 2-1). Methods and personnel involved in documenting wetlands and other waters of the United States and conducting botanical, wildlife, and shaded riverine aquatic (SRA) cover habitat surveys are described below.

Table 2-1. Biological Survey Personnel and Dates

Type of Survey	Survey Date	Surveyors
Botanical surveys	September 3, 4, and 5, 2014 May 1 and 5, 2015	Margaret Widdowson, ICF Botanist/Wetland Ecologist, 17 years' experience John Holson, ICF botanist, 10 years' experience Cristian Singer, ICF botanist, 12 years' experience
Delineation of waters of the United States and waters of the State	September 3, 4, and 5, 2014	Margaret Widdowson, ICF Botanist/Wetland Ecologist, 17 years' experience John Holson, ICF Botanist/Wetland Ecologist, 10 years' experience
Wildlife habitat assessment	February 15, 2015	Angela Alcala, ICF Wildlife Biologist, 16 years' experience

2.4.1 Waters of the United States, Including Wetlands

ICF botanists/wetland specialists Margaret Widdowson and John Holson conducted delineation field work in the BSA on September 3, 4, and 5, 2014. The delineation was conducted using the routine onsite determination method described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the supplemental procedures and wetland indicators provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008a). Other waters were delineated using methods described in the 2008 Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States (U.S. Army Corps of Engineers 2008b). Previous delineation work in the BSA—consisting of the preliminary delineation data for the I-80/SR 65 Interchange Improvements project [U.S. Army Corps of Engineers, Sacramento District File Number: SPK-2015-00252]—was reviewed before conducting the fieldwork. Wetland and other waters features from these surveys were transferred onto true color

orthorectified aerial photographs and field-verified. The wetland delineation report is included as Appendix C.

2.4.2 Botanical Resources

ICF botanists Ms. Widdowson and Mr. Holson conducted botanical surveys in the BSA on September 3, 4, and 5, 2014, and Mr. Holson, and Cristian Singer conducted botanical surveys in the BSA on May 1 (with Ms. Widdowson) and 5, 2015. The surveys coincided with the identification periods of the eleven special-status plants determined to have the potential to occur in the BSA. The surveys followed CDFW guidelines (California Department of Fish and Game 2009), and were floristic in nature. The botanists traversed the entire BSA, sampling vegetation along meandering transects. The transects were intuitively controlled; that is, the botanists determined the location and direction of transects by visually assessing the terrain for microhabitats with higher potential for the occurrence of special-status species. The botanists identified all plants encountered along the transects to the extent possible; at a minimum, every taxon was identified to the level necessary to determine whether it was a special-status species. The botanists accumulated a single running checklist over the survey period (Appendix D). Natural communities in the BSA also were identified and mapped during the botanical field surveys. The results of these surveys are presented in Chapters 3 and 4.

2.4.3 Wildlife Resources

ICF biologist Angela Alcala conducted habitat-based field assessments for wildlife in the BSA on February 15, 2015. During the assessment, Ms. Alcala recorded the general topography of the BSA, the vegetation present, and the amount of human activity/disturbance at the site; she also recorded wildlife (or wildlife signs) observed during the visit. A list of wildlife species observed in the BSA is provided in Appendix D.

The assessment to evaluate habitat for special-status fish in the vicinity of the BSA was based on information collected by Ms. Alcala during the wildlife habitat field survey, the examination of topographic maps and aerial photographs, and the professional judgement of ICF fish biologist Jeff Kozlowski.

2.5 Agency Coordination and Professional Contacts

The following agency coordination has been conducted for the project.

2.5.1 U.S. Fish and Wildlife Service

On October 5, 2016, USFWS issued an official list of threatened and endangered species that may occur in the study area or be affected by the proposed project (U.S. Fish and Wildlife Service 2016) (Appendix B).

2.5.2 U.S. Army Corps of Engineers

On May 24, 2016, Caltrans submitted the wetland delineation to the USACE requesting a preliminary jurisdictional determination (PJD). On July 5, 2016, the USACE responded to Caltrans with a request for additional data. The PJD for the delineation is ongoing as of the date of this report.

2.5.3 City of Rocklin

On October 29, 2015, ICF biologist Angela Alcala called the City of Rocklin Planning Department to find out if they had any mapping data for open space preserve lands within city limits. Ms. Alcala was directed to Josh Lowe, a GIS analyst for the city. Ms. Alcala left a voicemail for Mr. Lowe but no response has been received to date.

On February 5, 2016, Ms. Alcala called the City of Rocklin's Environmental Service Manager David Mohlenbrok to request information on the city's open space preserves. Mr. Mohlenbrok emailed copies of the Corps 404 permit, Section 7 authorization from USFWS, and a recent 2014-2015 monitoring report for Sunset West, a development that included several mitigation sites between Sunset Boulevard and Blue Oaks Boulevard. These documents contained maps depicting preserve areas.

2.5.4 City of Lincoln

On October 29, 2015, ICF biologist Angela Alcala called the City of Lincoln's Development Services Department to find out if they had any mapping data for open space preserve lands within city limits. Ms. Alcala was directed to Araceli Cazarez in the Parks Department and Ms. Cazarez emailed Ms. Alcala a map depicting land use and open space designations for the City of Lincoln.

One February 5, 2016, Ms. Alcala called the City of Lincoln's Maintenance Supervisor Scott Boynton to request information on the city's open space preserves. Ms. Alcala left a voicemail for Mr. Boynton. Ms. Alcala called and left another message on April 21, 2016. Mr. Boynton responded on the same day and stated that he had some documents that might be helpful in determining which preserves overlap with the study area. He offered to provide the documents for review by ICF. Ms. Alcala met with Mr. Boynton on May 2, 2016, to review the documents.

2.6 Limitations That May Influence Results

Federally listed vernal pool branchiopod surveys were not conducted to determine the status of vernal pool fairy shrimp and vernal pool tadpole shrimp within the BSA. For purposes of determining impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp, this NES assumes that the species are present within suitable habitat in the BSA.

Several parcels in the BSA could not be accessed to conduct field surveys, including one parcel where special-status plants have been recorded. The ongoing drought conditions may have limited the development of plants in May 2015. Although the footprints of vernal pools and seasonal wetlands were evident, it appeared that plants were smaller and the vegetation sparser than in a typical year.

The assumed presence of, and the impact assessment on, special-status fish species depends largely on previously collected data; literature reviews; and general species distribution, habitat requirements, and life history accounts. No fish surveys were conducted, and this NES assumes that two special-status fish species (California Central Valley [CCV] steelhead and Central Valley [CV] fall-run Chinook salmon) have the potential to occur in the Orchard Creek and Pleasant Grove Creek portions of the BSA.

Acoustics surveys for bats were not conducted to determine use of the BSA by bats. The potential for structure or tree-roosting bats to be present in the BSA was determined based on a habitat assessment.

Chapter 3 Results: Environmental Setting

This chapter defines the biological study area (BSA) for the proposed project and describes the existing physical and biological conditions within the BSA.

3.1 Existing Physical and Biological Conditions

3.1.1 Physical Conditions

The BSA is located in the transition zone between the Sacramento Valley and northern Sierra Nevada Foothill subregions of the California Floristic Province (Baldwin et al. 2012: 42, 43). The topography in the BSA varies from relatively level to moderate slopes, and elevations range from approximately 115 to 235 feet above mean sea level (AMSL). Within the BSA several open space areas and habitat preserves border the existing SR 65 ROW. These areas are depicted on Figures 2a through 2k.

According to soil data from the Natural Resources Conservation Service Web Soil Survey, the BSA contains 10 mapped soil types (Natural Resource Conservation Service 2015). In many places, the soil profile has been disturbed by the construction of existing roads and grading for development. Information on soils mapped within the BSA is provided in more detail in the wetland delineation report (Appendix C).

The BSA is within the Lower Sacramento watershed hydrologic unit (hydrologic unit code [HUC] 18020109) (U.S. Environmental Protection Agency 2015). The primary streams in the delineation area are Pleasant Grove Creek and Orchard Creek; these streams ultimately drain into the Sacramento River, a traditional navigable water. The streams and associated tributaries qualify as other waters of the United States (which also are considered waters of the State). The specific characteristics of waters of the United States, including wetlands, in the BSA are further described in Appendix C.

3.1.2 Biological Conditions

The natural communities in the BSA are interspersed with roadways, commercial, and industrial areas. The term *land cover types* is used in this NES to refer to natural communities and developed or disturbed areas. Land cover types mapped during field surveys are described below and shown in Figures 2a through 2k. Representative photographs of land cover types within the BSA are provided in Appendix E.

The BSA supports both common natural communities and natural communities of special concern. Common natural communities are habitats with low species diversity that are

widespread, re-establish naturally after disturbance, or support primarily nonnative species. These communities generally are not protected by agencies unless the specific site is habitat for or supports special-status species (e.g., raptor foraging or nesting habitat, upland habitat in a wetland watershed). The only common natural community in the BSA is annual grassland.

Natural communities of special concern are habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status. Local, state, and federal agencies consider these habitats important. The California Natural Diversity Database (CNDDB) contains a current list of rare natural communities throughout the state. USFWS considers certain habitats, such as wetlands and riparian communities, important to wildlife; and USACE and EPA consider wetland habitats important for water quality and wildlife. The habitats in the BSA that meet the criteria for natural communities of special concern are riparian scrub wetland, emergent wetland, seasonal wetland, and vernal pool.

The distribution, representative vegetation, and typical wildlife species found in land cover types within the BSA are described in the following sections. Additional information about aquatic features is provided in Appendix C. Lists of plant and wildlife species observed in the BSA are provided in Appendix D.

3.1.2.1 Developed Areas

Developed portions of the BSA consist mostly of commercial and industrial areas, and roadways that are largely unvegetated. The vegetation in developed areas typically is composed of ornamental species planted for decorative or landscaping purposes, including lavenders (*Lavandula* spp.), coast redwood (*Sequoia sempervirens*), Japanese maple (*Acer palmatum*), Callery pear (*Pyrus calleryana*), and pines (*Pinus* spp.).

3.1.2.2 Disturbed/Graded Areas

Disturbed/graded portions of the BSA include areas adjacent to roadways and within cloverleaves or loops that were graded during construction of the roadways or adjacent development. This category also includes areas graded in preparation for development or construction (e.g., staging areas). The vegetative composition of these areas typically consists of nonnative species, particularly annual grasses and weedy forbs, with scattered trees and shrubs. The density of vegetation is variable and ranges from relatively high in areas along roadways to more sparse in areas that recently have been graded. Disturbed and graded areas along southbound SR 65 are depicted in Photos 1 and 2 in Appendix E.

3.1.2.3 Annual Grassland

Most of the annual grassland in the BSA occurs north of Blue Oaks Boulevard. This vegetation type is dominated by nonnative grasses and forbs. Common grass species are Italian ryegrass

(*Festuca perennis*), medusahead (*Elymus caput-medusae*), slender wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and foxtail barley (*Hordeum murinum* ssp. *leporinum*). Typical forb species are yellow star-thistle (*Centaurea solstitialis*), rose clover (*Trifolium hirtum*), hairy vetch (*Vicia villosa*), and broadleaf filaree (*Erodium botrys*). Representative photograph of annual grassland in the BSA is provided as Photo 2 in Appendix E.

3.1.2.4 Perennial Stream

Within the BSA, streams were classified as perennial if they flow year-round during a typical year. There are nine segments of perennial streams present within the BSA, including Orchard Creek and several of its tributaries in the northern portion of the BSA, and Pleasant Grove Creek and some associated tributaries in the southern portion of the BSA. Before the surrounding region was developed, most of these streams would have been seasonal, but now they are supported by significant amounts of irrigation runoff from nearby residential and industrial/commercial developments located within their watersheds. Where abutting wetlands were absent, the boundaries of streams were mapped at the OHWM, which was identified in the field by observed indicators as described in the delineation of aquatic resources. Most of these perennial stream features are characterized by a shallow gradient with stands of wetland vegetation along their margins that were mapped as abutting emergent wetlands (described in Section 3.1.3.8); the open water portions that lacked aquatic vegetation were mapped as perennial stream. Representative photographs of Orchard Creek and Pleasant Grove Creek in the BSA are provided as Photos 3, 4, and 11 in Appendix E.

3.1.2.5 Ephemeral Stream

Within the BSA, streams were classified as ephemeral if they had no flowing water during the September 2014 fieldwork; were narrow with small watersheds; and showed OHWM indicators, including scour along at least 50% of the channel length, a distinct bed, defined bank, and shelving. In total, seven segments of ephemeral streams are present in the BSA (Figures 2d, 2h, 2i, and 2k).

3.1.2.6 Ditch

Numerous drainage ditches and concrete-line ditches are present throughout the BSA. Most of these ditches were constructed to convey runoff from SR 65 or from adjacent developed areas. Ditches were mapped if they lacked hydrophytic vegetation and had a distinct bed and bank. Ditches with hydrophytic vegetation were mapped as emergent wetlands or seasonal wetlands (Sections 3.1.3.8 and 3.1.3.9, respectively). A representative photograph of a ditch in the BSA is provided as Photo 8 in Appendix E.

3.1.2.7 Riparian Scrub Wetland

Within the BSA, riparian scrub wetlands are present throughout the BSA, typically as small patches interspersed with emergent wetland and the open water portions of channels mapped as perennial stream. Many of the riparian scrub wetlands in the BSA are supported through the dry season by irrigation or landscape runoff. The dominant shrub species within this community is sandbar willow (*Salix exigua*), with some arroyo willow (*S. lasiolepis*).

3.1.2.8 Emergent Wetland

Within the BSA, emergent wetlands are located along perennial or ephemeral streams that are supported throughout the dry season by irrigation and landscape runoff. Surface water or a high water table was present in most of these features during September 2014 fieldwork. Typical species were wetland plants such as cattails (*Typha latifolia*) and hard bulrush (S*choenoplectus acutus*). Representative photographs of emergent wetland in the BSA are provided as Photos 3 and 4 in Appendix E.

3.1.2.9 Seasonal Wetland

Numerous seasonal wetlands were mapped throughout the BSA. Seasonal wetlands in the BSA support wetland hydrology but do not have a permanent water source. Some seasonal wetlands are similar to vernal pools in that they also form in small, shallow depressional areas that receive groundwater and surface runoff during the rainy season and dry completely during the summer months. These features supported hydrophytic vegetation but were distinguished from vernal pools during fieldwork by the lack of typical vernal pool plant species. Within the BSA, seasonal wetlands also occur in swales and small linear streams that lack a defined bed and bank, as well as in some drainage swales that receive landscape irrigation runoff. Seasonal wetlands can be transitional between emergent wetlands and upland grassland along major streams such as Orchard Creek. Typical hydrophytic plants observed in seasonal wetlands in the BSA were perennial ryegrass, common spike rush (*Eleocharis macrostachya*), Mediterranean barley, and curly dock (*Rumex crispus*). The predominant indicators of wetland hydrology observed were surface soil cracks and the presence of a biotic crust in the form of algal matting. A representative photograph of a seasonal wetland in the BSA is provided as Photo 9 in Appendix E.

3.1.2.10 Vernal Pool

Within the BSA, vernal pools were identified by shallow closed depressional features that showed positive indicators of all three wetland factors, and were distinguished from seasonal wetlands by the presence of typical vernal pool annual plants such as coyote thistle (*Eryngium castrense*), Fremont's goldfields (*Lasthenia fremontii*), and slender popcornflower (*Plagiobothrys stipitata* var. *micrantha*). The predominant indicator of wetland hydrology

observed was the presence of a biotic crust in the form of algal matting. At the time of the September 2014 field work, many of the vernal pools were dominated by summer upland annuals such as narrow tarplant (*Holocarpha virgata*), vinegar weed (*Trichostema lanceolatum*), dove weed (*Croton setiger*), and spikeweed (*Centromadia fitchii*).

It was clear during the fieldwork that the very dry conditions of the 2013–2014 rainy season had greatly limited the development of seasonal hydrophytic vegetation; however, despite the dry conditions, the footprint of each vernal pool in the field was typically clear and the boundaries were distinct.

3.1.3 Common Animal Species

3.1.3.1 Wildlife

The BSA provides habitat for an assemblage of wildlife species typical of valley grassland habitats. Numerous mammal species or evidence of use (i.e., scat, burrows) were observed in or near the BSA during the 2015 field survey, including black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), California ground squirrel (*Spermophilus beecheyi*), and Botta's pocket gopher (*Thomomys bottae*). Numerous western fence lizards (*Sceloporus occidentalis*) were observed throughout the BSA and one burrowing owl (*Athene cunicularia*) was observed adjacent to the BSA. Wetland and stream habitats in the BSA also provide habitat for common amphibians and reptiles such as western toad (*Anaxyrus boreas*), Pacific tree frog (*Pseudacris regilla*), and western terrestrial garter snake (*Thamnophis elegans*). Common bird species observed throughout the BSA included red-winged blackbird (*Agelaius phoeniceus*), cliff swallow (*Petrochelidon pyrrhonota*), brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Carduelis psaltria*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), and turkey vulture (*Cathartes aura*).

3.1.3.2 Fish

Orchard Creek and Pleasant Grove Creek in the BSA fall within the Sacramento-San Joaquin Province (Central Valley Subprovince), one of six aquatic zoogeographic provinces in California, as defined by Moyle (2002). The Sacramento-San Joaquin Province is drained by the Sacramento and San Joaquin Rivers. Generally, four native fish assemblages can be recognized in Central Valley streams: rainbow trout assemblage, California roach assemblage, pikeminnow-hardhead-sucker assemblage, and deep-bodied fish assemblage (Moyle 2002). Based on their geographic location, Orchard Creek and Pleasant Grove Creek in the BSA lie in the zone characterized by the deep-bodied fish assemblage.

Fish species that could occur in this zone include Sacramento sucker (*Catostomus occidentalis*), California roach (*Lavinia symmetricus*), hardhead (*Mylopharodon conocephalus*), Sacramento pikeminnow (*Ptychocheilus grandis*), speckled dace (*Rhinichthys osculus*), riffle sculpin (*Cottus gulosus*), steelhead and resident rainbow trout (*Oncorhynchus mykiss*), and Chinook salmon (*O. tshawytscha*) (Moyle 2002). Non-native sunfish (*Lepomis* spp.), blackbass (*Micropterus* spp.), and Western mosquitofish (*Gambusia affinis*) also may occur in this zone.

Information on the current distribution and abundance of fish species in Orchard Creek and Pleasant Grove Creek, and in the BSA in particular, is lacking. Based on a literature review and field investigation of Western Placer County streams, Baily (2003) described Pleasant Grove Creek as having "numerous diversions, a multitude of beaver dams, and man-made small earthen dams upstream of Highway 65" and concluded that the potential was low for Pleasant Grove Creek to be an anadromous fish stream. No information on Orchard Creek is provided in Baily (2003).

3.1.4 Wildlife Migration Corridors

The BSA consists predominantly of annual grassland and disturbed and developed areas along SR 65 and associated on-ramps and off-ramps. These existing roadways generally do not provide wildlife migration corridors; however, resident wildlife species may traverse the BSA along streams that culvert under or parallel these roadways. These features could be used as movement corridors to access larger open space areas outside the BSA. Therefore, streams and associated uplands in the BSA provide important wildlife dispersal and movement corridors between established open space preserves. Existing culverts at streams crossed by the proposed project may be extended to accommodate new road construction but will not be substantially altered in a way that would impede wildlife movement.

3.1.5 Invasive Plant Species

Invasive plant species include species designated as federal noxious weeds by the U.S. Department of Agriculture (USDA), species listed by the California Department of Food and Agriculture (CDFA), and invasive plants identified by the California Invasive Plants Council (Cal-IPC). Invasive plants displace native species, change ecosystem processes, alter plant community structure, and lower wildlife habitat quality (California Invasive Plant Council 2006:1). Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plants and their propagules. Table 3-1 lists the invasive plant species identified by CDFA and Cal-IPC that are known to occur in the BSA (California Department of Food and Agriculture 2010; California Invasive Plant Council 2015). No plant species designated as federal noxious weeds have been identified in the BSA. Most of the invasive plant species occur in annual grassland, along roadways, and in disturbed/graded areas.

Table 3-1. Invasive Plant Species Identified in the Biological Study Area

Species	CDFA	Cal-IPC
Blow grass (*Lachnagrostis filiformis*, *Agrostis avenacea*)	–	Limited
slender wild oat (*Avena barbata*)	–	Moderate
wild oat (*Avena fatua*)	–	Moderate
black mustard (*Brassica nigra*)	–	Moderate
ripgut brome (*Bromus diandrus*)	–	Moderate
soft chess (*Bromus hordeaceus*)	–	Limited
red brome (*Bromus madritensis* ssp. *rubens*)	–	High
cheatgrass (*Bromus tectorum*)	–	High
Italian thistle (*Carduus pycnocephalus*)	C	Moderate
yellow star-thistle (*Centaurea solstitialis*)	C	High
bull thistle (*Cirsium vulgare*)	C	Moderate
field bindweed (*Convolvulus arvensis*)	C	–
hedgehog dogtail grass (*Cynosurus echinatus*)	–	Moderate
stinkwort (*Dittrichia graveolens*)	–	Moderate, Alert
Medusahead (*Elymus caput-medusae*)	C	High
red-stemmed filaree (*Erodium cicutarium*)	–	Limited
rattail fescue (*Festuca myuros*)	–	Moderate
Italian ryegrass (*Festuca perennis*)	–	Moderate
cutleaf geranium (*Geranium dissectum*)	–	Limited
waxy mannagrass (*Glyceria declinata*)	–	Limited
field mustard (*Hirschfeldia incana*)	–	Moderate
bristly ox-tongue (*Helminthotheca echioides*)	–	Limited
Mediterranean barley (*Hordeum marinum* var. *gussoneanum*)	–	Moderate
foxtail barley (*Hordeum murinum* ssp. *leporinum*)	–	Moderate
Klamathweed (*Hypericum perforatum*)	C	Moderate
smooth cat's ear (*Hypochaeris glabra*)	–	Limited
perennial pepperweed (*Lepidium latifolium*)	B	High
hyssop loosestrife (*Lythrum hyssopifolia*)	–	Moderate
white horehound (*Marrubium vulgare*)	–	Limited
bur-clover (*Medicago polymorpha*)	–	Limited
pennyroyal (*Mentha pulegium*)	–	Moderate
yellow glandweed (*Parentucellia viscosa*)	–	Limited
rabbitsfoot grass (*Polypogon monspeliensis*)	–	Limited
wild radish (*Raphanus sativus*)	–	Limited
Himalayan blackberry (*Rubus armeniacus*)	–	High
curly dock (*Rumex crispus*)	–	Limited
Russian thistle, tumbleweed (*Salsola kali*)	–	Limited
milk thistle (*Silybum marianum*)	–	Limited
Chinese tallowtree (*Triadica sebiferum*; formerly *Sapium sebiferum*)	–	Moderate
rose clover (*Trifolium hirtum*)	–	Moderate

Species	CDFA	Cal-IPC
woolly mullein (*Verbascum thapsus*)	–	Limited

Note: The CDFA and Cal-IPC lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances.

The **CDFA categories** indicated in the table are defined as follows:

C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the county agricultural commissioner.

The **Cal-IPC categories** indicated in the table are defined as follows:

High: Species with severe ecological impacts, high rates of dispersal and establishment, and usually widely distributed.

Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, establishment dependent on disturbance, and limited to widespread distribution.

Limited: Species with minor ecological impacts, low to moderate rates of invasion, limited distribution, and locally persistent and problematic.

CDFA = California Department of Food and Agriculture

Cal-IPC = California Invasive Plant Council

3.2 Regional Species

Regional species and habitats of concern were identified using the CNDDB records search (California Department of Fish and Wildlife 2016) (Appendix B), the California Native Plant Society's (CNPS's) online *Inventory of Rare and Endangered Plants of California* (2016), the species list obtained from the USFWS (2016) website (Appendix B), and species distribution and habitat requirements data. Based on a review of this information, 13 special-status plant species and 26 special-status wildlife species, including 6 species of fish, (Tables 3-2 and 3-3) were identified as having the potential to occur or are known to occur in the geographic region (i.e., within 10 miles of the BSA).

For the purpose of this NES, *special-status species* are plants, wildlife, and fish that are legally protected under the ESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants, animals, and fish are those species in any of the categories listed below.

- Species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (79 FR No. 234, 72449-72497, December 5, 2014).
- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA) (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).

- Plants that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380[b], [c], and [d]); plants that may meet this definition include:
    - Plants ranked as "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1B and 2B, California Department of Fish and Wildlife 2016; California Native Plant Society 2016); and
    - Plants that may warrant consideration on the basis of local significance or recent biological information (State CEQA Guidelines Section 15380[d]), which may include CRPR 3 (plants about which more information is needed to determine their status) and CRPR 4 (plants of limited distribution)
    - Some plants included on the CNDDB *Special Vascular Plants, Bryophytes, and Lichens List* (current list [April 2016] available: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).
- Species that are considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or unique in a local context such as within a county or region (CEQA §15125 [c]) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).
- Animal species of special concern to CDFW.
- Animals fully protected in California (California Fish and Game Code Section 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

3.2.1 Special-Status Plant Species

Based on searches of the CNDDB, the CNPS rare plant inventory, and USFWS's website, 13 special-status plant species were identified as occurring in the vicinity of the BSA (Table 3-2). The natural communities in the BSA contain potential habitat for 11 of these 13 species. Of the remaining two species, one has soil type requirements (i.e., alkaline soils) that are not present in the BSA and one occurs at elevations higher than the elevation of the BSA. The relatively high level of historical and ongoing disturbance that is present in most of the BSA reduces the quality of potential habitat for special-status plant species. According to the CNDDB, two special-status vernal pool plant species have been recorded previously in the BSA: dwarf downingia (*Downingia pusilla*) and legenere (*Legenere limosa*) (California Department of Fish and Wildlife 2016). There are two occurrences of dwarf downingia: CNDDB Element Occurrence (EO) #60 is mapped at the north end of the BSA between SR 65 and Industrial Avenue and was last seen in 1990. However, access was not available to conduct surveys in this area and this occurrence could not be verified in 2015. Based on examination of recent aerial imagery, the vernal pool landscape appears to persist and this occurrence is therefore presumed to be extant. The second occurrence (EO #37) was located south of Blue Oaks Boulevard and has been extirpated by grading and development. Legenere (EO #11) is mapped partially within the BSA in tributaries of Pleasant Grove Creek west of SR 65 and south of Placer Boulevard; however the northern portion of this occurrence has been developed and no suitable habitat remains within the BSA

portion of the occurrence. No special-status plants were observed during 2014 and 2015 botanical surveys, which coincided with the reported identification periods of all 11 potentially occurring special-status plant species. However, access was not available to survey several parcels located on the west side of SR 65 from Industrial Avenue south to the Whitney Ranch Parkway Interchange. Based on examination of recent aerial imagery, these parcels support shallow vernal pools and swales, including the area where dwarf downingia has been recorded. These pools are potential habitat for several special-status plants that are associated with vernal pools (Boggs Lake hedge-hyssop, Ahart's dwarf rush, Red Bluff dwarf rush, legenere, and pincushion navarretia, in addition to dwarf downingia), and it is presumed that these species could be present in the BSA. This NES also concludes that one special-status plant species, dwarf downingia, is presumed to occur in the BSA as mapped in CNDDB.

3.2.2 Special-Status Wildlife Species

Based on a review of the CNDDB search results; the USFWS list of endangered, threatened, and proposed species within the project region; and species distribution and habitat data, 26 special-status wildlife species were determined to have the potential to occur in the project region (Table 3-3). After completion of the field survey, the biologists determined that seven of the 20 terrestrial wildlife species would not occur in the BSA because the area lacks suitable habitat or is outside the species' known range. An explanation for the absence of each of these species from the BSA is provided in Table 3-3. Suitable habitat is present in the BSA for the remaining 13 terrestrial wildlife species listed below. These species are discussed in Chapter 4.

- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- Western spadefoot toad (*Spea hammondii*)
- Northern western pond turtle (*Emys marmorata*)
- Burrowing owl (Athene cunicularia hypugaea)
- Swainson's hawk (*Buteo swainsoni*)
- White-tailed kite (*Elanus leucurus*)
- Northern harrier (*Circus cyaneus*)
- Tricolored blackbird (*Agelaius tricolor*)
- California black rail (Laterallus jamaicensis coturniculus)
- Purple martin (*Progne subis*)
- Pallid bat (Antrozous pallidus)
- Silver-haired bat (Lasionycteris noctivagans)

3.2.3 Special-Status Fish Species

Based on the CNDDB search results and the USFWS list of endangered, threatened, and proposed species within the project region, and general information on species' distribution in the Central Valley, three special-status fish species were identified as having the potential to occur in the project region (Moyle 2002; California Department of Fish and Wildlife 2016; U.S. Fish and Wildlife Service 2016). Of the three special-status fish species listed in Table 3-4, one (delta smelt [*Hypomesus transpacificus*]) does not occur in the BSA because the BSA is outside the species' historical and existing range. An explanation for the absence of this species from the BSA is provided in Table 3-4. The remaining two special-status fish species—California Central Valley (CCV) steelhead and Central Valley (CV) fall-run Chinook salmon—have the potential to occur in the BSA and could be affected by the proposed project.

Orchard Creek and Pleasant Grove Creek are not designated as critical habitat for CCV steelhead; however, these creeks are considered EFH for Pacific salmon (i.e., Chinook salmon), based on their inclusion in the U.S. Geological Survey 4th field hydrologic units designated as EFH by the Pacific Fishery Management Council (2014).

3.2.4 Other Protected Species

3.2.4.1 Migratory Birds and Raptors

Non-special-status migratory birds and raptors have the potential to nest in trees, shrubs, and grassland in the BSA. Swallows and other non-special-status birds have the potential to nest under bridges and overpasses in the BSA. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected by California Fish and Game Code Sections 3503 and 3503.5 and the MBTA.

3.2.4.2 Essential Fish Habitat

Orchard Creek and Pleasant Grove Creek, including the portions in the BSA, are considered EFH for Pacific salmon (Chinook salmon). Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. EFH is defined as aquatic habitat (water and substrate) necessary to fish for spawning, feeding, and growth to maturity. Adverse effects include the direct or indirect physical, chemical, or biological alterations of waters or substrate, and loss of other ecosystem components (e.g., food resources such as benthic invertebrates) that reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside EFH, and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Potential impacts on EFH are discussed in Section 4.4.3.

Table 3-2. Special-Status Plant Species Identified as Having the Potential to Occur in the Project Region

Common Name *Scientific Name*	Status[a] Federal/State/ CRPR	General Habitat Description	Blooming Period	Habitat Present/ Absent	Likelihood of Occurrence within the BSA
California balsamroot (*Balsamorhiza macrolepis*)	–/–/1B.2	Sometimes on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 295–5,101 feet	March–June	Present	None; no serpentine soils present. Small amount of marginally suitable habitat present but not observed during surveys within blooming period. Species not expected to be present in BSA.
Hispid bird's-beak (*Chloropyron molle* ssp. *hispidum*)	–/–/1B.1	Meadow and seeps, valley and foothill grassland, playa, on alkaline soils; 3–508 feet	June–September	Absent	None; microhabitat requirements (i.e., alkaline soils) not present in BSA. Species not expected to be present in BSA.
Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*)	–/–/4.2	Chaparral, cismontane woodland, lower coniferous forest, often on roadcuts; 246–3,001 feet	May–July	Present	None; potential habitat present but not observed during surveys within blooming period. Species not expected to be present in BSA.
Dwarf downingia (*Downingia pusilla*)	–/–/2B.2	Vernal pools and mesic valley and foothill grasslands; below 1,459 feet	March–May	Present	Moderate; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat appears to be present on parcels that could not be accessed to conduct surveys. Species could be present within vernal pools in the unsurveyed portions of the BSA, outside the limits of direct disturbance.
Stinkbells (*Fritillaria agrestis*)	–/–/4.2	Chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland, on clay, sometimes serpentinite substrate; 33–5,101 feet	March–June	Present	None; potential habitat present (small amount of Alamo series clay soils present) but not observed during surveys within blooming period. Species not expected to be present in BSA.

Common Name *Scientific Name*	Status[a] Federal/State/ CRPR	General Habitat Description	Blooming Period	Habitat Present/ Absent	Likelihood of Occurrence within the BSA
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	–/E/1B.2	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 33–7,791 feet	April–August	Present	Low; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat appears to be present on parcels that could not be accessed to conduct surveys. Species could be present within vernal pools in the unsurveyed portions of the BSA, outside the limits of direct disturbance.
Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*)	–/–/1B.2	Wet areas in valley and foothill grassland, vernal pool margins; 98–751 feet	March–May	Present	Moderate; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat appears to be present on parcels that could not be accessed to conduct surveys. Species could be present within vernal pools in the unsurveyed portions of the BSA, outside the limits of direct disturbance.
Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*)	–/–/1B.1	Seasonally wet areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; 115–4,101 feet	March–May	Present	Moderate; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat appears to be present on parcels that could not be accessed to conduct surveys. Species could be present within vernal pools in the unsurveyed portions of the BSA, outside the limits of direct disturbance.

Common Name *Scientific Name*	Status[a] Federal/State/ CRPR	General Habitat Description	Blooming Period	Habitat Present/ Absent	Likelihood of Occurrence within the BSA
Legenere (*Legenere limosa*)	–/–/1B.1	Deep, seasonally wet habitats such as vernal pools, ditches, marsh edges, and river banks; below 2,887 feet	April–June	Present	Moderate; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat appears to be present on parcels that could not be accessed to conduct surveys. Species could be present within vernal pools in the unsurveyed portions of the BSA, outside the limits of direct disturbance.
Pincushion navarretia (*Navarretia myersii* ssp. *myersii*)	–/–/1B.1	Edges of vernal pools; 66–1,083 feet	April–May	Present	Moderate; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat appears to be present on parcels that could not be accessed to conduct surveys. Species could be present within vernal pools in the unsurveyed portions of the BSA, outside the limits of direct disturbance.
Adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*)	–/–/4.2	Clay soils in vernal pools and vernally mesic annual grassland, sometimes serpentine; 330–3,300 feet	April–July	Absent	None; BSA is below known elevation range of this plant. Species not expected to be present in BSA.
Sacramento Orcutt grass (*Orcuttia viscida*)	E/E/1B.1	Large, deep vernal pools; 98–328 feet	April–July	Present	None; potential habitat present but not observed during surveys within blooming period. Based on aerial imagery, suitable habitat does not appear to be present on parcels that could not be accessed to conduct surveys. Species not expected to be present in BSA. *No effect.*

Common Name *Scientific Name*	Status[a] Federal/State/ CRPR	General Habitat Description	Blooming Period	Habitat Present/ Absent	Likelihood of Occurrence within the BSA
Sanford's arrowhead (*Sagittaria sanfordii*)	–/–/1B.2	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet	May–October	Present	None; potential habitat present but species was not observed during surveys within blooming period. Species not expected to be present in BSA.

[a] **Status explanations:**

Federal

E = Listed as endangered under the federal ESA.
T = Listed as threatened under the federal ESA.
C = Species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
— = No listing status.

State

E = Listed as endangered under CESA.
R = Listed as rare under the CESA. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
— = No listing status.

California Rare Plant Rank (CRPR)

1B = rare, threatened, or endangered in California and elsewhere.
2B = rare, threatened, or endangered in California but more common elsewhere.
4 = limited distribution; species on a watch list (note: List 4 may not meet the definition of special status but may warrant consideration on the basis of local significance or recent biological information)
.1 = Seriously endangered in California (over 80% of occurrences threatened—high degree and immediacy of threat).
.2 = Fairly endangered in California (20-80% occurrences threatened).

Table 3-3. Special-Status Wildlife Known or with Potential to Occur in the Project Region, or That May Be Affected by the Proposed Project

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–	Found in Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County; common in vernal pools; also found in sandstone rock outcrop pools.	Habitat Present	High; suitable vernal pool habitat is present within the BSA. *Likely to adversely affect.*
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–	Found from Shasta County south to Merced County; occurs in vernal pools and ephemeral stock ponds.	Habitat Present	High; suitable vernal pool habitat is present within the BSA. Species may be present within the BSA. *Likely to adversely affect*.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–	Streamside habitats below 3,000 feet throughout the Central Valley; occurs in riparian and oak savanna habitats with elderberry shrubs; elderberry shrubs are the host plant.	Absent	None; no elderberry shrubs (host plant) are present in the BSA. Species not expected to be present in BSA. *No effect.*
Amphibians				
California red-legged frog *Rana aurora draytonii*	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehema County to Fresno County; occurs in permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation; may estivate in rodent burrows or cracks during dry periods.	Habitat Present	None; suitable perennial aquatic habitat is present within the BSA. However, the species is believed by USFWS to be extirpated from the floor of the Central Valley (USFWS 2002) and the BSA would be considered part of the Sacramento Valley. Although western Placer County is considered within the current range of the species (USFWS 2002), the BSA is near the border of Sacramento County, which is not within the current range. The closest California Natural Diversity Database occurrences are more than 34 miles northeast of the BSA in the nearby foothills (California Natural Diversity Database 2015). This species is not expected to be present within the BSA. *No effect.*

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Western spadefoot toad *Spea hammondii*	–/SSC	Seasonal wetlands such as vernal pools and stock ponds in annual grasslands and oak woodlands within the Sierra Nevada foothills, Central Valley, and Coast Ranges.	Habitat Present	Moderate; suitable aquatic (vernal pools) and upland habitat is present within the BSA. Species may be present within the BSA.
Reptiles				
Giant garter snake *Thamnophis couchi gigas*	T/T	Sloughs, canals, low-gradient streams, and freshwater marsh habitats with a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	Habitat Present	None; perennial streams and emergent wetland habitat within the BSA provide suitable habitat for giant garter snake; however, no giant garter snakes have been reported from Placer County and the closest known occurrence is approximately 13 miles to the west, in an agricultural ditch in rice field habitat. No rice field habitat is present within or near the study area. The species is not expected to occur in the BSA. *No effect.*
Northern western pond turtle *Emys marmorata*	–/SSC	Occurs throughout California west of the Sierra-Cascade crest; found from sea level to 6,000 feet; does not occur in desert regions except for along the Mojave River and its tributaries; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	Habitat Present	High; suitable aquatic and upland habitat is present within and along perennial drainage and emergent wetland habitats in the BSA. Species may be present within the BSA.
Birds				
Bank swallow *Riparia riparia*	–/T	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County. Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam, along streams, coastal bluffs, and sand/gravel pits.	Absent	None; no suitable river or stream eroded bank habitat is present in BSA.

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Burrowing owl *Athene cunicularia hypugaea*	–/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast; level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows.	Present	High; annual grassland along SR 65 in the BSA provides suitable habitat. One wintering burrowing owl was observed during the February 2015 wildlife survey in a rock-lined ditch south of Twelve Bridges Drive and just east of the BSA.
California black rail *Laterallus jamaicensis coturniculus*	–/T, FP	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties; tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations. Recently discovered northern Sierra Nevada foothill population occupies shallow, densely vegetated freshwater wetlands.	Habitat Present	Low; emergent wetland habitat in the BSA provides potential nesting habitat. Black rails have not be identified in Placer County south of Lincoln but they are known to occur in close proximity. The closest known nesting location is approximately 4 miles east of the BSA within wetlands along Clover Creek (CNDDB Occurrence # 134; CDFW 2015).
Northern harrier *Circus cyaneus*	–/SSC	Occurs in grasslands, meadows, marshes, and seasonal and agricultural wetlands throughout lowland California.	Habitat Present	High; emergent wetland and tall annual grasslands along SR 65 provide potential nesting and foraging habitat for northern harrier.
Osprey *Pandion haliaetus*	–/Watch List	Nests in snags, trees, or utility poles near the ocean, large lakes, or rivers with abundant fish populations.	Absent	None; no suitable nesting or foraging habitat is present within the BSA. Possible migrant through the BSA.
Purple martin *Progne subis*	–/SSC	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats; also nests in vertical drainage holes under elevated freeways and highway.	Habitat Present	Low; purple martins have been documented to nest in the drain holes within the SR 65 overcrossing at Taylor Road just south of the BSA. Freeway overcrossings in the BSA provide potential nesting habitat for the species.

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Swainson's hawk *Buteo swainsoni*	–/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County; nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	Present	High; annual grassland in the BSA provide suitable foraging habitat for the species. Scattered trees within and adjacent to the BSA provide potential nesting sites. The closest known nest site is approximately 1.5 miles to the west along Pleasant Grove Creek (CNDDB Occurrence # 2115; CDFW 2015). Swainson's hawk have been observed foraging adjacent to the BSA during previous surveys in the vicinity (ICF International 2014).
Tricolored blackbird *Agelaius tricolor*	–/C	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties; nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	Habitat Present	High; emergent wetland and riparian scrub wetland along Orchard Creek and Pleasant Grove Creek in the BSA provide suitable nesting habitat. The closest known nesting colonies are located within bulrush vegetation at a pond approximately 0.75 mile west of Industrial Avenue at the north end of the BSA (CNDDB Occurrence # 242; CDFW 2015) and within dense blackberry along Orchard Creek approximately 0.3 mile west of the BSA (ICF International 2014).
White-tailed kite *Elanus leucurus*	–/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border; low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	Present	High; annual grassland in the BSA provide suitable foraging habitat for the species. Scattered trees within and adjacent to the BSA provide potential nesting sites. White-tailed kite was observed foraging adjacent to the BSA during the February 2015 wildlife survey.

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Mammals				
Pallid bat *Antrozous pallidus*	–/SSC	Occurs throughout California primarily at lower and mid-level elevations in a variety of habitats from desert to coniferous forest; most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Daytime roosts include rock outcrops, mines, caves, hollow trees, buildings, and bridges.	Present	Moderate; bridges in the BSA provide potential roosting areas for this species.
Silver-haired bat *Lasionycteris noctivagans*	–/–	Typically roosts in tree cavities, crevices and under loose bark; may also use leaf litter, buildings, mines, and caves; breeds in coastal and montane coniferous forests, valley foothill and montane riparian habitats; may occur in any habitat during migration.	Present	Moderate; bridges in the BSA may contain large cavities that could provide potential roosting areas.
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	–/CSSC	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings; very sensitive to disturbances and may abandon a roost after one onsite visit.	Absent	None; no suitable roosting habitat is present in the BSA.
Western red bat *Lasiurus blossevillii*	–/SSC	Found throughout much of California at lower elevations; found primarily in riparian and wooded habitats; occurs at least seasonally in urban areas; day roosts in trees within the foliage; found in fruit orchards and sycamore riparian habitats in the Central Valley.	Absent	None; no suitable roosting habitat is present in the BSA.

[a] **Status explanations:**

Federal

E = Listed as endangered under the federal Endangered Species Act.
T = Listed as threatened under the federal Endangered Species Act.
D = Delisted from the federal Endangered Species Act.
– = No listing.

State

E = Listed as endangered under the California Endangered Species Act.
T = Listed as threatened under the California Endangered Species Act.
C = Candidate for listing as threatened under the California Endangered Species Act.
FP = Fully protected under the California Fish and Game Code.
SSC = Species of special concern in California.
– = No listing.

Notes: Absent = no habitat present and no further work needed. Habitat Present = habitat is, or may be present. The species may be present. Present = the species is present.

Table 3-4. Special-Status Fish Known or with Potential to Occur in the Project Region, or That May Be Affected by the Proposed Project

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Fish				
Delta smelt *Hypomesus transpacificus*	T/E	Found primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as Knight's Landing on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay; occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002).	Absent	None; BSA is not located within the historical or current distribution of this species, and suitable habitat does not occur in the BSA. Species is not expected to occur in the BSA. *No effect.*
California Central Valley steelhead *Oncorhynchus mykiss*	T/–	Sacramento and San Joaquin Rivers and tributary Central Valley streams and rivers below impassable barriers; occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18 degrees (°)Celsius (C); habitat types are riffles, runs, and pools; adults spawn at head of riffles/tails of pools; young rear year-round for 1–4 years before emigrating to the ocean (Moyle 2002).	Habitat Present	Low; Orchard Creek and Pleasant Grove Creek in the BSA provide potential migration and seasonal rearing habitat because of their hydrologic connection to Auburn Ravine and Pleasant Grove Canal, respectively. (There are anecdotal reports that adult steelhead occur in Auburn Ravine, and Pleasant Grove Canal has a direct connection to the Cross Canal and the Sacramento River—the latter is known to support steelhead.) Species not expected to be present in the BSA during the summer primarily because of excessively warm water temperatures and low or no flow. *No effect.*

Common Name *Scientific Name*	Legal Status[a] (Federal/State/Other)	General Habitat Description	Habitat Present/Absent	Likelihood of Occurrence within the BSA
Central Valley fall-/late fall–run Chinook salmon *Oncorhynchus tshawytscha*	–/SSC	Sacramento and San Joaquin Rivers and tributary Central Valley streams and rivers below impassable barriers; occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C; habitat types are riffles, runs, and pools; adults spawn at head of riffles/tails of pools; young rear for several months and emigrate to the ocean before summer (Moyle 2002).	Habitat Present	Low; Orchard Creek and Pleasant Grove Creek in the BSA provide potential migration and seasonal rearing habitat for the species because of their hydrologic connection to Auburn Ravine and Pleasant Grove Canal, respectively. Species is not expected to be present in the BSA during summer because most juveniles migrate downstream before summer when conditions become unsuitable.

[a] **Status explanations:**

Federal

E = Listed as endangered under the federal Endangered Species Act.
T = Listed as threatened under the federal Endangered Species Act.
– = No listing.

State

E = Listed as endangered under the California Endangered Species Act.
SSC = Species of special concern in California.
– = No listing.

Notes: Absent = no habitat present and no further work needed

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

The impact analysis for biological resources was conducted by evaluating the potential changes to existing biological communities that could result from the anticipated project construction. The following activities could cause direct and indirect impacts of varying degrees on sensitive biological resources present in the BSA.

- Vegetation removal.
- Grading and fill placement during construction.
- Possible in-water work during construction of culvert extensions at existing drainages.
- Pile driving within Pleasant Grove Creek.
- Temporary dewatering of Pleasant Grove Creek and Orchard Creek (if necessary) during construction.
- Temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes.
- Runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for project construction and maintenance into sensitive biological resource areas (e.g., riparian habitat, wetlands).

The following assumptions were used in assessing project impacts on biological resources.

- The two build alternatives have the same permanent and temporary impact footprint; therefore impacts on biological resources are assumed to be the same for either build alternative.
- All construction, staging (including vehicle parking), storage, and access areas will be restricted to the permanent and temporary impact areas depicted in Figures 2a through 2k.
- Impacts on land cover types and associated wildlife habitat were determined by overlaying preliminary footprints for permanent project features and temporary work areas (e.g., access roads, equipment staging) onto aerial photographs of mapped land cover types within the BSA (Figures 2a through 2k).
- Loss of annual grassland vegetation in the BSA is not considered a significant impact from a botanical standpoint, because this habitat is common and is not considered a sensitive community type. Annual grassland vegetation also reestablishes more easily after disturbance than riparian or wetland communities. However, the loss of annual grassland habitat could result in impacts on special-status wildlife species, and these impacts are discussed in this analysis.

- The project footprint does not extend outside the existing Caltrans ROW for SR 65 and therefore the proposed project will not directly affect any habitat outside the ROW, including open space preserves.
- Construction BMPs will be implemented to ensure that indirect effects on habitats within the preserves are avoided or minimized.
- All in-water construction and pile driving will be limited to the period between June 1 and October 15.

4.1 Natural Communities of Special Concern

Natural communities of special concern within the BSA are primarily restricted to stream corridors and open space within a mostly developed and urban setting. Land cover types mapped within the BSA that would qualify as natural communities of special concern include riparian scrub wetland, emergent wetland, seasonal wetland, and vernal pool. For the purposes of this NES, a combined discussion of the four wetland types in the BSA is presented in Section 4.1.1. The other waters of the United States (i.e., non-wetlands) in the BSA consist of open water portions of perennial and ephemeral streams and are discussed in this section because they are subject to federal (CWA) and state (Porter-Cologne Act and California Fish and Game Code Section 1602) regulation.

4.1.1 Wetlands

4.1.1.1 Survey Results

Wetlands are scattered throughout the BSA. Descriptions of each wetland type are provided in Section 3.1.2 of Chapter 3. Figures 2a through 2k depict the locations of each wetland type within the BSA.

4.1.1.2 Project Impacts

Construction of the proposed project would result in direct temporary and permanent impacts on riparian scrub wetland, emergent wetland, seasonal wetland, and vernal pool habitats. Impacts were considered to be permanent if they would result in the placement of permanent fill in these wetland habitats associated with SR 65 mainline widening and reconstruction of ramp connections. Impacts were considered to be temporary if fill would be removed following completion of construction and temporarily disturbed portions of wetlands would be restored. Additional indirect impacts caused by sedimentation or modification of hydrology could occur in portions of wetlands that lie outside the project footprint.

Table 4-1 summarizes the impacts of project activities on wetland types.

Table 4-1. Impacts on Wetlands

Wetland Type	Temporary (acres)	Permanent (acres)
Riparian scrub wetland	0.029	0.170
Emergent wetland	0.462	0.858
Seasonal wetland	0.270	0.137
Vernal pool	0	0

4.1.1.3 Avoidance and Minimization Efforts

Implementation of the following measures will ensure that the proposed project minimizes effects on wetlands within and adjacent to the construction area. Additional avoidance and minimization measures may be agreed upon during the project permitting process.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Prior to construction, the project proponent's contractor will install high-visibility orange construction fencing or flagging, as deemed appropriate by a qualified biologist, along the perimeter of the work area adjacent to Environmentally Sensitive Areas (ESAs) (e.g., riparian vegetation, wetlands, streams, special-status species habitat, and active bird nests). Where specific buffer distances are required for sensitive biological resources (e.g., special-status species habitats), they will be specified under the corresponding measures below. The project proponent will ensure that the final construction plans show the locations where fencing will be installed. The plans also will define the fencing installation procedure. The project proponent or contractor (at the discretion of the project proponent) will ensure that the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is repaired or replaced. The project's special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs. All temporary fencing will be removed upon completion of construction.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Before any work occurs within the project limits, including grading and vegetation removal (grubbing), the project proponent will retain a qualified biologist (familiar with the resources to be protected) to conduct a mandatory contractor/worker environmental awareness training for construction personnel. The awareness training will be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid impacts on sensitive biological resources (e.g., riparian vegetation, wetlands, special-status species, and nesting birds) adjacent to construction areas and the penalties for not complying with applicable state and federal laws and

permit requirements. The biologist will inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of applicable project permits. Proof of this instruction will be submitted to the project proponent, and other overseeing agencies (i.e., CDFW, USFWS), as appropriate.

The environmental training will also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction. General restrictions and guidelines that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10 mile-per-hour speed limit on unpaved roads or access areas during travel within the project limits.
- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.
- Vegetation clearing and construction operations will be limited to the minimum necessary in areas of temporary access to work areas and staging.
- All food-related trash will be disposed of in closed containers and removed from the project site at least once a week during the construction period. Construction personnel will not feed or otherwise attract wildlife to the project site.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

The project proponent will retain a qualified biologist to periodically monitor all construction activities that involve ground disturbance (e.g., vegetation removal, grading, excavation) within or adjacent to ESAs (e.g., riparian vegetation, wetlands, streams, special-status species habitat, and active bird nests). At minimum, the monitor will conduct weekly site visits and will monitor construction activities in the vicinity of sensitive habitat for a minimum of 2 hours. The purpose of the monitoring is to ensure that measures identified in this report are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the project complies with all applicable permit requirements and agency conditions of approval. The biologist will ensure that fencing around ESAs remains in place during construction and that no construction personnel, equipment, or runoff of sediment from the construction area enters ESAs. The monitor will complete daily logs, and a final monitoring report will be prepared at the end of

each construction season and be submitted to the project proponent and other overseeing agencies (i.e., CDFW, USFWS), as appropriate.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

The project proponent will comply with all construction site BMPs developed from Caltrans' Construction Site BMP Manual (Caltrans 2003) and specified in the SWPPP, and any other permit conditions to minimize the introduction of construction-related contaminants and mobilization of sediment in wetlands and other waters in and adjacent to the project area. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The BMPs will be based on the best conventional and best available technology that are consistent with the BMPs and control practices required under the CWA.

The proposed project is subject to stormwater quality regulations established under the NPDES, described in Section 402 of the federal CWA. In California, the NPDES program requires that any construction activity disturbing 1 or more acres comply with the statewide General Permit, as authorized by the State Water Board. The General Permit requires elimination or minimization of non-stormwater discharges from construction sites and development and implementation of a SWPPP for the site. The primary elements of the SWPPP include the following.

- Description of site characteristics–including runoff and streamflow characteristics and soil erosion hazard—and construction procedures.
- Guidelines for proper application of erosion and sediment control BMPs.
- Description of measures to prevent and control toxic materials spills.
- Description of construction site housekeeping practices.

In addition to these primary elements, the SWPPP will specify that the extent of soil and vegetative disturbance will be minimized by control fencing or other means and that the extent of soil disturbed at any given time will be minimized. The SWPPP must be retained at the construction site.

The BMPs will be selected to achieve maximum sediment removal. The BMPs will represent the best available technology that is economically achievable and are subject to review and approval by Caltrans. Caltrans and the project proponent will perform routine inspections of the construction area to verify that the BMPs are properly implemented and maintained.

The project proponent also will obtain a 401 water quality certification from the Central Valley RWQCB and a LSAA from CDFW, which may contain additional BMPs and water quality measures to ensure the protection of water quality.

4.1.1.4 Compensatory Mitigation

Measure 5: Compensate for the Placement of Fill into Wetlands

To compensate for the temporary and permanent project impacts on riparian scrub wetland, emergent wetland, and seasonal wetland, the project proponent will purchase credits at an approved mitigation bank to ensure no net loss of wetland functions and values. Wetland mitigation is also identified under Measure 8 to compensate for federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp habitat. To accomplish this, the seasonal wetland mitigation credits will be purchased at a bank that includes federally listed branchiopod species. Mitigation banks with service areas for Placer County that sell credits that satisfy USACE wetland and USFWS requirements include Sacramento River Ranch Mitigation Bank, Locust Road Mitigation Bank, and Toad Hill Ranch Mitigation Bank. The wetland compensation ratio will be 1:1 (1 acre of wetland habitat credit for every 1 acre of impact) to ensure no net loss of wetland habitat functions and values.

The project proponent will also implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

4.1.1.5 Cumulative Impacts

Cumulative impacts on wetlands would result from construction of other general development projects in Placer County. Construction of the proposed project would add to the cumulative loss of wetlands. However, with implementation of the measures prescribed for avoiding or minimizing impacts and compensating for remaining impacts, the proposed project's incremental contribution to cumulative impacts on wetlands is not cumulatively considerable.

4.1.2 Other Waters of the United States

4.1.2.1 Survey Results

Other waters of the United States are scattered throughout the BSA. Descriptions of each other water type are provided in Section 3.1.2 of Chapter 3.

4.1.2.2 Project Impacts

Construction of the proposed project would result in temporary and permanent impacts on perennial and ephemeral streams and ditches. Impacts were considered to be permanent if they would result in the placement of permanent fill in stream or ditch habitats associated with construction to extend culverts at existing stream crossings and reconstruction of drainage ditches

within existing ramps and interchanges. Impacts were considered to be temporary if fill would be removed following completion of construction and temporarily disturbed portions of stream or ditch would be restored. Temporary impacts on other waters may include modification of the stream bank or channel, increased turbidity, and runoff of chemical substances.

Indirect impacts on water quality, such as increased turbidity and chemical runoff, may also result from project construction within the downstream portions of streams that are outside the project footprint. The extent of potential indirect impacts on water quality are based on conditions of the habitat and water flows at the time of the discharge and therefore were not quantified for this analysis.

Table 4-2 summarizes the impacts of project activities on other water types.

Table 4-2. Impacts on Other Waters of the United States

Other Waters Type	Temporary (acre)	Permanent (acre)
Perennial stream	0.019	0.032
Ephemeral stream	0.038	0.015
Ditch	0.459	0.070

4.1.2.3 Avoidance and Minimization Efforts

Impacts on other waters will be avoided or minimized by implementing the following measures. Additional avoidance and minimization efforts may be agreed upon during the project permitting process.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

4.1.2.4 Compensatory Mitigation

Measure 6: Compensate for the Placement of Permanent Fill into Other Waters

The project proponent will compensate for the permanent fill of other waters of the United States/waters of the State (a direct impact associated with culvert and roadway construction). Temporarily disturbed other waters of the United States/waters of the state will be returned to pre-construction condition following construction. To compensate for permanent fill, the project proponent will purchase compensatory credits at a USACE-approved mitigation bank to ensure no net loss of functions and values. The minimum other waters compensation ratio will be 1:1 (1 acre of other waters habitat credit for every 1 acre of permanent impact) to ensure no net loss of habitat functions and values.

The project proponent also will implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

4.1.2.5 Cumulative Impacts

Cumulative impacts on other waters would result from construction of other general development projects in Placer County. Construction of the proposed project would add to the cumulative loss of other waters. However, with implementation of the measures prescribed for avoiding or minimizing impacts and compensating for remaining impacts, the proposed project's incremental contribution to cumulative impacts on other waters is not cumulatively considerable.

4.1.3 Waters of the State

4.1.3.1 Survey Results

Waters of the State are scattered throughout the BSA. All wetlands and other waters as described above and depicted in the delineation of aquatic resources conducted for the project are also considered waters of the State. Descriptions of each other water type are provided in Section 3.1.2 of Chapter 3. All riparian areas associated with streams in the BSA also qualified as jurisdictional wetlands and are mapped and described in the delineation of aquatic resources. There were no additional areas in the BSA that are waters of the State but not waters of the United States.

4.1.3.2 Project Impacts

Construction of the proposed project would result in temporary and permanent impacts on waters of the State. Impacts are described above in Section 4.1.1. *Wetlands* and Section 4.1.2 *Waters of the United States*. Tables 4.1 and 4.2 above summarize the impacts of project activities on each type of waters of the State.

4.1.3.3 Avoidance and Minimization Efforts

Implementation of the measures listed above in Section 4.1.1. *Wetlands* and Section 4.1.2 *Waters of the United State* will ensure that the proposed project minimizes effects on waters of the State within and adjacent to the construction area. Additional avoidance and minimization measures may be agreed upon during the project permitting process.

4.1.3.4 Compensatory Mitigation

Measure 5: Compensate for the Placement of Fill into Wetlands

Please refer to the discussion of Measure 6 in Section 4.1.1.4.

Measure 6: Compensate for the Placement of Permanent Fill into Other Waters

Please refer to the discussion of Measure 6 in Section 4.1.2.4.

4.1.3.5 Cumulative Impacts

Cumulative impacts on other waters would result from construction of other general development projects in Placer County. Construction of the proposed project would add to the cumulative loss of waters of the State. However, with implementation of the measures prescribed for avoiding or minimizing impacts and compensating for remaining impacts, the proposed project's incremental contribution to cumulative impacts on waters of the State is not cumulatively considerable.

4.2 Special-Status Plant Species

As indicated in Chapter 3, information obtained from the CNDDB, CNPS, and USFWS was used to compile a list of the 13 special-status plant species known to occur in the project region (Table 3-2). One of these sensitive plant species occurs at elevations substantially higher than the elevation range within the BSA and one has microhabitat requirements (alkaline soils) that are not present in the BSA. The BSA contains potential habitat for the remaining 11 species in vernal pools, seasonal wetlands, emergent wetlands, and mesic annual grasslands. The amount of historical and ongoing disturbance in the BSA has decreased the quality of potential habitat for special-status plant species.

4.2.1 Survey Results

No special-status plants were observed during the September 2014 and May 2015 botanical surveys, which were conducted during the reported identification periods of the 11 special-status plant species determined to have the potential to occur in the BSA. However, access was not available to survey several parcels located on the west side of SR 65 from Industrial Avenue south to the Whitney Ranch Parkway Interchange. Based on examination of recent aerial imagery, these areas support shallow vernal pools and swales that are potential habitat for several special-status plants that are associated with vernal pools (dwarf downingia, Boggs Lake hedge-hyssop,

Ahart's dwarf rush, Red Bluff dwarf rush, legenere, pincushion navarretia), and it is presumed that these species could be present in the BSA.

One special-status plant, dwarf downingia (*Downingia pusilla*), has been recorded on a parcel that overlaps with the BSA (CNDDB occurrence #60) . This parcel was not surveyed due to access restrictions and therefore the continuing presence of this special-status plant could not be verified. This occurrence is located within a vernal pool complex located between Industrial Boulevard and SR 65 at the north end of the BSA. Suitable habitat for this plant, i.e., vernal pools, appears to remain at this location, and therefore this plant is presumed to be present in the BSA.

Dwarf downingia has a California Rare Plant Rank (CRPR) of 2B.2 (rare, threatened or endangered in California but more common elsewhere; threat rank is fairly endangered in California). It has no state or federal listing. It occurs primarily in vernal pools but is also found in vernally mesic annual grassland.

4.2.2 Project Impacts

Special-status plants were not observed within the BSA during appropriately timed botanical surveys in parcels for which access was available. However, based on the known presence of dwarf downingia at one location in the BSA, it was determined that this plant, and other special-status plants associated with vernal pools, could occur in suitable habitat within the BSA that could not be accessed to conduct surveys. These vernal pools are located on the west side of SR 65 from Industrial Avenue south to the Whitney Ranch Parkway Interchange. For purposes of this impact analysis, vernal pools and seasonal wetlands in this portion of the BSA are presumed to be occupied by dwarf downingia and other special-status plants associated with vernal pools. There would be no direct impacts on vernal pools in this portion of the BSA because the areas of temporary and permanent impact are within the existing right-of-way that has been graded and does not support vernal pools or suitable seasonal wetlands. Accordingly, there would be no direct impacts on dwarf downingia and other special-status plants.

However, vernal pool habitat for dwarf downingia and other special-status plants that is located within 250 feet of project construction could be indirectly affected. Construction activities such as excavation, grading, paving, or stockpiling of soil could result in indirect effects on dwarf downingia and other special-status plants by altering the suitability of nearby habitat. Runoff of sediment, gasoline, oil, or other contaminants could result in degradation of water quality within suitable habitat. Changes in hydrology also could reduce the suitability of habitat by altering the hydroperiod of vernal pools and other suitable wetlands.

4.2.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid or minimize indirect impacts on dwarf downingia and other special-status plants habitat within 250 feet of proposed ground disturbance.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 7: Avoid and Minimize Potential Indirect Impacts on Habitat for Vernal Pool Branchiopods and Other Vernal Pool Species

The following avoidance and minimization efforts will be implemented prior to and during construction to protect habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, and other vernal pool species outside the project footprint.

- Ground disturbance within 250 feet of suitable vernal pool fairy shrimp and vernal pool tadpole shrimp habitat (i.e., vernal pools) will be avoided from the first day of the first significant rain (1 inch or greater) until June 1, or until suitable wetlands remain dry for 72 hours and no significant rain is forecast on the day of such ground disturbance.
- Consistent with Measure 1 (*Install Fencing and/or Flagging to Protect Sensitive Biological Resources*), a qualified biologist will guide the installation of exclusion fencing prior to the start of ground-disturbing activities (including staging, grading, and vegetation removal). The exclusion fencing will be installed along the edge of the construction limits between the work area and aquatic resources to be avoided. The exclusion fencing will consist of orange construction barrier and erosion control fencing or combination fencing, and will be installed by the project proponent or its construction contractor. The erosion control fencing will be buried a minimum of 6 inches to prevent sediment runoff into adjacent wetlands.
- No herbicide will be applied within 100 feet of aquatic habitat, except when applied to cut stumps or frilled stems, or injected into stems. No broadcast applications will be used.

4.2.4 Compensatory Mitigation

The project is not expected to remove any populations of dwarf downingia or other special-status plants because suitable habitat for these species will not be directly affected; therefore, no compensation is required. Compensation for indirect effects on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat described under *Measure 8: Compensate for Direct and Indirect Impacts on Vernal Pool Branchiopod Habitat,* will also benefit dwarf downingia and other special-status plants.

4.2.5 Cumulative Impacts

Other non-federal projects that are likely to affect dwarf downingia and other special-status plant habitat within the greater Placer County region include private development, primarily west of SR 65. The project is not expected to remove any populations of dwarf downingia or other special-status plants because suitable habitat for these species would not be directly affected; therefore, no cumulative impacts are expected.

4.3 Special-Status Wildlife Species

As described in Chapter 2, *Study Methods*, special-status wildlife species with the potential to occur in the BSA were identified after a review of existing information, coordinating with agency personnel, and conducting biological field surveys. Table 3-3 lists all special-status wildlife species that were identified during the prefield investigation as potentially occurring in the project region. After the 2014 and 2015 biological field surveys were conducted, the biologist determined that, either because there was no suitable habitat or because the BSA was outside the species' geographic range, seven of the 20 terrestrial wildlife species listed in Table 3-3 would not occur within the BSA. The remaining 13 special-status terrestrial wildlife species were identified as potentially occurring in the BSA or may be affected by construction activities and are discussed below.

4.3.1 Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp is a federally listed threatened species. The species is found from Shasta County in the north throughout the Central Valley, and west to the central Coast Ranges, at elevations of 30 to 4,000 feet. Additional populations have been reported from the Agate Desert region of Oregon near Medford; and disjunct populations occur in San Luis Obispo, Santa Barbara, and Riverside Counties. However, most known locations are in the Sacramento and San Joaquin Valleys and along the eastern margin of the central Coast Ranges (Eng et al. 1990:255–258).

Vernal pool fairy shrimp inhabit vernal pools that form in depressions, usually in grassland habitats (Eng et al. 1990:255–258). Pools must remain inundated long enough for the species to

complete its life cycle. Vernal pool fairy shrimp has the shortest time to reach sexual maturity, with a minimum of 18 days (Helm 1998:132). Vernal pool fairy shrimp also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands (Helm 1998:137). Occupied wetlands range in size from as small as several square feet to more than 10 acres. Vernal pool fairy shrimp and other fairy shrimp have been observed in artificial depressions and drainages where water ponds for a sufficient duration (Helm 1998:134–138). Examples of such areas include roadside ditches and ruts left behind by off-road vehicles or heavy equipment. Soil compaction from construction activity can sometimes create an artificial hardpan, or restrictive layer, which allows water to pond and form suitable habitat for vernal pool fairy shrimp.

4.3.1.1 Survey Results

The proposed project is within the current range of vernal pool fairy shrimp. Based on the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (U.S. Fish and Wildlife Service 2005), the BSA lies within the Western Placer County core area within the Southeastern Sacramento Valley vernal pool region but does not overlap with designated critical habitat for vernal pool fairy shrimp (70 Federal Register [FR] 46924 and 71 FR 7117). Vernal pools within the BSA represent potential habitat for vernal pool fairy shrimp (Figures 2a through 2k). Several seasonal wetlands were also mapped within the BSA; however, many of these features receive irrigation runoff as their principle water source and hold water for shorter periods of time than vernal pools, and are often seasonally inundated during short periods throughout the year. This hydroperiod would not support suitable conditions for vernal pool fairy shrimp reproduction. Two seasonal wetlands within the southbound SR 65 on-ramp loop from Blue Oaks Boulevard and several seasonal wetlands north of the northbound SR-65 off-ramp loop to westbound Blue Oaks Boulevard (Figure 2h) were considered suitable habitat for vernal pool fairy shrimp. These ephemeral features occupy a low point within the landscape and their principle water source is direct precipitation and stormwater runoff from the adjacent roadway. Based on a review of historical aerial photographs, they appear to hold water for a sufficient duration (at least 3 weeks) to allow vernal pool fairy shrimp to reproduce. Potential habitat for vernal pool fairy shrimp is depicted as vernal pool branchiopod habitat on Figures 2a through 2k.

More than 10 documented occurrences of vernal pool fairy shrimp have been recorded within 1 mile of the BSA. These records are for natural and created vernal pools located west and east of SR 65 (California Department of Fish and Wildlife 2016).

4.3.1.2 Project Impacts

Based on the known presence of vernal pool fairy shrimp in the project vicinity (within 1 mile of the BSA), it was determined that vernal pool fairy shrimp may occur in suitable habitat (vernal pools and seasonal wetlands) within the BSA. For purposes of this impact analysis, vernal pools and seasonal wetlands in the BSA that support suitable habitat characteristics are presumed to be occupied by vernal pool fairy shrimp. The project has been designed to avoid vernal pool fairy shrimp habitat to the extent possible. Only one seasonal wetland that provides suitable habitat for vernal pool fairy shrimp would be directly affected by project construction. Reconstruction of the existing southbound SR 65 on-ramp from Blue Oaks Boulevard would fill one seasonal wetland within the on-ramp loop (SW-23; Figure 2h) that provides suitable habitat for vernal pool fairy shrimp. Direct impacts that result in modification (i.e., permanent or temporary fill or excavation) of suitable habitat in the BSA could result in the subsequent loss of vernal pool fairy shrimp and their eggs.

Vernal pool fairy shrimp habitat that is located in close proximity to project construction may also be indirectly affected. Construction activities such as excavation, grading, paving, or stockpiling of soil could result in indirect effects on vernal pool fairy shrimp by altering the suitability of nearby habitat. Runoff of sediment, gasoline, oil, or other contaminants may result in degradation of water quality within suitable habitat. Changes in hydrology also may reduce the suitability of habitat by altering the hydroperiod of vernal pools and other suitable wetlands.

For the purpose of calculating indirect effects on vernal pool fairy shrimp habitat, existing barriers between suitable vernal pool fairy shrimp habitat and project activities were assumed sufficient in preventing indirect effects. For example, several vernal pools are located east of SR 65 and north of West Ranch View Drive on a bermed area that is approximately 3–4 feet higher than existing grade within the right-of-way (Figure 2d); these vernal pools would not be affected by the project. In addition, if an existing roadway or wetland feature separates project activities from suitable vernal pool fairy shrimp habitat, indirect effects to this habitat was assumed to be avoided. Table 4-3 summarizes the potential impacts of project construction on vernal pool fairy shrimp habitat.

Because the project consists of modifying an existing roadway with established drainage patterns for storm water runoff, it is assumed that if these drainage patterns are maintained that the project will not indirectly affect hydrology within adjacent habitat. Indirect effects associated with potential sediment and chemical runoff during construction would also be avoided and minimized through implementation of standard Caltrans construction BMPs that include installation of sediment control devices and implementation of a spill response plan. Because there is abundant vernal pool branchiopods habitat within the BSA and because existing conditions and proposed construction activities vary throughout the BSA, a detailed effects analysis was conducted for

localized areas supporting habitat. Table 4-3 describes the rationale for effects on vernal pool branchiopod habitat within these localized areas, each consisting of 1 to 19 wetland features. The resulting acreage of habitat that is expected to be directly and indirectly affected by project implementation are listed in Table 4-4.

Table 4-3. Effects Rationale for Vernal Pool Branchiopod Habitat

Habitat ID*	Located in an Open Space Preserve?	Effects Rationale	Conclusion of Effects
VPs 1 - 7, and 9	No - but part of a project BO for Lincoln 270 (USFWS 81420-2009-F-0092-4)	Grading and paving activities will occur more than 200 feet north of these pools. Vehicle access and staging may occur within the existing right-of-way up to the fence line adjacent to pools VP 1 and VP 2; however no ground disturbance is anticipated. Therefore, no indirect effects to any of the pools in this area are anticipated. Additionally, these features were previously mitigated by the Lincoln 270 project. Presently, stormwater runoff from the BSA sheet flows into an existing toe gutter/ditch and drains to an existing ditch within right of way and south into Orchard Creek. This drainage pattern will be maintained.	No effects
VPs 8, 10, and 11	Yes - Lincoln	These pools are on the opposite side of highway from ground disturbance.	No effects
VPs 12 - 14	Yes - Lincoln	These pools are on the opposite side of off-ramp from proposed staging area between off-ramp and SR 65. No excavation or grading proposed in vicinity of these pools.	No effects
VPs 15 and 16	No	Both of these pools are located 150 feet west of proposed grading and paving activities associated with roadway expansion and 120 feet west of the area that would provide vehicle access and staging during construction. In this area storm water sheet flows off the existing roadway and drains south to Orchard Creek. This existing drainage pattern would continue for the new section of roadway. Based on limited ground disturbance (grading and paving) and implementation of water quality and sediment-control BMPs during construction, no indirect effects to these pools are anticipated.	No effects
VPs 17 and 18	Yes-Lincoln	These pools are separated from proposed roadway expansion by a perennial drainage that provides a buffer between the pools and proposed grading and paving activities to the southwest; therefore no indirect effects to the pools are anticipated.	No effects
VPs 22 - 24	Yes-Lincoln	Edge of newly constructed roadway will be 10 feet from VP 23 and this pool could be indirectly affected since it is immediately adjacent to proposed grading and paving activities, which could result in the discharge of sediment or contaminants during construction. Because VP 23 parallels the highway it acts as a barrier to VP 22 and VP 24 and therefore no effects to those pools are anticipated.	Indirect effect on VP 23
VPs 19-21 and 25	Yes-Lincoln	These pools are located between 80 feet and 160 feet east of proposed grading and paving activities associated with new roadway construction. Ground disturbance is expected to be minimal because only a small amount of fill is required to extend the roadway surface. An existing toe drain collects storm water from the road surface and drains to Orchard Creek. The new roadway section would be constructed with a similar feature so that storm water would continue to flow in the same manner and would not sheet flow directly into nearby vernal pools. Based on the limited ground disturbance and implementation of water quality and sediment-control BMPs during construction, no indirect effects to these pools are anticipated.	No effects
VPs 26 -28	Yes-Lincoln	These pools are located 150 to 225 feet east of proposed grading, excavation, and paving associated with new roadway construction and extension of an existing culvert. Currently at this location storm water is directed into the existing culvert and flows under the highway to the west. This existing drainage pattern would be maintained with the expanded roadway	No effects

Habitat ID*	Located in an Open Space Preserve?	Effects Rationale	Conclusion of Effects
		section. Although some fill is required at this location to match the existing road grade and extend the culvert, this activity would have minimal disturbance to the existing drainage patterns and because water quality and sediment-control BMPs will be implemented during construction, no indirect effects to these pools are anticipated.	
VPs 29 -39 and VPs 41 – 47, and 49	Yes - Lincoln	All of the VPs are within grassland habitat that is higher in elevation (between 3 and 6 feet) then the existing and proposed roadway. Although construction of the new roadway section will require cutting into the existing slope, this activity will be more than 50 feet from these pools and the pools will remain at a higher elevation then the disturbance. Therefore no indirect effects on these pools are anticipated.	No effects
VPs 48 and 50	Yes - VP 48 is in Lincoln OS	In this location, a new auxiliary lane would be constructed to the north to tie back into the existing highway. VPs 48 and 50 are located 200 feet and 300 feet, respectively, from proposed excavation and paving activities and are approximately 8 feet higher than the existing and proposed roadway elevations. Although the proposed project will require excavating into the existing slope, all of the proposed ground disturbance will be lower in elevation than the pools and would not affect pool hydrology or result in sedimentation runoff. No effects are anticipated.	No effects
VPs 51 -58	Yes – VPs 53 to 58 are within Sunset West Preserve (USFWS 1-1-99-F-0043)	VPs 51, 52, and 53 are located within 10 feet of proposed grading and paving activities. Although water quality and sediment-control BMPs will be implemented during construction, the proximity of these pools to ground disturbance increases the risk for discharge of sediment or pollutants during construction. Also, because of the close proximity to the proposed edge of pavement, VPs 51, 52, and 53 are likely to collect direct storm water runoff from the road surface which could lead to a buildup of contaminants in these pools resulting in the degradation of this habitat over time. VPs 54 – 58 are located between 50 and 200 feet west of proposed grading and paving activities associated with roadway expansion. Because the new roadway section will be constructed at the same elevation as the existing roadway, minimal cut and fill will be required. In this area storm water sheet flows off the existing roadway and drains south along a roadside ditch to Pleasant Grove Creek. Construction of the new roadway section will maintain this flow and will not result in a change of drainage patterns in this area. Based on the limited ground disturbance, no change in drainage patterns, and implementation of water quality and sediment-control BMPs during construction, indirect effects can be avoided for VPs 54 - 58.	Indirect effects on VPs 51, 52, and 53
VPs 59 and 60	Yes - Sunset West Preserve (USFWS 1-1-99-F-0043)	VP 59 is located approximately 145 feet east from proposed bridge construction and it is anticipated that with implementation of water quality and sediment-control BMPs, indirect effect on VP 59 can be avoided. VP 60 is located approximately 20 feet east of proposed construction associated with expansion of the existing bridge over Pleasant Grove Creek. Substantial ground disturbance will be required for this work. Although water quality and sediment-control BMPs will be implemented during construction, the proximity and amount of disturbance has a high risk for	Indirect effects on VP 60

Habitat ID*	Located in an Open Space Preserve?	Effects Rationale	Conclusion of Effects
		discharge of sediment or pollutants to this pool during construction. Therefore, it is anticipated that the project may indirectly affect VP 60. VP 59 is located approximately 145 feet east from proposed bridge construction and it is anticipated that with implementation of water quality and sediment-control BMPs, indirect effect on VP 59 can be avoided.	
VPs 61-66	Yes – Park Side Industrial Center Preserve	VPs 63 – 66 are separated from the existing roadway by a berm that slopes to the west. Construction of new roadway will require some excavation into this berm. However, VPs 63 – 66 will be at a higher elevation than the new roadway construction activities and they are located between 160 feet and 240 feet west of proposed ground disturbance. No indirect effects to these pools are anticipated. Pools 61 and 62 are located along the toe of the existing berm and are at the same elevation as the existing roadway and the proposed new roadway surface. VP 61 is 100 feet west of proposed grading and paving activities. Because there is minimal cut and fill proposed at this location and because water quality and sediment-control BMPs will be implemented during construction, indirect effects to this pool can be avoided. However, VP 62 is located only 10 feet west of proposed grading and paving associated with roadway construction. Although water quality and sediment-control BMPs will be implemented during construction, the proximity of VP 62 to ground disturbance increases the risk for discharge of sediment or pollutants during construction. Also, because of the close proximity to the proposed edge of pavement, VP 62 is likely to collect direct storm water runoff from the road surface which could lead to a buildup of contaminants in this wetland resulting in the degradation of this habitat over time. Therefore, it is anticipated that the project may indirectly affect VP 62.	Indirect effect on VP 62
VP 67	No	This pool is separated from grading and paving activities associated with roadway construction by a storm water drainage feature that has been excavated and supports emergent wetland vegetation. Because this drainage feature acts as a buffer between VP 67 and construction, no effects to this pool are anticipated.	No effects
SWs 18 -21	Yes - Sunset West Preserve (USFWS 1-1-99-F-0043)	SWs 18, 19, and 21 are located between 85 feet and 200 feet east of proposed grading and paving activities associated with new roadway construction. Because the new roadway section will be constructed at the same elevation as the existing roadway, minimal cut and fill will be required. Storm water runoff from the existing roadway currently flows to the north into a small ditch that drains to an excavated channel. Construction of the new roadway section will maintain this flow and will not result in a change of drainage patterns in this area. Based on the limited ground disturbance, no change in drainage patterns, and implementation of water quality and sediment-control BMPs during construction, indirect effects can be avoided for SWs 18, 19, and 21. SW 20 is located within 15 feet of proposed grading and paving activities. Although water quality and sediment-control BMPs will be implemented during construction, the proximity to ground disturbance increases the risk for discharge of sediment or pollutants during construction. Drainage patterns in this area will remain the same and storm water runoff from	Indirect effect on SW 20

Habitat ID*	Located in an Open Space Preserve?	Effects Rationale	Conclusion of Effects
		the new roadway section will be directed into a toe gutter/ditch that drains to the north into an existing flood control channel.	
SWs 22 and 23	No	SW 23 will be filled during reconstruction of the on-ramp to southbound SR 65. Although SW 22 will not be directly modified during reconstruction activities, this wetland is located in a low point within the on-ramp loop and there is a high potential for sediment and contaminants to discharge to this feature during excavation upslope. Therefore, it is anticipated that the project will directly affect SW 23 and may indirectly affect SW 22.	Direct effect on SW 23 and Indirect effect on SW 22
VPs 68 - 71	Yes – Highland Reserve South (USFWS1-1-97-F-0142)	VPs 68 – 71 are located between 200 feet and 320 feet east of proposed grading and paving activities associated with roadway construction. Fill will be imported to build the new roadway base because the adjacent land is approximately 5 feet lower than the existing roadway elevation. Storm water runoff from the existing roadway currently flows downslope into a concrete-lined toe drain that drains to Highland Ravine. Construction of the new auxiliary lane will reconstruct the toe drain to maintain this drainage pattern. Based on the limited ground disturbance, no change in drainage patterns, and implementation of water quality and sediment-control BMPs during construction, indirect effects can be avoided for VPs 68 -71.	No effects
VPs 72 and 73	Yes – Highland Reserve North (USFWS 1-1-00-F-0016)	VP 72 is located approximately 10 feet east of construction of a new embankment and extension of a culvert at Highland Ravine to support additional northbound lanes. Fill will be imported to build the new roadway embankment because the adjacent land is approximately 18 feet lower than the existing roadway elevation. Although water quality and sediment-control BMPs will be implemented during construction, the proximity and amount of disturbance poses a high risk for discharge of sediment or pollutants during construction. Based on the proximity (10 feet) of this VP to the new edge of pavement, there is also an increased risk for discharge of contaminants resulting from direct storm water runoff, which could degrade this habitat over time. Therefore, it is anticipated that the project may indirectly affect VP 72. VP 73 is located approximately 80 feet from the edge of construction and it is anticipated that with implementation of water quality and sediment-control BMPs, indirect effect on VP 73 can be avoided.	Indirect effect on VP 72
W's 9, 13, and 14	No	These vernal pools are within an interchange loop on the opposite side of SR 65 from proposed activities.	No effects

* Habitat features are depicted on Figures 2a through 2k.

Table 4-4. Acreage of Impacts on Vernal Pool Branchiopod Habitat

Habitat Type	Direct Impacts* (acres)	Indirect Impacts* (acres)
Vernal pools	0	0.612
Seasonal Wetlands	0.067	0.164
Total	**0.067**	**0.776****

* = For purposes of calculating impacts on vernal pool branchiopod habitat, the entire pool or wetland basin is considered affected even if disturbance would occur to only a portion of the resource.

** = Of the 0.776 acre of indirect impacts, 0.624 acre of habitat is within preserves that were established to mitigate for other projects. None of the habitat directly affected is within a preserve.

Permanent loss of suitable and potentially occupied habitat for vernal pool fairy shrimp is considered an adverse impact on the species. Therefore, the proposed project is likely to adversely affect vernal pool fairy shrimp. A biological assessment has been prepared to support ESA Section 7 consultation between Caltrans and USFWS for project effects on vernal pool fairy shrimp.

4.3.1.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid or minimize indirect impacts on vernal pool fairy shrimp habitat that is located outside the limits of disturbance. Additional conservation measures or conditions of approval may be required as part of ESA incidental take authorization.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 7: Avoid and Minimize Potential Indirect Impacts on Habitat for Vernal Pool Branchiopods and Other Vernal Pool Species

Please refer to the discussion of Measure 7 in Section 4.2.2.1.

4.3.1.4 Compensatory Mitigation

Measure 8: Compensate for Direct and Indirect Impacts on Vernal Pool Branchiopod Habitat

The project proponent will compensate for direct and indirect impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp (vernal pool branchiopod) habitat by preserving suitable habitat at an approved mitigation bank or through an approved Habitat Conservation Plan, such as the Placer County Conservation Plan. If compensation is accomplished through a mitigation bank, effected habitat will be mitigated 2:1 (2 acres preserved for every 1 acre affected for effects not within an established preserve and 4:1 (4 acres preserved for every 1 acre affected). Because vernal pool habitat within established preserves was used to mitigate for other permitted projects that required 2:1 mitigation, the prior mitigation obligation was added to the project's mitigation requirement to total 4:1. Compensatory mitigation will be acquired through the purchase of appropriate habitat credits at a USFWS-approved mitigation or conservation bank. This mitigation is in addition to mitigation for USACE-jurisdictional wetland habitats as described above for Measure 5. Mitigation and conservation banks in Placer County that sell vernal pool branchiopod preservation credits include Laguna Terrace East Conservation Bank, Twin Cities Conservation Bank and Preserve, Locust Road Mitigation Bank, and Toad Hill Ranch Mitigation Bank, and Western Placer Schools Conservation Bank. Table 4-5 lists the proposed mitigation acreage for vernal pool branchiopod habitat based on the current project design.

Table 4-5. Compensation for Direct and Indirect Impacts on Vernal Pool Branchiopod Habitat

Impact Type	Impact Acreage*	Compensation Ratio	Mitigation Acreage to be Preserved
Directly affected not in a preserve	0.067**	2:1 preservation	0.134 acre
Indirectly affected not in a preserve	0.152	2:1 preservation	0.304 acre
Indirectly affected in a preserve***	0.624	4:1 preservation	2.496 acre
Total Mitigation	**2.934 acres**		

* = For purposes of calculating impacts on vernal pool branchiopod habitat, the entire pool or wetland basin was considered affected even if disturbance would occur to only a portion of the resource.

** = Directly affected habitat is limited to seasonal wetland; no vernal pools will be directly affected.

*** = Habitat within preserves was used as mitigation for a previously permitted project.

4.3.1.5 Cumulative Impacts

Other non-federal projects that are likely to affect vernal pool fairy shrimp habitat within the greater Placer County region include private development, primarily west of SR 65. The proposed project's incremental loss or disturbance of vernal pool fairy shrimp habitat within this region would be very small (0.067 acre of direct loss and 0.776 acre of indirect impacts). Implementation of Measure 8 would compensate for this small amount of habitat loss and disturbance at up to a

4:1 ratio; therefore impacts on vernal pool fairy shrimp are not expected to be cumulatively considerable.

4.3.2 Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp is a federally listed endangered species. This species is a California Central Valley endemic species, with the majority of populations in the Sacramento Valley. This species has also been reported from the Sacramento–San Joaquin River Delta east of San Francisco Bay and from scattered localities in the San Joaquin Valley from San Joaquin to Madera Counties (Rogers 2001:1002).

Vernal pool tadpole shrimp generally take 38 days to mature and typically reproduce in about 54 days (Helm 1998:133). Vernal pool tadpole shrimp occur in a wide variety of seasonal habitats, including vernal pools, ponded clay flats, alkaline pools, ephemeral stock tanks, and roadside ditches (Helm 1998:137–138; Rogers 2001:1002–1005). This species is typically found at the highest concentrations in playa pools, large deep vernal pools, and winter lakes (greater than 100 acres) but have also been found in very small (less than 25 square feet) ephemeral pools (Helm 1998:134–138; Rogers 2001:1002–1005). The species' presence in very small pools is believed to be a result of wash down from larger source pools (Helm pers. comm.). Vernal pool tadpole shrimp have been observed in a variety of habitats ranging from clear, vegetated vernal pools to highly turbid alkali scald with variable depths and volumes of water during the wet cycle (Helm 1998:134–138). Vernal pool tadpole shrimp are uncommon even where suitable habitats occur. During surveys conducted in 95 areas across 27 counties within northern and central California, vernal pool tadpole shrimp were detected in only 17% of over 5,000 wetlands sampled (Helm 1998).

4.3.2.1 Survey Results

Based on the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (U.S. Fish and Wildlife Service 2005), the BSA lies within the Western Placer County core area within the Southeastern Sacramento Valley vernal pool region but does not overlap with designated critical habitat for vernal pool tadpole shrimp (70 FR 46924 and 71 FR 7117). Within Placer County, there have been two documented populations of vernal pool tadpole shrimp within surveyed habitats. The species has been detected in as many as 10 vernal pools at the Lincoln Communication Facility, now part of the Western Placer Schools Conservation Bank, in 1994, 1995, 1996, 2006, 2009, 2011, and 2013 (U.S. Fish and Wildlife Service 2007; California Department of Fish and Wildlife 2016), located approximately 5 miles northwest of the BSA. The second known population is on the Woodcreek Oaks City Preserve (documented within a created vernal pool in 1993 and 1995) located just north of Pleasant Grove Boulevard (ECORPS Consulting 2011, CNDDB 2016), approximately 2 miles southwest of the BSA. A vernal pool

tadpole shrimp cyst was also detected in 2002 from a roadside wetland located along Industrial Avenue approximately 800 feet west of the northern end of the BSA (California Department of Fish and Wildlife 2016). It is presumed that the cyst may have been transported into this habitat from nearby wetlands that have since been filled by a housing development.

Vernal pools throughout the BSA and several seasonal wetlands along northbound and southbound SR 65 just north of Blue Oaks Boulevard (Figure 2h) represent potential habitat for vernal pool tadpole shrimp. These features range in size from 0.001 acre to 0.430 acre. The larger, deeper pools/wetlands are likely to provide sufficient ponding duration to support the lifecycle of tadpole shrimp (minimum 38 days for adult maturation). Small or shallow pools/wetlands with a flashy hydroperiod have a low likelihood to support vernal pool tadpole shrimp but were still considered potential habitat in the absence of species survey data. The remaining seasonal wetlands in the BSA hold water for shorter periods of time than vernal pools and therefore are not expected to have a hydroperiod that would support vernal pool tadpole shrimp reproduction. Therefore, these wetland features were not considered to be suitable habitat for vernal pool tadpole shrimp. Potential habitat for vernal pool tadpole shrimp is considered the same as habitat for vernal pool fairy shrimp and is depicted as vernal pool branchiopod habitat on Figures 2a through 2k.

4.3.2.2 Project Impacts

Based on the known presence of vernal pool tadpole shrimp in the project vicinity (within 1 mile of the BSA), it was determined that vernal pool tadpole shrimp may occur in suitable habitat (deep vernal pools and seasonal wetlands) within the BSA. For purposes of this impact analysis, vernal pools and seasonal wetlands in the BSA that support suitable habitat characteristics are presumed to be occupied by vernal pool tadpole shrimp. The project's direct and indirect effects on vernal pool tadpole shrimp are expected to be the same as those described for vernal pool fairy shrimp (in Section 4.3.1.2). Tables 4-3 and 4-4 summarize the direct and indirect impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat (collectively referred to as vernal pool branchiopod habitat).

Loss or disturbance of suitable and potentially occupied habitat for vernal pool tadpole shrimp is considered an adverse impact on the species. Therefore, the proposed project is ***likely to adversely affect*** vernal pool tadpole shrimp. A biological assessment has been prepared to support ESA Section 7 consultation between Caltrans and USFWS for project effects on vernal pool tadpole shrimp.

4.3.2.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid and minimize indirect impacts on vernal pool tadpole shrimp habitat that is located outside of the limits of disturbance. Additional

conservation measures or conditions of approval may be required as part of ESA incidental take authorization.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources
Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel
Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats
Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters
Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 7: Avoid and Minimize Potential Indirect Impacts on Habitat for Vernal Pool Branchiopods and Other Vernal Pool Species
Please refer to the discussion of Measure 7 in Section 4.2.2.1.

4.3.2.4 Compensatory Mitigation

To mitigate for potential adverse effects on vernal pool tadpole shrimp habitat, the project proponent will provide the following compensation.

Measure 8: Compensate for Direct and Indirect Impacts on Vernal Pool Branchiopod Habitat
Please refer to the discussion of Measure 8 in Section 4.3.1.4.

4.3.2.5 Cumulative Impacts

Other non-federal projects that are likely to affect vernal pool tadpole shrimp habitat within the greater Placer County region include private development, primarily west of SR 65. The proposed project's incremental loss or disturbance of vernal pool tadpole shrimp habitat within this region would be very small (0.067 acre of direct loss and 0.776 acre of indirect impacts). Implementation of Measure 8 would compensate for this small amount of habitat loss and disturbance at up to a 4:1 ratio; therefore impacts on vernal pool tadpole shrimp are not expected to be cumulatively considerable.

4.3.3 Western Spadefoot Toad

The western spadefoot toad is designated as a state species of special concern. In California, western spadefoot toads historically ranged throughout the Central Valley and Coast Ranges and the coastal lowlands from San Francisco Bay southward to Mexico (Jennings and Hayes 1994:94). The species has experienced severe population declines in the Sacramento Valley and a reduced density of populations in the eastern San Joaquin Valley (U.S. Fish and Wildlife Service 2005:II-223).

Western spadefoot toads typically inhabit lowland habitats such as washes, floodplains of rivers, alluvial fans, playas, and alkali flats. This species also may be found in the foothills and mountain regions. Western spadefoot toads prefer areas of open vegetation and short grasses where the soil is sandy or gravelly (U.S. Fish and Wildlife Service 2005:II-230). They are found in the valley and foothill grasslands, open chaparral, and pine-oak woodlands. Spadefoot toads are primarily terrestrial, and require upland habitats for feeding and for burrowing during their long dry-season dormancy (U.S. Fish and Wildlife Service 2005:II-231). They require wetlands for reproduction and have been observed in a variety of permanent and temporary wetlands, including rivers, creeks, pools in intermittent streams, vernal pools, and temporary rain pools (U.S. Fish and Wildlife Service 2005:II-231). Larval development can be completed in 3 to 11 weeks but has been known to take up to 79 days from hatching to metamorphosis (U.S. Fish and Wildlife Service 2005:II-227). Vernal pools and other temporary wetlands may be optimal for breeding due to the absence or reduced abundance of predators (U.S. Fish and Wildlife Service 2005:II-231). Little is known regarding the distance that western spadefoot toads disperse from aquatic breeding areas. Current research on amphibian conservation suggests that average habitat utilization falls within 1,207 feet of aquatic habitats (U.S. Fish and Wildlife Service 2005:II-231).

4.3.3.1 Survey Results

Within the BSA, perennial streams, emergent wetlands, seasonal wetlands, and vernal pools provide suitable aquatic habitat for western spadefoot toad. Annual grassland in the vicinity of these aquatic resources provides upland habitat for adult spadefoots. Spadefoot toads are not expected to be present in disturbed/graded areas immediately adjacent to SR 65. The closest CNDDB occurrence for western spadefoot toad is a 1994 record from an emergent wetland located between the railroad tracks and Taylor Road, 0.75 mile southeast of the BSA (California Department of Fish and Wildlife 2016).

4.3.3.2 Project Impacts

Construction activities such as excavation, grading, and stockpiling of soil could fill, remove, or otherwise alter potential habitat for western spadefoot toad, or could result in their injury or mortality. Western spadefoot toads could also become entrapped in open trenches or other project

facilities. Construction associated with roadway and culvert expansion would result in permanent and temporary impacts on suitable aquatic habitat (perennial stream, emergent wetland, seasonal wetlands, and vernal pools) and temporary impacts on upland habitat (annual grassland) that could be used by spadefoot toads. Based on the proximity (within 1,200 feet) of annual grassland habitat to potential aquatic breeding habitat throughout the BSA, all annual grassland within the BSA is considered potential upland habitat for western spadefoot toad.

Table 4-6 summarizes the impacts of project activities on western spadefoot toad habitat.

Table 4-6. Impacts on Western Spadefoot Toad Habitat

Habitat	Temporary Impact (acres)	Permanent Impact (acres)
Aquatic habitat	0.751	1.027
Upland habitat	1.251	1.862

Note: For purposes of calculating aquatic and upland impacts, aquatic habitat for western spadefoot toad includes perennial stream, emergent wetland, seasonal wetland, and vernal pool; and upland habitat consists of annual grassland.

4.3.3.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid and minimize impacts on western spadefoot toad.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 9: Provide Escape Ramps for Wildlife and Inspect Pits and Trenches Daily

To prevent inadvertent entrapment of western spadefoot toads during construction in grassland habitat, all excavated, steep-walled holes, and trenches more than 6 inches deep, will be provided with one or more escape ramps constructed of earth fill or wooden planks and will be inspected prior to being filled to ensure that no wildlife are present. In the event that holes or pits cannot be

ramped, they will be properly covered at night to prevent access by wildlife. Coverings may consist of wooden boards, metal plates, or tarps held down by soil or rocks, with no openings between the cover and the ground. The biological monitor or a designated construction crew member will inspect covered and open trenches and pits each morning and evening during construction to look for spadefoot toads or other wildlife that may have become trapped. It should be noted that spadefoot toads can fall into a trench or pit through the excavated wall of the trench or pit; therefore, these areas must be inspected daily, even if covered.

4.3.3.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.3.3, potential impacts on western spadefoot toad will be minimized to the extent practical. No compensatory mitigation is required.

4.3.3.5 Cumulative Impacts

With implementation of measures prescribed to avoid or minimize potential impacts on western spadefoot toad, the proposed project would not contribute to cumulative impacts on the species.

4.3.4 Northern Western Pond Turtle

Northern western pond turtle (also called western pond turtle or Pacific pond turtle) is a California species of special concern. Pond turtles occur throughout much of California except for east of the Sierra-Cascade crest and desert regions (with the exception of the Mojave River and its tributaries) (Zeiner et al. 1988). Aquatic habitats used by northern western pond turtles include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas (Stebbins 2003). Pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris (Jennings et al. 1992:11). They move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994). Pond turtles have been observed several hundred meters from aquatic habitat (Pilliod et al. 2013). Throughout their range, the furthest distance that pond turtles have been reported to travel from water is between approximately 500 and 1,500 feet (Pilliod et al. 2013) Where permanent water is available and winter temperatures are mild, for example in the southern portion of the range and along the central coast, western pond turtles can be active year-round. In colder regions and where permanent water is not reliable or aquatic habitat is associated with streams and rivers, pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992, Pilliod et al. 2013).

4.3.4.1 Survey Results

Within the BSA, Orchard Creek and Pleasant Grove Creek and their associated tributaries represent suitable aquatic habitat for northern western pond turtle. Annual grassland within the BSA is located within 1,500 feet of potential aquatic habitat and therefore could be used as upland

nesting and overwintering sites by pond turtles if they are present. No northern western pond turtles were observed within the BSA during the 2015 wildlife surveys.

4.3.4.2 Project Impacts

Construction associated with roadway and culvert expansion at and adjacent to Orchard Creek, Pleasant Grove Creek, and associated tributaries would result in permanent and temporary impacts on suitable aquatic and upland habitat for northern western pond turtle. In-water work within and near perennial stream habitat could cause entrapment of pond turtles, resulting in their injury or mortality. Additionally, pond turtles and nests containing hatchlings or eggs could be crushed and killed during the movement of construction equipment in upland habitats (i.e., annual grassland, oak woodland, and riparian forest)—typically within 1,500 feet of aquatic sites.

Table 4-7 summarizes the impacts of project construction on northern western pond turtle habitat.

Table 4-7. Impacts on Northern Western Pond Turtle Habitat

Habitat	Temporary Impact (acres)	Permanent Impact (acres)
Aquatic habitat	0.481	0.890
Upland habitat	1.063	1.751

Note: For purposes of calculating impacts on northern western pond turtle, aquatic habitat includes perennial stream and emergent wetland; and upland habitat consists of annual grassland within 1,500 feet of perennial streams.

4.3.4.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid or minimize impacts on northern western pond turtle.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 10: Conduct a Pre-Construction Survey for Northern Western Pond Turtle and Exclude Turtles from the Work Area

To avoid and minimize impacts on northern western pond turtles, the project proponent will retain a qualified wildlife biologist to conduct two separate pre-construction surveys: 2 weeks before and within 48 hours of disturbance in suitable aquatic and upland habitats. The survey objectives are to determine the presence or absence of pond turtles in the construction work area and, if necessary, to allow time for successful trapping and relocation. If possible, the surveys will be timed to coincide with the time of day and year when turtles are most likely to be active (during the cooler part of the day from 8:00 a.m. to 12:00 p.m. during spring, summer, and late summer). Prior to conducting presence/absence surveys, the biologist will locate the microhabitats for turtle basking (logs, rocks, and brush thickets) and determine a location to quietly observe turtles.

Each aquatic survey will include a 15-minute wait time after arriving onsite to allow startled turtles to return to open basking areas. The survey will consist of a minimum 15-minute observation time per area where turtles could be observed. A survey of adjacent upland habitat also will be conducted to look for adult turtles and active nests.

If turtles are observed during a survey and they cannot be avoided, they will be either hand-captured or trapped and relocated outside the construction area to appropriate aquatic habitat by a biologist with a valid memorandum of understanding from CDFW and as determined during coordination with CDFW. If an active turtle nest is found, the biologist will coordinate with CDFW to determine the appropriate avoidance measures.

4.3.4.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.4.3, potential impacts on northern western pond turtle will be avoided or minimized. No compensatory mitigation is required.

4.3.4.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on northern western pond turtle, the proposed project would not contribute to cumulative effects on the species.

4.3.5 Burrowing Owl

Western burrowing owl is a state species of special concern and is protected during its nesting season under the MBTA and California Fish and Game Code Section 3503.5. Burrowing owl is a ground-nesting raptor that typically uses the burrows of other species, such as ground squirrels, for nesting, protection, and shelter. Burrowing owls are a year-round resident in a variety of grasslands, as well as in scrublands with a low density of trees and shrubs and low-growing vegetation. Burrowing owls that nest in the Central Valley may winter elsewhere. The primary

habitat requirement of the burrowing owl is burrows appropriate for nesting. Burrowing owls usually nest in abandoned burrows, although they have been known to construct their own burrows in softer soils. In urban and agricultural areas, burrowing owls often use artificial burrows, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement, particularly pipes. This owl breeds from March through August and is most active while hunting during dawn and dusk (California Department of Fish and Game 1995:2, 3).

4.3.5.1 Survey Results

Annual grassland in the BSA along SR 65 represents suitable wintering and breeding habitat for burrowing owls. Although the BSA supports abundant small rodent activity (e.g., mice, vole, and pocket gopher), ground squirrel burrows typically used by breeding burrowing owls are absent from the BSA, so there is a low probability that burrowing owls would nest onsite. Existing culverts and rock piles that occur throughout the BSA provide refuge and escape cover for wintering owls. One burrowing owl was observed during the February 2015 field survey within rock armoring of a human-made ditch south of Twelve Bridges Drive, just outside the BSA (Figure 2h).

4.3.5.2 Project Impacts

Widening the existing new roadway within annual grassland habitat in the BSA would result in the loss of potential wintering and breeding habitat for burrowing owls. Additionally, construction-generated noise has the potential to indirectly affect burrowing owls nesting near construction activities. Disturbing burrows with active nests and indirect construction disturbance (i.e., noise, increased human presence) during the breeding season may result in nest abandonment and subsequent loss of eggs or young. Disturbance or loss of burrowing owls would violate the MBTA and the California Fish and Game Code.

Table 4-8 summarizes the impacts of the proposed project on burrowing owl habitat.

Table 4-8. Impacts on Burrowing Owl Habitat

Habitat	Temporary (acres)	Permanent (acres)
Wintering and Breeding Habitat	1.251	1.862

Note: For purposes of calculating impacts on burrowing owl, wintering and breeding habitat consists of annual grassland.

4.3.5.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid or minimize impacts on burrowing owl.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 11: Conduct Pre-Construction Surveys for Burrowing Owl and Establish Exclusion Zones, if Necessary

A qualified biologist will conduct two separate pre-construction surveys for burrowing owl: no less than 14 days prior to, and within 48 hours of, initiating ground-disturbing activities within suitable habitat. The pre-construction survey area will encompass the designated work area (including permanent and temporary impact areas) and a 500-foot buffer around this area where access is permitted. To the maximum extent feasible (i.e., where the construction footprint can be modified), construction activities within 500 feet of active burrowing owl burrows will be avoided during the nesting season (February 1 to August 31).

If an active burrow is identified near a proposed work area and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends a minimum of 250 feet around the burrow. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow.

If the designated no-activity zone for breeding or non-breeding burrowing owls cannot be established, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in coordination with CDFW, recommend a smaller buffer (if possible) that still minimizes the potential to disturb the owls (and is deemed to still allow reproductive success during the breeding season). The site-specific buffer will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities.

If burrowing owls are present within the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1 through January 31), passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used instead of trapping. Passive relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, coordinating with CDFW, determines through site surveillance that the burrow is not occupied by burrowing owl adults and/or young. Passive relocation will be accomplished

by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method). The one-way doors will be left in place for a minimum of 1 week and will be monitored daily to ensure that the owls have left the burrow. The burrow will be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow during burrow excavation.

4.3.5.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.5.3, potential impacts on burrowing owls will be avoided or minimized. No compensatory mitigation is required.

4.3.5.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on burrowing owl and because only a small area of habitat would be permanently affected (1.862 acres), the proposed project's cumulative contribution to impacts on the species are not considered cumulatively considerable.

4.3.6 Swainson's Hawk

Swainson's hawk is a state-listed threatened species. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation (California Department of Fish and Game 1992:41). The majority of Swainson's hawks winter in South America, although some winter in the United States. Swainson's hawks arrive in California in early March to establish nesting territories and breed (California Department of Fish and Game 1994). They usually nest in large, mature trees. Most nest sites (87%) in the Central Valley are found in riparian habitats (Estep 1989:35), primarily because trees are more available there. Swainson's hawks also nest in mature roadside trees and in isolated trees in agricultural fields or pastures. The breeding season is from March through August (Estep 1989:12, 35).

4.3.6.1 Survey Results

Within the BSA, potential nesting habitat for Swainson's hawk is limited to scattered trees along existing roadways and streams. The closest documented Swainson's hawk nest site is located approximately 1.5 mile west of the BSA within riparian habitat along Pleasant Grove Creek (California Department of Fish and Wildlife 2016). Annual grassland in the BSA represents suitable foraging habitat for Swainson's hawk, and Swainson's hawks were observed foraging over grassland habitat in and adjacent to the BSA during April 2014 surveys conducted for a nearby project along SR 65 (ICF International 2014). Graded/disturbed areas within the BSA were not considered to be suitable foraging habitat for Swainson's hawk because most of these

areas were in active construction at the time of the February 2015 field surveys or are routinely disturbed and are not expected to support prey populations.

4.3.6.2 Project Impacts

Proposed project activities are not expected to remove or otherwise disturb any potential nest trees because none are present within the permanent impact area. However, construction-generated noise and activity has the potential to indirectly affect Swainson's hawks if they were nesting near project activities. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Disturbance or loss of an active Swainson's hawk nest would violate CESA, the MBTA, and California Fish and Game Code Section 3503.5.

Roadway construction also could result in an impact on Swainson's hawk through temporary and permanent loss of annual grassland that provides suitable foraging habitat. Because only a small area (1.862 acres) of suitable foraging habitat occurring as a narrow strip of grassland habitat along an existing roadway would be permanently lost, the proposed project is not expected to substantially decrease the available foraging habitat for locally nesting Swainson's hawks and would not result in an adverse impact on foraging Swainson's hawks.

Table 4-9 summarizes the impacts of the proposed project on Swainson's hawk habitat.

Table 4-9. Impacts on Swainson's Hawk Habitat

Habitat	Temporary (acres)	Permanent (acres)
Nesting Habitat	0	0
Foraging Habitat	1.251	1.862

Note: For purposes of calculating impacts on Swainson's hawk, foraging habitat consists of annual grassland.

4.3.6.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on Swainson's hawk and will avoid violation of CESA, the MBTA, and the California Fish and Game Code.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 12: Conduct Pre-Construction Surveys for Swainson's Hawk and Establish Exclusion Zones, if Necessary

If construction activities will occur during the nesting season for Swainson's hawk (generally March through August), the project proponent will retain a qualified wildlife biologist with knowledge of Swainson's hawk to conduct nesting surveys before the start of construction.

Surveys will be conducted by the qualified biologist no more than 1 month prior to ground disturbance that is to occur during the nesting season (March 1 through August 31). Surveys will be conducted in accordance with the Swainson's Hawk Technical Advisory Committee's methodology (May 31, 2000) or according to updated methodologies issued by CDFW. According to current guidelines, the biologist will inspect all suitable nest trees within 0.5 mile of proposed construction. If surveys conclude that a Swainson's hawk nest(s) is present within the survey area, and is occupied, the project will adopt the following minimization measures.

- During the nesting season (March 1 through August 31), project activities near an occupied nest or nests under construction will be prohibited to prevent nest abandonment. Because project activities would occur along an existing highway and because noise disturbances from project construction will generally be similar to the existing level of noise disturbances, a minimum 500-foot no-disturbance buffer will be established between an active nest and project activities that do not include pile driving. Where pile driving activities are conducted (i.e., at Pleasant Grove Creek), a minimum 0.25-mile buffer will be established. If site-specific conditions or the nature of the activity indicate that a smaller buffer could be used, the biologist and the project proponent will coordinate with CDFW to determine the appropriate buffer size.
- If young fledge prior to September 1 and are not continuing to use the nest tree, project activities can proceed without further restrictions. A qualified biologist will survey the nest to establish whether the young have fledged and determine whether the young are foraging independently or are still being fed by the parents at the nest tree.
- Nest trees will not be disturbed or removed. If a nest tree (any tree that has an active nest in the year the impact is to occur) must be removed, tree removal will occur only between September 1 and February 28.

4.3.6.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.6.3, direct impacts on Swainson's hawk will be avoided or minimized. The loss of a small area of potential foraging habitat (1.862 acres) occurs as a narrow strip of grassland along an existing roadway and is not expected to substantially reduce the available foraging habitat for Swainson's hawks nesting in the project

region (within 10 miles) given that there are large areas of annual grassland within open space preserves adjacent to the project. Therefore, the project is not expected to adversely affect locally nesting hawks and no compensatory mitigation is required.

4.3.6.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on Swainson's hawk and because only a small area of foraging habitat (annual grassland) would be permanently affected (1.862 acres), the proposed project's cumulative contribution to impacts on the species are not considered cumulatively considerable.

4.3.7 White-Tailed Kite

White-tailed kite is a state species of special concern and is designated as fully protected under California Fish and Game Code Section 3511. White-tailed kites occur in coastal and valley lowlands in California. They generally inhabit low-elevation grassland, savannah, oak woodland, wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands.

4.3.7.1 Survey Results

Within the BSA, scattered trees provide potential nesting habitat for white-tailed kite. The closest documented white-tailed kite nest site is approximately 2.0 miles west and southwest of the BSA along Pleasant Grove Creek (California Department of Fish and Wildlife 2016). Annual grassland in the BSA represents suitable foraging habitat for white-tailed kite. No white-tailed kites were observed in the BSA during the February 2015 wildlife survey; however, the species has been previously observed foraging in open grassland habitat along SR 65 adjacent to the BSA (ICF International 2014).

4.3.7.2 Project Impacts

Proposed project activities are not expected to remove or otherwise disturb any potential nest trees for white-tailed kite because none are present within the permanent impact area. However, construction-generated noise and activity has the potential to indirectly affect white-tailed kites nesting near project activities. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Disturbance or loss of an active white-tailed kite nest would violate the MBTA and California Fish and Game Code Sections 3503.5 and 3511.

Roadway construction also could result in indirect impacts on white-tailed kite through temporary and permanent loss of grassland that provides suitable foraging habitat. Because only a small area of suitable foraging habitat would be permanently lost, the proposed project is not expected to affect white-tailed kites and would not result in an adverse impact on foraging white-tailed kite.

Table 4-10 summarizes the impacts of the proposed project on white-tailed kite.

Table 4-10. Impacts on White-Tailed Kite Habitat

Habitat	Temporary (acres)	Permanent (acres)
Nesting Habitat	0	0
Foraging Habitat	1.251	1.862

Note: For purposes of calculating impacts on white tailed kite foraging habitat consists of annual grassland.

4.3.7.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on white-tailed kite and will avoid violation of the MBTA and the CFGC.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 13: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors

Where vegetation removal is required to construct project features, the project proponent will conduct this activity during the non-breeding season for migratory birds and raptors (generally between September 1 and February 28), to the extent feasible.

If construction activities (including vegetation removal) cannot be confined to the non-breeding season, the project proponent will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. The migratory bird and raptor nesting surveys will be conducted in conjunction with the surveys previously identified for burrowing owl and Swainson's hawk (*Measure 11: Conduct Pre-Construction Surveys for Burrowing Owl and Establish Exclusion Zones, if Necessary* and *Measure 12: Conduct Pre-*

Construction Surveys for Swainson's Hawk) and will include a minimum of two separate surveys to look for active migratory bird and raptor nests. Surveys will include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the construction area. In addition, a 500-foot area around the construction area will be surveyed for nesting raptors and a 100-foot area around the construction area will be surveyed for song birds. One survey should be conducted no more than 14 days prior to construction and the second survey should be conducted within 48 hours prior to the start of construction or vegetation removal. If no active nests are detected during these surveys, no protective measures are required.

If an active nest is found in the survey area, a no-disturbance buffer will be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the nesting substrate (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with USFWS and/or CDFW, and will depend on the level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species but will be established a minimum of 50 feet from active construction.

4.3.7.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.7.3, potential impacts on white-tailed kite will be avoided or minimized. No compensatory mitigation is required.

4.3.7.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on white-tailed kite, the proposed project is not expected to contribute to cumulative effects on the species.

4.3.8 Northern Harrier

Northern harrier is a state species of special concern and is protected during its nesting season under the MBTA and California Fish and Game Code Section 3503.5. Northern harrier is a year-round resident throughout the Central Valley and often is associated with open grassland habitats and agricultural fields. Nests are found on the ground in tall, dense, herbaceous vegetation (MacWhirter and Bildstein 1996). Northern harrier nests from April to September, with peak activity in June and July. The breeding population has been reduced, particularly along the southern coast, because of the destruction of wetland habitat, native grassland, and moist meadows and from burning and plowing of nesting areas during early stages of breeding.

4.3.8.1 Survey Results

Annual grassland, emergent wetland, and seasonal wetland in the BSA support tall upland and wetland vegetation that could be used by northern harriers as substrate for establishing nest sites. Annual grassland throughout the BSA is considered suitable for foraging harriers. Northern harrier was observed foraging in the BSA during the February 2015 field survey.

4.3.8.2 Project Impacts

Construction activities associated with roadway improvements in annual grassland and emergent wetland habitat could disturb an active northern harrier nest, if present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance or loss of a northern harrier nest would violate the MBTA and California Fish and Game Code Section 3503.5.

Table 4-11 summarizes the impacts of the proposed project on northern harrier habitat.

Table 4-11. Impacts on Northern Harrier Habitat

Habitat	Temporary (acres)	Permanent (acres)
Nesting habitat	1.983	2.857
Foraging habitat	1.251	1.862

Note: For purposes of calculating impacts on northern harrier, nesting habitat consists of annual grassland, emergent wetland, and seasonal wetland and foraging habitat consists of annual grassland.

4.3.8.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on northern harrier, and will avoid violation of the MBTA and the California Fish and Game Code.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 13: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors

Please refer to the discussion of Measure 13 in Section 4.3.7.3.

4.3.8.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.8.3, potential impacts on northern harrier will be avoided or minimized. No compensatory mitigation is required.

4.3.8.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on northern harrier, the proposed project is not expected to contribute to cumulative effects on northern harrier.

4.3.9 Tricolored Blackbird

Tricolored blackbird was designated by the California Fish and Game Commission as a candidate for state listing as threatened or endangered under CESA on December 10, 2015. This designation triggers a 12-month period during which CDFW will conduct a status review to inform the Commission's subsequent decision on whether to formerly list the species as threatened or endangered. As a candidate species, the tricolored blackbird receives the same legal protection afforded to an endangered or threatened species. The species is also protected during its nesting season under the MBTA and California Fish and Game Code Section 3503.5. Tricolored blackbird is a highly colonial species that is largely endemic to California. Tricolored blackbird breeding colony sites require open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. Tricolored blackbird breeding colonies occur in freshwater marshes dominated by tules and cattails, in Himalayan blackberries (*Rubus armeniacus*), and in silage and grain fields (Beedy and Hamilton 1997:3–4). The breeding season is from late February to early August (Beedy and Hamilton 1999). Tricolored blackbird foraging habitats in all seasons include annual grasslands, dry seasonal pools, agricultural fields (such as large tracts of alfalfa with continuous mowing schedules, and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also forage occasionally in riparian scrub habitats and along marsh borders. Weed-free row crops and intensively managed vineyards and orchards do not serve as regular foraging sites. Most tricolored blackbirds forage within 3 miles of their colony sites, but commute distances of up to 8 miles have been reported (Beedy and Hamilton 1997:5).

4.3.9.1 Survey Results

Within the BSA, emergent wetland and riparian scrub vegetation along Orchard Creek and Pleasant Grove Creek provide potential nesting substrate for tricolored blackbird. The closest documented nesting sites are along Orchard Creek 0.35 mile west of the BSA (observed in dense blackberry bramble in June 2014 [ICF International 2014]) and within dense bulrush at a small pond 0.75 mile west of the BSA (Occurrence #242 [California Department of Fish and Wildlife

2016]). Grassland habitat within the BSA and large tracts of open space grasslands west of the BSA represent suitable foraging habitat for tricolored blackbirds.

4.3.9.2 Project Impacts

Construction activities within and adjacent to emergent wetland and riparian scrub habitat could disturb nesting tricolored blackbirds if an active colony is located in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance or loss of a tricolored blackbird nest would violate the MBTA and California Fish and Game Code Section 3503.

Roadway construction also could result in impacts on tricolored blackbird through temporary and permanent loss of grassland and seasonal wetlands that provide potential foraging habitat.

Table 4-12 summarizes the impacts of the proposed project on tricolored blackbird.

Table 4-12. Impacts on Tricolored Blackbird Habitat

Habitat	Temporary (acres)	Permanent (acres)
Nesting Habitat	0.491	1.028
Foraging Habitat	1.521	1.999

Note: For purposes of calculating impacts on tricolored blackbird, nesting habitat consists of emergent wetland and riparian scrub, and foraging habitat consists of annual grassland and seasonal wetland.

4.3.9.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on tricolored blackbird, and will avoid violation of the MBTA and California Fish and Game Code.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 13: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors

Please refer to the discussion of Measure 13 in Section 4.3.7.3.

4.3.9.4 Compensatory Mitigation

With implementation of avoidance and minimization measures described in Section 4.3.9.3 and compensation for loss of emergent wetland and riparian scrub (potential nesting habitat) described in Section 4.1.1.4, potential impacts on tricolored blackbird will be avoided or minimized. No additional compensatory mitigation is required.

4.3.9.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on tricolored blackbird, the proposed project is not expected to contribute to cumulative effects on the species.

4.3.10 California Black Rail

California black rail is a state-designated threatened species and is fully protected under California Fish and Game Code Section 3511. California black rail is a subspecies of black rail with extant populations in the San Francisco Bay area, Sacramento-San Joaquin Delta, a few locations in coastal southern California, the Salton Sea, and the lower Colorado River area. This subspecies was recently discovered in the Sierra foothills in 1994 (Aigner et al. 1995). In the Sierra foothills, black rail is a resident (year-round) species that occupies perennial marshes supporting dense vegetation cover and persistent shallow-water conditions (less than 1.2 inches) (Richmond et al. 2010). Within this region, black rails are typically found in relatively small (median 1.63 acres and minimum 0.25 acre), gently sloped and densely vegetated marsh habitats (Richmond et al. 2010). The breeding season for black rails is from late February through July (Eddleman et al. 1994); for the purpose of this natural environment study, the black rail breeding season is considered to be February 15 through July 31.

4.3.10.1 Survey Results

Potential habitat for resident California black rails is present within extensive emergent wetland and seasonal wetland vegetation along the two branches of Orchard Creek and along Pleasant Grove Creek in the northern portion of the BSA, east of SR 65 (Figures 2a, 2b, 2c, 2f and 2g). No black rails have been previously detected in the BSA; however, the species is elusive and is difficult to detect even when it is present. Extensive surveys of suitable marsh habitat across 14 counties (including Placer) were conducted between 1994 and 2006 to identify populations of black rails within the Sierra Nevada foothills and portions of the Sacramento Valley (Richmond et. al. 2008). A total of 164 new populations were detected in the Sierra foothills during this study, including one population in Placer County within the Clover Valley area of Rocklin (CNDDB occurrence #134 [California Department of Fish and Wildlife 2016]). California black rails have also been detected at Doty Ravine near the City of Lincoln in 2005 (CNDDB occurrence #210 [California Department of Fish and Wildlife 2016]).

Black rails in the Sierra foothills are considered a metapopulation (a population geographically separate from the greater population of rails) that commonly moves between nearby sites (Richmond et al. 2008), especially in areas where hydrologic and vegetation conditions may change throughout the year or between years (i.e., changes in irrigation flows and excessive grazing by cattle). Because black rails are known to occur along Clover Valley Creek approximately 4 miles east of the BSA and because potential habitat is present within the BSA, there is potential for short-term or long-term residency of California black rails within the BSA.

4.3.10.2 Project Impacts

Roadway construction that encroaches on emergent wetland and seasonal wetland habitat along northbound SR 65 in the vicinity of Orchard Creek and Pleasant Creek could result in the disturbance or loss of California black rails and nests containing eggs or chicks. Construction-generated noise and activity also have the potential to indirectly affect black rails nesting near project activities. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or fledglings. Because black rails are a resident species in the Sierra foothills region, they could be present within suitable habitat year-round. Project activities that result in the incidental loss of black rails or otherwise lead to nest abandonment would violate CESA, the MBTA, and California Fish and Game Code Sections 3503 and 3511.

Table 4-13 summarizes the impacts of the proposed project on California black rail habitat.

Table 4-13. Impacts on California Black Rail Habitat

Habitat	Temporary (acres)	Permanent (acres)
Nesting and Foraging Habitat	0.124	0.615

Note: For purposes of calculating impacts on California black rail, suitable nesting and foraging habitat is limited to emergent wetland and seasonal wetland along Orchard Creek and Pleasant Grove Creek.

4.3.10.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on California black rail and will avoid violation of CESA, the MBTA, and the California Fish and Game Code.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 14: Conduct Occupancy Surveys for California Black Rail and Implement Avoidance Measures, if Necessary

Prior to construction in or near suitable black rail habitat (emergent wetland and seasonal wetland along Orchard Creek and Pleasant Grove Creek), black rail occupancy surveys will be conducted no later than the summer of the year preceding construction. The surveys will be conducted within suitable habitat in the project footprint and up to 700 feet beyond the limits of disturbance where suitable habitat is present. Survey methods will generally follow those described in Richmond et al. 2008 for call-playback surveys, or other CDFW-approved survey methods. Surveys will be conducted by qualified biologist(s) approved by CDFW for black rail surveys.

A minimum of three call-playback surveys will be conducted at either sunrise or sunset between June 1 and August 30. The survey dates will be spaced at least 2 to 3 weeks apart and will include at least one sunset survey. Multiple surveys (3 or more) conducted during this period have shown to have a 99% probability of detection if the site is occupied (Richmond et al. 2008). The surveys will be conducted according to the following procedures.

- Sunrise surveys will begin at sunrise and conclude 75 minutes after sunrise (or until presence is detected).
- Sunset surveys will begin 75 minutes before sunset and conclude at sunset (or until presence is detected).
- Survey stations will be established every 120 feet within suitable habitat.
- A sequence of California black rail vocalization recordings of “ki-ki-krr” and “grr” will be played at each station.
- Playback sequence consists of 2 minutes of listening, 30 seconds of “ki-ki-krr” calls, 30 seconds of listening, followed by another 30 seconds each of “ki-ki-krr” calls and listening, 30 minutes of “grr” calls, 30 minutes of listening, followed by another 30 seconds each of “grr” calls and listening, ending with 2 minutes of listening.
- Move to next station if no detections.

If California black rail is not detected after completion of the pre-construction surveys, then the survey area will be considered unoccupied for a period of 1 year and no additional surveys or

mitigation would be required. If construction activities do not commence within 1 year from the completion of surveys then another round of surveys would be required.

If California black rail is detected in the survey area at any time during the pre-construction surveys, then surveys will cease and the site will be considered occupied. Because California black rail is a fully protected species under the California Fish and Game Code, CDFW cannot issue an incidental take permit under CESA. To avoid harming (i.e., nest abandonment, direct mortality) California black rails, the project proponent will coordinate with CDFW to assess which project activities have the potential to disturb black rails or their habitat and to develop appropriate measures to ensure that those activities avoid take of black rails. The project proponent will develop an avoidance strategy that includes, but is not limited to the following avoidance and minimization measures.

- Project activities must be conducted by methods that do not involve dewatering habitat where the rails are present.
- During the non-breeding season (September through March), construction will maintain a minimum 500-foot setback from occupied black rail habitat. If site-specific conditions or the nature of the activity indicate that a smaller buffer could be used, the biologist and the project proponent will coordinate with CDFW to determine the appropriate buffer size.
- To avoid occupied habitat outside the construction area, stakes with brightly colored flagging will be placed along the edges of suitable habitat for black rails, facing construction work areas or access routes (fencing is not proposed because installation could cause unnecessary disturbance and impede the movement of rails within the habitat). Signs will also be placed on stakes every 100 feet to denote the area as biologically sensitive habitat that must be avoided.
- A qualified biologist will conduct periodic monitoring visits (at least once a week) when construction activities will occur within 700 feet of occupied black rail habitat to ensure habitat is avoided and buffer distances are maintained.

4.3.10.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.10.3, potential impacts on California black rail will be avoided. The project proponent will also compensate for the permanent loss of emergent wetland and seasonal wetland habitat as described in Section 4.1.1.4 under *Measure 5: Compensate for the Placement of Fill into Wetlands*. No additional compensatory mitigation is proposed.

4.3.10.5 Cumulative Impacts

With implementation of measures prescribed to avoid potential impacts on California black rail, the proposed project is not expected to contribute to cumulative effects on the species.

4.3.11 Purple Martin and Other Structure-Nesting Migratory Birds

Purple martin is a state species of special concern and is protected during its nesting season under the MBTA and California Fish and Game Code Section 3503.5. Purple martin is broadly distributed throughout eastern North America and occurs locally in the Rocky Mountains, Sonoran Desert, Central Mexico, and Pacific Coast states and provinces (Shuford and Gardali 2008). The species summers in North America from mid-March to late September, breeding between May and August. It migrates to South America in the fall (September), and returns as an early spring migrant from its South American wintering grounds. Generally, purple martins inhabit open areas with an open water source nearby. Martins adapt well in and around people but are out-competed by starlings and sparrows in urban areas. Purple martins are colonial cavity nesters in abandoned woodpecker holes, human-made nest boxes, or cavities in other structures such as bridges and overpasses. Once established at a nest location, martins usually come back to the same site every year. The once widespread Central Valley nesting population is now restricted to a bridge-nesting population in the Sacramento region. Since 2004, this population has declined from 173 pairs to 70 pairs in 2009, a 60% decrease (Airola and Kopp 2009). The Sacramento area martin population includes one Placer County breeding pair first documented in 2007 (Kopp and Airola 2007).

Other non-special-status migratory birds that nest on existing bridge structures and were observed within the BSA include cliff swallows and black phoebe.

4.3.11.1 Survey Results

The only known nesting occurrence for purple martins in Placer County is from the SR 65 overcrossing at Taylor Road just south of the BSA (CNDDB occurrence #27 [California Department of Fish and Wildlife 2016]). Only one breeding pair has been previously documented—in a weep hole on the underside of the existing structure in 2007, in 2008, and then again in 2012. No purple martins were observed nesting at this location in 2013 and 2014 (Airola pers. comm. 2014).

Based on 2015 wildlife surveys, existing freeway overcrossing structures in the BSA support nesting habitat (i.e., weep holes) for purple martins. They also support other structure nesting sites (i.e., ledges and 90 degree angles) for non-special-status birds including swallows and black phoebe. Remnant swallow nests were observed on the underside of the bridge over Pleasant Grove Creek in the BSA (see photo 5 in Appendix E).

4.3.11.2 Project Impacts

Construction activities associated with new roadway construction and ramp reconstruction could disturb an active purple martin or other structure-nesting migratory bird nest. These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest

abandonment. Disturbance or loss of a purple martin nest, or that of another migratory bird, would violate the MBTA and California Fish and Game Code Section 3503.

The proposed project would not result in the loss of human-made nesting habitat for purple martin or other structure-nesting birds.

4.3.11.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on purple martin and other structure-nesting birds, and will avoid violation of the MBTA and the California Fish and Game Code.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 15: Modify Existing Structures during the Non-Breeding Season for Purple Martin and Other Structure-Nesting Migratory Birds or Implement Exclusion Measures to Deter Nesting

To avoid impacts on nesting purple martins, swallows, and other structure-nesting migratory birds that are protected under the MBTA and the California Fish and Game Code, the project proponent will modify existing structures after the conclusion of the bird nesting period (February 15 through August 31). Modification or disturbance of existing roadway structures after the nesting period has concluded is strongly preferred; however, if this is not possible, the project proponent will implement the following avoidance measures.

- Prior to the start of each phase of construction, the project proponent will hire a qualified wildlife biologist to inspect any aerial structure that would be modified or disturbed during the non-breeding season (September 1 through February 14). If nests are found and are determined to be inactive (abandoned), they may be removed.
- After inactive nests are removed and prior to construction that would occur between February 15 and August 31, the undersides of the portion of the structure to be modified or disturbed will be covered with a suitable exclusion material that will prevent birds from nesting (i.e., 0.5- to 0.75-inch mesh netting, plastic tarp, or other suitable material safe for wildlife). Portions of the existing structures containing weep holes that would be modified or disturbed

also will be covered or filled with suitable material to prevent nesting (i.e., fiberglass insulation, foam padding, and PVC/ABS caps). All weep holes connected to the same girder recess area would require installation of exclusion material. The project proponent will hire a qualified wildlife management specialist experienced with installation of bird exclusion materials to ensure that exclusion devices are properly installed and will avoid inadvertent entrapment of migratory birds. All exclusion devices will be installed before February 15 and will be monitored throughout the breeding season (typically several times a week). The exclusion material will be anchored so that swallows cannot attach their nests to the structures through gaps in the net.

- Exclusion devices will be installed consistent with bat exclusion measures (*Measure 19: Conduct Pre-Construction Surveys for Roosting Bats and Implement Protection Measures*) and in a manner that does not entrap day-roosting bats.
- As an alternative to installing exclusion materials on a structure, the project proponent may hire a qualified biologist or qualified wildlife management specialist to remove nests as the birds construct them and before any eggs are laid. Visits to the site would need to occur daily throughout the breeding season (February 15 through August 31) as swallows can complete a nest in a 24-hour period.
- If exclusion material is not installed on structures prior to February 15 or manual removal of nests is not conducted daily, and migratory birds colonize a structure, removal or modification to that portion of the structure may not occur until after August 31, or until a qualified biologist has determined that the young have fledged and the nest is no longer in use.
- If appropriate steps are taken to prevent swallows from constructing new nests as described in the preceding measures, work can proceed at any time of the year.

4.3.11.4 Compensatory Mitigation

With implementation of measures described in Section 4.3.11.3, potential impacts on purple martin and other structure-nesting birds will be avoided or minimized. No compensatory mitigation is proposed.

4.3.11.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on purple martin and other structure-nesting birds, the proposed project is not expected to contribute to cumulative effects on these species.

4.4 Special-Status Fish Species

As described in Chapter 3, Results: Environmental Setting, CCV steelhead and CV fall- and late fall–run Chinook salmon are the only special-status fish species identified as having potential to occur in the BSA, based on Orchard and Pleasant Grove Creeks' hydrologic connections to the waterways that may support steelhead.

4.4.1 California Central Valley Steelhead

The CCV steelhead distinct population segment (DPS) is federally listed as threatened (63 FR 13347; March 19, 1998) (71 FR 834; January 5, 2006). NMFS reaffirmed its threatened status on August 15, 2011 (National Marine Fisheries Service 2011). The CCV steelhead DPS includes all naturally spawned populations of steelhead in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries. Artificially-propagated fish from Coleman National Fish Hatchery and Feather River Fish Hatchery are included in the DPS (71 FR 834; January 5, 2006). Critical habitat for CCV steelhead has been designated; however, Orchard Creek and Pleasant Grove Creek are not included in the designation (70 FR 52488; September 2, 2005). CCV steelhead is not listed under CESA.

CCV steelhead are included in the *Recovery Plan for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead*, which was completed in 2014 (National Marine Fisheries Service 2014).

Steelhead exhibit highly variable life history patterns throughout their range, but are broadly categorized into winter and summer reproductive ecotypes. Winter steelhead, the most widespread reproductive ecotype, is the only type currently present in Central Valley streams (McEwan and Jackson 1996). Winter steelhead become sexually mature in the ocean; enter spawning streams in summer, fall, or winter; and spawn a few months later in winter or spring (Meehan and Bjornn 1991; Behnke 1992).

In the Central Valley, adult winter steelhead migrate to upstream spawning areas during most months of the year in streams with a permanent hydrologic connection to the ocean, with peak migration occurring in the fall or early winter, and spawn in the winter and spring (McEwan 2001). Steelhead typically spawn in tributaries to mainstem rivers, and the young reside in cool, clear, fast-flowing streams and rivers with perennial flow (Moyle 2002). Juvenile steelhead rear a minimum of 1 year, and typically 2 or more years, in freshwater before migrating to the ocean as smolts (i.e., juveniles that are physiologically ready to enter seawater). Juvenile migration to the ocean generally occurs from December through August, although peak months of juvenile migration are January to May (McEwan 2001). Generally, juvenile steelhead require cool (optimal temperature for growth is 15–18°C [59–64.4°F]), clean, well-oxygenated (i.e., saturated conditions) riverine habitat with an abundance of relatively clean gravel for spawning and food production, streamside vegetation, and cover (Moyle 2002). These habitat features are largely absent from Orchard Creek and Pleasant Grove Creek in the vicinity of the BSA; therefore, the BSA is considered a potential migratory corridor for adult and juvenile steelhead and may provide

limited rearing habitat for juvenile steelhead during winter and spring when water temperatures are within acceptable ranges.

Steelhead were once abundant in Central Valley drainages; however, population numbers have declined significantly in recent decades. Factors that have contributed to their lower abundance include habitat loss as a result of barriers; water development; water conveyance and flood control; hatchery operations and practices; land use activities; water quality; sport harvest; disease and predation; environmental variation (e.g., climatic and ocean conditions); and invasive species (National Marine Fisheries Service 2014).

4.4.1.1 Survey Results

Focused surveys for CCV steelhead in Orchard Creek and Pleasant Grove Creek in the BSA were not conducted because the protected status of steelhead precluded the use of fish sampling as part of the habitat assessment. Therefore, fish presence information and the impact assessment on CCV steelhead depends largely on data collected in the region, general species life history accounts, and information presented in the scientific literature.

Orchard Creek may be seasonally accessible to CCV steelhead, based on its connection with Auburn Ravine and general accounts of steelhead in the Auburn Ravine watershed. Likewise, Pleasant Grove Creek may be seasonally accessible to CCV steelhead, based on its direct hydrologic connection to Pleasant Grove Canal, and ultimately the Cross Canal (which Auburn Ravine also flows to) and the Sacramento River (which is known to support steelhead). Neither of these creeks is within the historical distribution range of CCV steelhead, and their presence during summer is very unlikely (National Marine Fisheries Service 2014, 2015a, 2015b).

The channel beds of Orchard Creek and Pleasant Grove Creek are composed largely of sand and silt with occasional accumulations of small gravel. Gravel deposits in the BSA are heavily embedded in sand and silt, and are therefore unsuitable for steelhead spawning. Riparian trees and shrubs are sparse in the BSA and throughout most of the creeks' respective watersheds, especially upstream of SR 65, providing little shade and instream cover and contributing to elevated water temperatures during summer and early fall.

Water temperatures measured in Orchard Creek from 2003 to 2007 at a location approximately 1 mile downstream of the BSA (Thunder Valley wastewater treatment plant discharge point) indicate that temperatures exceeding 75°F are typical of summer conditions (July through August) in this portion of the creek (Analytical Environmental Services 2007). Hourly water temperatures measured in Orchard Creek from August 28 to October 24, 2014, at Industrial Avenue (approximately 0.4 mile downstream of the BSA) also typically exceeded 75°F from late August through mid-September, with daily maximum temperatures exceeding 80°F during the first two

weeks of data collection (ICF International 2015). Water temperature conditions in Pleasant Grove Creek in the BSA are expected to be similar to those observed in Orchard Creek based on their similarities in elevation, channel geometry, flow, and shade levels.

4.4.1.2 Project Impacts

The following assessment addresses potential direct and indirect impacts of the proposed project on CCV steelhead. Potential project impacts on CCV steelhead include both short-term and long-term effects. Short-term effects include temporary construction-related effects that may last from a few hours to days (e.g., disturbance, suspended sediment and turbidity, contaminants, creek diversion). Long-term effects include loss of aquatic, water quality-related effects from polycyclic aromatic hydrocarbons (PAHs) associated with new asphalt, and potential changes in channel morphology and hydraulics from added impervious surfaces. Short- and long-term effects on CCV steelhead and its habitat were evaluated qualitatively based on general knowledge of the impact mechanisms and the anticipated response of CCV steelhead to construction actions and changes in water quality. Impacts on habitat were quantified as area or linear feet of habitat affected. Impacts on spawning adults, eggs, alevins (larvae), and fry would not occur because these sensitive life stages do not occur in the BSA, nor would they be affected by construction activities; therefore, they are not discussed further. Potential direct and indirect impacts on adult and juvenile CCV steelhead arising from the proposed project are discussed below.

The ESA effects determination would be the proposed project would have *no effect* on federally threatened CCV steelhead as a result of construction activities or through effects on habitat.

Direct Impacts

Disturbance and Direct Injury or Mortality

Noise, vibrations, artificial light, and other physical disturbances resulting from construction activities in or near aquatic habitats can harass fish, disrupt or delay normal activities, or cause injury or mortality. In general, the potential magnitude of effects depends on a number of factors, including the type and intensity of the disturbance, proximity of the action to the waterbody, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities. For most activities, disturbance-related effects on fish tend to be limited to avoidance behavior in response to movements, noises, and shadows caused by construction personnel and equipment operating in or adjacent to aquatic habitats. However, survival can be altered if disturbance causes fish to leave protective habitat (e.g., causing increased exposure to predators) or is of sufficient duration and magnitude to affect growth and spawning success. In the absence of protective measures, including timing restrictions on in-water work, injury to or mortality of fish could result from direct and indirect contact with humans and machinery, materials being placed in the stream, and physiological stress.

Physical disturbance, injury, and direct or indirect mortality are most likely to occur during in-water work. Project actions that may involve in-water work as part of this project include:

- Installing and removing cofferdams
- Stream dewatering and operation of stream diversions
- Installing RSP
- Pile driving

Cofferdams would be required during construction to dewater work areas with flowing water. Cofferdams would be constructed using K-rails, sandbags, or other appropriate means. Stream dewatering and operation of the stream diversion system could potentially kill fish if fish become stranded in the dewatered creek segment or the water diversion bypass channel as flow is diverted back into the creek channel following construction. RSP would be placed around the new bridge abutment extensions on Pleasant Grove Creek to protect the bridge abutment extensions from erosion. In the absence of avoidance and minimization measures, the placement and/or removal of these materials could result in short-term disturbance, injury to, or mortality of fish that come in contact with equipment or construction materials during their installation and removal.

Impact pile driving would be required to install new piles for the new bridge extensions over Pleasant Grove Creek. Impact pile driving is of concern because of the intensity of sounds and known occurrences of fish kills associated with impact pile driving (Popper and Hastings 2009). The effects of pile driving noise on fish may include behavioral responses, physiological stress, temporary and permanent hearing loss, tissue damage (auditory and non-auditory), and direct mortality (Popper and Hastings 2009). In general, factors that may influence the magnitude of effects include the species, life stage, and size of fish; type and size of pile and hammer; frequency and duration of pile driving; site characteristics (e.g., water depth); and distance of fish from the source of the underwater sound. The driving of piles with an impact hammer directly in water is of particular concern because of the intensity of sounds that it can produce.

Although Orchard Creek and Pleasant Grove Creek may be accessible to adult and juvenile CCV steelhead, direct exposure of adults and juveniles of CCV steelhead to disturbance and direct injury or mortality from construction activities is very unlikely because of the seasonal timing of these activities and the low quality of existing habitat in the BSA. Migrating adults would not be affected because of the timing of this life stage and their need for cooler water and higher flows that typically occur from late fall through early spring. Direct effects on juvenile steelhead are very unlikely because all work would be performed during the dry season (Measure 16, *Conduct all In-Channel Construction Activities between June 1 and October 15*) when juveniles are not

expected to be present in the BSA because of low or non-existent flow and excessively warm water temperatures.

Erosion and Mobilization of Sediment

Site clearing, earthwork, cofferdam installation and removal, and bridge widening and culvert construction activities would result in disturbance of soil and streambed sediments, potentially resulting in temporary increases in turbidity and suspended sediments in Orchard Creek and Pleasant Grove Creek.

Elevated levels of suspended sediments can result in physiological, behavioral, and habitat effects. The severity of these effects depends on the sediment concentration, duration of exposure, and sensitivity of the affected life stage. Short-term increases in turbidity and suspended sediment can disrupt normal behavior patterns of fish, potentially affecting foraging, rearing, and migration. The level of disturbance can also cause juveniles to abandon protective habitat or reduce their ability to detect predators, potentially increasing their vulnerability to predators (e.g., piscivorous birds and fish). Increased sediment delivery can also smother aquatic invertebrates (a fish food item), degrade forage habitat, and reduce cover for juvenile fish. Because CCV steelhead are unlikely to be present in the BSA during proposed construction activities, potential effects would likely be limited to the effects of increased turbidity and sedimentation on aquatic habitat and food resources.

Implementation of Measure 4 (described in Section 4.1.1.3) would minimize the potential for mobilization of sediment and increased sedimentation and turbidity in Orchard Creek and Pleasant Grove Creek. In addition, the project proponent would limit in-channel construction activities, which have a greater likelihood of mobilizing sediments, to the summer dry season (Measure 16, *Conduct all In-Channel Construction Activities between June 1 and October 15*) when CCV steelhead are not expected to occur in the BSA. Any temporary increases in turbidity and suspended sediment that do occur in Orchard Creek or Pleasant Grove Creek would be expected to be brief and diminish within a short distance downstream of the construction sites (within approximately 200 feet) as a result of rapid settling of sediment in response to low flow conditions and the small quantities of sediment that would be expected to be released. Therefore, the potential for adverse effects on CCV steelhead associated with erosion and mobilization of sediments from ground disturbing activities would be discountable as they would be extremely unlikely to occur.

Contaminant Spills

Construction activities that occur in or near stream channels can result in the discharge of contaminants that are potentially lethal to fish. The operation of bulldozers, scrapers, excavators, backhoes, pile drivers, cranes, and other construction equipment can result in spills and leakage of

fuel, lubricants, hydraulic fluids, and coolants. Other sources of potential contamination include asphalt, wet concrete, and other materials that may come into direct contact with surface water during construction activities.

The potential magnitude of biological effects resulting from contaminant spills depends on a number of factors, including the proximity of spill to the stream; the type, volume, concentration, and solubility of the contaminant; and the timing and duration of the spill. Contaminants can affect survival, growth, and reproductive success of fish and other aquatic organisms. The level of effect depends on the species, life stage sensitivity, duration of exposure, condition or health of exposed individuals, and the physical and chemical properties of the water (e.g., temperature, dissolved oxygen).

The potential for exposing CCV steelhead to hazardous chemicals would be avoided by limiting in-channel construction activities to the summery dry season (Measure 16, *Conduct all In-Channel Construction Activities between June 1 and October 15*) and by implementing BMPs during project construction to protect water quality. Therefore, the potential for adverse effects on CCV steelhead associated with contaminant spills would be discountable as they would be extremely unlikely to occur.

Stream Diversion and Dewatering

Stream diversion and dewatering of the construction site to facilitate construction associated with bridge widening and culvert construction can result in creating a barrier to fish movement in the stream or direct mortality if fish become trapped in areas being dewatered for construction or in downstream reaches if stream flow is interrupted while cofferdams and the stream diversion system are being installed.

Limiting in-channel construction activities to the summer dry season (Measure 16, *Conduct all In-Channel Construction Activities between June 1 and October 15*) when adult and juvenile steelhead are not expected to be present in the BSA because of low or non-existent flow and excessively warm water temperatures, would ensure that steelhead are not stranded during stream diversion and dewatering activities. In addition, Measure 17 will ensure that flow to creek segments downstream from construction sites will not be interrupted as streamflow is being diverted, and that fish passage will be maintained through the BSA at all times while stream diversion is occurring.

Temporary and Permanent Loss of Aquatic Habitat

The proposed project would result in the temporary and permanent loss of aquatic habitat area, including potential habitat for CCV steelhead. Stream dewatering would result in the temporary loss of aquatic habitat (substrate and water column) equal to the cumulative area of the creek

channel being dewatered. Up to approximately 160 feet of channel length on Pleasant Grove Creek would be dewatered in each construction season; the amount of area of habitat this represents would depend on flow levels at the time dewatering is implemented and whether the entire creek width is dewatered or flow is only confined to one side of the channel. Similarly, up to 120 feet of channel length on Orchard Creek may be dewatered during one construction season if water is present at the time of construction. However, creek dewatering would occur during the summer dry season (Measure 16, *Conduct all In-Channel Construction Activities between June 1 and October 15*) when it is very unlikely that CCV steelhead would be present. In addition, the creek dewatering system would be removed from the creek prior to the arrival of seasonal rains when CCV steelhead could be present. Therefore, impacts on CCV steelhead from the temporary loss of aquatic habitat associated with the temporary dewatering of Orchard Creek and Pleasant Grove Creek would be negligible.

Widening of the northbound and southbound SR 65 bridges would require that 16 new bridge piers (four at each of the four bents) be installed in the Pleasant Grove Creek channel under each widened bridge and below the OHWM. Installation of the 32 new piers to support the widened bridges would result in the permanent loss of substrate habitat equal to the cumulative area of the creek channel that would be occupied by the new bridge piers. Up to 44 square feet of substrate habitat would be permanently affected by the installation of the new bridge piers. Similarly, widening of the northbound and southbound lanes of SR 65 over Orchard Creek would require that the existing box culvert be extended 6 feet upstream and 6 feet downstream from the existing culvert inlet and outlet, respectively. Extending the existing box culvert would result in the permanent loss of substrate habitat equal to the cumulative area of the creek channel that would be occupied by the new culvert sections. Up to 43 square feet of substrate habitat would be permanently affected by extending the inlet and outlet of the box culvert. Overall, a total of 87 square feet of substrate habitat would be permanently affected as a result of extending the culvert and widening the two bridges.

Dewatering of the project site, installation of the new bridge piers, and construction of the culvert extensions would result in the temporary and permanent loss of aquatic habitat, including habitat for aquatic invertebrates, potentially affecting the availability of food for CCV steelhead. However, the effect of potential losses in food availability would be negligible because of the small area of habitat that would be temporarily dewatered and the anticipated rapid re-colonization of the streambed by invertebrates following re-watering of the sites, and because of the small area of streambed permanently affected from bridge pier and culvert construction relative to the availability of existing substrate and food producing habitat in Orchard Creek and Pleasant Grove Creek.

RSP would be required at the new abutments of the widened bridges over Pleasant Grove Creek to prevent scour and erosion at the abutments. RSP would consist of 1/4-ton rock with a median diameter size of approximately 23 inches. Approximately 2,600 square feet of RSP would be located below the OHWM, resulting in the permanent loss of aquatic habitat equal to the cumulative area of creek channel that would be occupied by the RSP. However, the effect of potential losses in food availability would be negligible because of the small area of habitat that would be permanently affected from placement of RSP relative to the availability of existing substrate and food producing habitat in Pleasant Grove Creek. Placement of RSP could also result in the creation of predatory habitat as a result of the large voids that potentially could be created in the RSP; however, the inclusion of soil in the RSP would eliminate the occurrence of large gaps in the RSP that favor predators. Therefore, the potential for adverse effects on CCV steelhead associated with placement of RSP below the OHWM would be negligible.

Vegetation Clearing

Within the BSA, riparian scrub wetlands supporting sandbar willow, with some arroyo willow, are present in small patches and provide streamside vegetation that overhangs the wetted channel (see Section 3.1.2.7) .This streamside vegetation is important for stream shading, which helps to moderate water temperatures, provides fish with protection from predators, and contributes leaf litter and insects (an important food source for fish) to the stream.

Construction activities associated with extending the box culvert inlet (upstream of SR 65) on Orchard Creek by 6 feet and widening the upstream side of the northbound SR 65 bridge over Pleasant Grove Creek by 12 feet would result in the temporary and permanent removal of this habitat (Figure 2A). Removal of this vegetation would result in increased exposure of surface water to solar radiation, reduced overhead cover, and reduced input of leaf litter and food resources. However, the proposed action is not expected to cause long-term changes in water temperature or food availability for CCV steelhead because sandbar willow is expected to quickly recolonize areas temporarily affected by construction activities, and the stream shading afforded by the culvert extension on Orchard Creek and the widened portion of the bridge on Pleasant Grove Creek would offset the loss of stream shading associated with the permanent removal of vegetation within the project footprint.

Indirect Impacts

Increase in Impervious Surfaces

The proposed project would result in added impervious surfaces in the Orchard Creek and Pleasant Grove Creek watersheds, and ultimately in the Sacramento River watershed. The project would add up to 15.89 acres of additional impervious surfaces under the Carpool Lane Alternative, and up to 17.03 acres of additional impervious surfaces under the General Purpose

Lane Alternative (ICF International 2017). The added impervious area has the potential to increase peak flow and runoff volume in receiving waters from the loss of natural ground cover and reduced infiltration of water into soil. This change could subsequently lead to accelerated stream bed and bank erosion, loss of stream structure, increased sediment transport and deposition (turbidity and sedimentation effects), and increased flooding. In response to the increases in flow magnitude and frequency, stream channels could incise or widen, which could result in adding additional fine sediments to the stream from the resultant increases in channel bed and stream bank erosion. These changes could lead to long-term alterations to stream flow, temperature, and geomorphology, with long-term or permanent consequences for fish and their habitat.

The increase in impervious surfaces also could result in increased water pollutants in local streams. Increased traffic loads in the corridor could result in increased deposition of particulates onto roadway surfaces that are then transported to receiving waters with road runoff. Heavy metals, oil, grease, and PAHs are common pollutants in road runoff and some of these pollutants can accumulate in stream sediments with lethal and sublethal consequences for fish and other aquatic species, particularly during “first flush” rain events. PAHs are organic compounds—containing only carbon and hydrogen—that occur in motor vehicle exhaust, petroleum products, materials associated with asphalt, and various other municipal and industrial sources. PAHs are widely distributed in the environment and are important environmental pollutants because of their carcinogenicity and tendency to bioaccumulate. PAHs are readily absorbed by fish and other aquatic organisms and, depending on concentration, can lead to lethal and deleterious sublethal effects in these organisms (Tuvikene 1995). PAHs tend to adsorb to any particulate matter, including fine sediment; therefore, relative concentrations of PAHs in aquatic ecosystems are generally highest in sediments, followed by aquatic biota and the water column (Tuvikene 1995). There is evidence that urban runoff containing roadway sediment may be an important PAH input to aquatic habitats and that a significant contribution to the PAH content of roadway sediment comes from materials associated with asphalt (Wakeham et al. 1980).

To prevent PAHs from entering waterways in the project area, the project proponent will require the contractor to implement a SWPPP prior to beginning construction, which will include Caltrans standard construction site BMPs. The temporary construction BMPs may include fiber rolls, check dams, and silt fences. To further prevent the introduction of PAHs from the new asphalt and ensure that water quality is maintained, the proposed temporary BMPs will be maintained in-place for a period of 6 months after construction while biofiltration swales are becoming established. Once established, the biofiltration swales will block entry of toxic substance-bearing particles, including those containing PAHs, from entering drainages.

The approach roadways leading to the widened bridges and culvert extensions also create the potential for PAHs to leach through the pavement, where they have the potential to enter the embankment material and ultimately the drainages in the project area. However, no long-term leaching effects are expected to occur from the proposed project because it is expected that the bridge abutments and culvert extensions would contain any PAHs that leach through the newly paved roadway surface and into the embankment material. The abutments and culvert extensions will provide a permanent impermeable barrier between PAHs and drainages in the project area.

The project proponent would substantially reduce or eliminate the potential for hydromodification impacts and the potential for deleterious materials like PAHs from entering Orchard Creek and Pleasant Grove Creek and eventually downstream receiving waters by incorporating temporary construction site BMPs, pollution prevention and erosion control BMPs, and treatment BMPs (e.g., biofiltration swales) into the project design to promote infiltration of stormwater runoff from new and reconstructed impervious surfaces. With these safeguards in place, the potential for long-term adverse effects related to toxic chemicals entering Orchard Creek and Pleasant Grove Creek in surface runoff during storm events and from leaching through the asphalt and embankment materials would be negligible.

Impacts on California Central Valley Steelhead Critical Habitat

Orchard Creek and Pleasant Grove Creek are not designated as critical habitat for CCV steelhead; however, Orchard Creek discharges to Auburn Ravine and Pleasant Grove Creek discharges to the Cross Canal, both of which are designated as critical habitat for CCV steelhead (70 FR 52488, September 2, 2005). No adverse effects on the designated critical habitat of CCV steelhead is expected because all potential effects on water quality, physical habitat, and food resources would be limited to the BSA, which is well upstream of designated critical habitat in Auburn Ravine (approximately 6 miles downstream of the SR 65 crossing at Orchard Creek) and in the Cross Canal (approximately 14 miles downstream of the SR 65 crossing at Pleasant Grove Creek).

4.4.1.3 Avoidance and Minimization Measures

By limiting all in-channel construction to the summer dry season (June 1 to October 15), the project proponent will avoid direct impacts on CCV steelhead. In addition, implementation of the following measures will further avoid direct and indirect impacts on CCV steelhead habitat. Additional avoidance and minimization efforts may be agreed upon during the project permitting process.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 16: Conduct All In-Channel Construction Activities between June 1 and October 15

The project proponent will require the contractor to conduct all in-channel construction and impact pile driving between June 1 and October 15, unless earlier and/or later dates for in-channel construction activities and impact pile driving are approved by CDFW and NMFS. In-channel construction is defined as creek bank and channel-bed construction below the OHWM, including the installation of stream diversion structures, channel dewatering, and excavation and grading activities. By requiring contractors to adhere to these dates for in-channel construction and pile driving, the project proponent would achieve several goals.

- In-water construction would avoid the period when adult and juvenile CCV steelhead could be moving through the project area.
- The timing of in-water construction would be concurrent with the period when rearing juvenile CCV steelhead are expected to be absent from the affected reaches of Orchard Creek and Pleasant Grove Creek because of unsuitable conditions (low or lack of flow, excessive water temperatures).
- The length of the in-water construction period would be maximized, thereby ensuring that only one in-channel construction season would be needed to complete the culvert construction on Orchard Creek, and only two in-channel construction seasons would be needed to complete bridge widening on Pleasant Grove Creek.

Measure 17: Implement Cofferdam and Stream Diversion Restrictions

Any activity that temporarily diverts flow from any segment of Orchard Creek or Pleasant Grove Creek will trigger implementation of the following conditions:

- The extent of cofferdam footprints and stream channel dewatering will be limited to the minimum necessary to support construction activities.
- If temporary diversion cofferdams are constructed of natural materials (i.e., gravel), the material will be composed of washed, rounded, spawning-sized gravel between 0.4 to 4 inches

in diameter and any gravel in contact with flowing water will be left in place, manually spread out using had tools, if necessary, to ensure adequate fish passage for all life stages, and then allowed to disperse naturally by high winter flows.

- The water diversion system will be constructed and be operated in such a way that flow to creek segments downstream from the construction site will not be interrupted as streamflow is being diverted.
- Water will be released downstream at an appropriate rate to maintain downstream flows at all times and the outlet of the diversion will be positioned such that the discharge of water does not induce bank erosion or channel scour.
- Any pumps used to convey diverted water around dewatered reaches will have their intakes properly screened according to CDFW and NMFS screening guidelines for water diversion intakes.
- Fish passage through the construction area will be maintained either by constricting the flow to one side of the creek at a time or diverting all flow into an open channel around the construction site.

4.4.1.4 Compensatory Mitigation

With implementation of measures described in Section 4.4.1.3, potential impacts on CCV steelhead and its habitat will be avoided or minimized. No compensatory mitigation is proposed.

4.4.1.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on CCV steelhead and its habitat, the proposed project is not expected to contribute to cumulative effects on this species.

4.4.2 Central Valley Fall- and Late Fall-Run Chinook Salmon

The CV fall- and late fall–run Chinook salmon evolutionarily significant unit (ESU) is a federal species of concern (69 FR 19975; April 15, 2004).The CV fall-run and late fall–run Chinook salmon ESU includes all naturally spawning populations of fall-run and late fall–run Chinook salmon in the Sacramento and San Joaquin River basins and their tributaries east of the Carquinez Strait in California (64 FR 50394). Critical habitat for CV fall- and late fall–run Chinook salmon has not been designated. The CV fall- and late fall–run Chinook salmon ESU is not listed under CESA, but is considered a California species of special concern. CDFW classifies the current status of CV fall-run Chinook salmon as Moderate Concern (i.e., the species is under no immediate threat of extinction but populations are in long-term decline or are naturally small and isolated, and warrant frequent status re-assessment) and CV late fall–run Chinook salmon as High Concern (considered to be under severe threat of extinction, but extinction is less imminent than for other more imperiled species) (Moyle et al. 2015). Only fall-run Chinook salmon have the potential to occur in the BSA (late fall–run Chinook salmon occur primarily in the Sacramento

River, and has also been observed in some of its larger tributaries [e.g., Yuba and Feather Rivers, and Battle, Cottonwood, Clear, and Mill Creeks] (Moyle et al. 2015).

Adult fall-run Chinook salmon enter the Sacramento River and larger tributaries from June through December with a peak in September and October, and spawn from late September through December, with a peak in October and November (Moyle 2002). Entry into smaller tributaries often depends on when access is restored following significant fall rain events. Adults spawn within a few days or weeks of reaching their spawning grounds (Moyle 2002). Spawning and egg incubation are unlikely to occur in the vicinity of the BSA based on the limited availability of this habitat in the BSA. Shortly after emergence from redds, most fry disperse downstream toward the Delta and into the San Francisco Bay estuary. Juveniles typically migrate to the ocean from December to June before water temperatures become too warm.

The same factors that have contributed to declines of CV steelhead in Central Valley rivers and streams have also contributed to the declines of CV fall-run Chinook salmon.

4.4.2.1 Survey Results

Focused surveys for CV fall-run Chinook salmon in Orchard Creek and Pleasant Grove Creek in the BSA were not conducted and there are no reports of CV fall-run Chinook salmon being observed in Orchard Creek or Pleasant Grove Creek in, or in the vicinity of, the BSA. However, adult and juvenile fall-run Chinook salmon have been observed in Auburn Ravine, and Orchard Creek drains into Auburn Ravine; therefore, Orchard Creek may be accessible to CV fall-run Chinook salmon when flow conditions create suitable conditions for passage. Pleasant Grove Creek may also be accessible to CV fall-run Chinook salmon for the same reasons; however, its direct hydrologic connection is with Pleasant Grove Canal which flows to the Cross Canal (which Auburn Ravine also flows to), and ultimately the Sacramento River (which supports CV fall-run Chinook salmon). Additional information on existing habitat conditions in Orchard Creek and Pleasant Grove Creek is provided in Section 4.4.1.1.

4.4.2.2 Project Impacts

Project impacts on CV fall-run Chinook salmon would be the same as those described for CCV steelhead (in Section 4.4.1.2).

4.4.2.3 Avoidance and Minimization Measures

By limiting all in-channel construction to the summer dry season (June 1 to October 15), the project proponent will avoid direct impacts on CCV steelhead. In addition, implementation of the following measures will further avoid direct and indirect impacts on CCV steelhead habitat. Additional avoidance and minimization efforts may be agreed upon during the project permitting process.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 4: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

Please refer to the discussion of Measure 4 in Section 4.1.1.3.

Measure 17: Implement Cofferdam and Stream Diversion Restrictions

Please refer to the discussion of Measure 17 in Section 4.4.1.3.

4.4.3 Essential Fish Habitat

EFH for Pacific salmon could be affected by the proposed project. The MSA-managed species that may occur in Orchard Creek and Pleasant Grove Creek in the BSA and that could be potentially affected by the project is CV fall-run Chinook salmon.

Potential effects on EFH for Pacific salmon would be similar to those described for CCV steelhead and critical habitat (Section 4.4.1.2). Environmental conditions that could potentially affect Pacific salmon EFH are sedimentation and turbidity, hazardous materials and contaminants, stream diversion and dewatering, and temporary and permanent loss of aquatic habitat.

Effects on Pacific salmon EFH associated with sedimentation, turbidity, and contaminant spills would be temporary, while effects associated with permanent loss of aquatic habitat, and pollutants from new asphalt would be long-term. Implementing all applicable construction site BMPs and pollution prevention and erosion control BMPs will avoid or minimize potential adverse effects on EFH from increased fine sediment and turbidity and contaminants. Implementation of the SWPPP, along with applicable BMPs, would substantially reduce or eliminate the potential for an accidental spill and unintentional discharge of contaminants associated with potential effects on EFH. The permanent loss of aquatic habitat (substrate) from new bridge piers, culvert extensions, and riprap would be relatively minor compared to the amount of available habitat in these drainages.

The proposed project could potentially adversely affect EFH; however, habitat impacts would be minor and/or temporary and most habitat conditions within the affected areas are expected to be restored to pre-project conditions soon after completion of construction activities. With implementation of Measures 1 through 4 (Section 4.1.1.3) and Measures 16 and 17 (Section 4.4.1.3), the potential for short-term and long-term effects on EFH for Pacific salmon would be negligible.

4.5 Other Protected and Managed Biological Resources

4.5.1 Special-Status and Non-Special-Status Roosting Bats

Several species of special-status and non-special-status bats could potentially roost in the BSA. Pallid bat and silver-haired bat are designated as California species of special concern and are considered moderate- to high-priority species in California by the Western Bat Working Group (2007).

Pallid bat is found throughout most of California at low to middle elevations (6,000 feet). Pallid bats are found in a variety of habitats, including desert, brushy terrain, coniferous forest, and non-coniferous woodlands. Daytime roosts include rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are commonly under bridges but also are in caves and mines (Brown and Pierson 1996). Hibernation may occur during late November through March. Pallid bats breed in October through December, and possibly through February (Hermanson and O'Shea 1983), and one or two young are born in May or June (Brown and Pierson 1996).

Silver-haired bats occur primarily in the northern portion of California and at higher elevations in the southern and coastal mountain ranges (Brown and Pierson 1996), but may occur anywhere in California during their spring and fall migrations. They are associated with coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats (Zeiner et al. 1990b:54). Silver-haired bats roost in trees almost exclusively in summer, and maternity roosts typically are located in woodpecker hollows or in gaps under bark. Maternal colonies range from several to about 75 individuals (Brown and Pierson 1996). In winter, the species hibernates in trees, crevices, and buildings.

4.5.1.1 Survey Results

Existing freeway overcrossing structures provide human-made roost sites for special-status and non-special-status bats, particularly where they span perennial creeks that provide abundant prey for bats. Focused bat roosting surveys have not been conducted within BSA.

4.5.1.2 Project Impacts

Modification or disturbance of existing highway structures within the BSA could affect structure-roosting bats such as pallid bat and other non-special status bats (i.e., Mexican free-tailed bat [*Tadarida brasiliensis*], little brown bat [*Myotis lucifugus*], and Yuma myotis [*Myotis yumanensis*]) during the maternity season or hibernation period.

4.5.1.3 Avoidance and Minimization Efforts

Implementation of the following measures will avoid direct impacts and minimize indirect impacts on special-status and non-special-status bats.

Measure 1: Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Please refer to the discussion of Measure 1 in Section 4.1.1.3.

Measure 2: Conduct Mandatory Environmental Awareness Training for Construction Personnel

Please refer to the discussion of Measure 2 in Section 4.1.1.3.

Measure 3: Retain a Qualified Biologist to Conduct Periodic Monitoring during Construction in Sensitive Habitats

Please refer to the discussion of Measure 3 in Section 4.1.1.3.

Measure 18: Conduct Pre-Construction Surveys for Roosting Bats and Implement Protection Measures

Baseline data is not available on how bats use the BSA, their individual numbers, or how they vary seasonally. Daily and seasonal variations in habitat use by bats is common. To obtain the highest likelihood of detection, the following pre-construction bat surveys will be conducted within and adjacent to the construction area for each phase of construction. If surveys determine that bats are roosting in the construction area, the project proponent will implement the following protective measures.

Conduct Pre-Construction Surveys at Bridges and Other Structures

Before work begins on the bridge/structure, qualified biologists will conduct a daytime search for bat sign and evening emergence surveys to determine whether the bridge/structure is being used as a roost. Biologists conducting daytime surveys will listen for audible bat calls and will use the naked eye, binoculars, and a high-powered spotlight to inspect expansion joints, weep holes, and other bridge features that could house bats. Bridge surfaces and the ground around the bridge/structure will be surveyed for bat sign, such as guano, staining, and prey remains.

Qualified biologists also will conduct evening emergence surveys at structures that contain suitable roosting areas. The surveys will consist of at least one biologist stationed on each side of

the bridge/structure watching for emerging bats from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights at each survey location within the season that construction would be taking place. Surveys may take place over several nights to fully cover the extent of structure work. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). Survey methodology may be supplemented as new research identifies advanced survey techniques and equipment that would aid in bat detections. Acoustic detectors may be used during emergence surveys to obtain data on bat species present in the survey area at the time of detection.

If suitable roost structures would be removed, additional surveys may be required to determine how the structure is used by bats—whether it is used as a night roost, maternity roost, migration stopover, or for hibernation.

Identify Protective Measures for Bats Using Bridges/Structures

If it is determined that bats are using bridges/structures within or adjacent to the construction area as roost sites, the project proponent (or their designated contractor) will coordinate with CDFW to identify protective measures to avoid and minimize impacts on roosting bats based on the type of roost and timing of activities. These measures could include, but are not limited to the following.

- If a non-maternity roost is located within a structure that would be modified or disturbed in a manner that would expose the roost, bats will be excluded from the structure by a qualified wildlife management specialist working with a bat biologist. An exclusion plan will be developed in coordination with CDFW that identifies the type of exclusion material/devices to be used, the location and method for installing the devices, and monitoring schedule for checking the effectiveness of the devices. Because bats are expected to tolerate temporary construction noise and vibrations, bats will not be excluded from structures if no direct impacts on the roost are anticipated.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined that the roost is no longer active.

4.5.1.4 Compensatory Mitigation

With implementation of measures described in Section 4.5.1.3, potential impacts on roosting bats will be avoided or minimized. The proposed project will not result in the loss of bat roosting habitat and therefore, no compensatory mitigation is required.

4.5.1.5 Cumulative Impacts

With implementation of measures prescribed to avoid and minimize potential impacts on roosting bats, the proposed project is not expected to contribute to cumulative effects on the species.

4.5.2 Invasive Plants

4.5.2.1 Survey Results

Table 3-1 lists the invasive plant species identified by CDFA and Cal-IPC that are known to occur in the BSA. No plant species designated as federal noxious weeds have been identified in the BSA. Most of the invasive plant species occur in annual grassland, along roadways, and in disturbed/graded areas.

4.5.2.2 Project Impacts

The proposed project would create additional disturbed areas for a temporary period. Areas where temporary disturbance occurs would be more susceptible to colonization by or spread of invasive plants. Because construction disturbance will occur adjacent to established habitat preserves, the proposed project could introduce or spread invasive plant species into these natural or managed habitat areas.

4.5.2.3 Avoidance and Minimization Efforts

Implementation of the following measure will avoid and minimize the introduction and spread of invasive plant species.

Measure 19: Avoid and Minimize the Spread of Invasive Plant Species during Project Construction

The project proponent or its contractor will be responsible for avoiding and minimizing the introduction of new invasive plants and the spread of invasive plants previously documented in the BSA. The following BMPs will be written into the construction specifications and implemented during project construction.

- Retain all excavated soil material onsite or dispose of excess soil in a permitted offsite location to prevent the spread of invasive plants to uninfested areas adjacent to the project footprint.
- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1% weed seed).
- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).
- Use sterile grass seed and native plant stock during revegetation.
- Revegetate or mulch disturbed soils within 30 days of completing ground-disturbing activities to reduce the likelihood of invasive plant establishment.

Detailed information about implementing these BMPs can be found in Cal-IPC's *Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors* (California Invasive Plant Council 2012).

4.5.2.4 Compensatory Mitigation

No compensatory mitigation pertaining to invasive plants is required.

4.5.2.5 Cumulative Impacts

Ground disturbance and construction vehicle traffic associated with the proposed project have the potential to cumulatively contribute to the introduction and spread of invasive plant species. With implementation of the prescribed avoidance and minimization measure, the proposed project would not substantially contribute to cumulative impacts related to the spread of invasive plants.

Chapter 5 Conclusions and Regulatory Determinations

Applicable federal, state, and local permits and approvals that could be required prior to construction of the proposed project are listed in Table 5-1.

Table 5-1. Federal and State Regulations Applicable to the Proposed Project

Regulations	Approving Agency
Endangered Species Act Section 7: inter-agency consultation	USFWS
Clean Water Act Section 404: placement of fill	USACE Sacramento District
Clean Water Act Section 401: Water Quality Certification	Central Valley RWQCB
Executive Order 11990: Protection of Wetlands	FHWA
Executive Order 13112: Prevention and Control of Invasive Species	FHWA
Executive Order 13186: Migratory Bird Treaty Act	FHWA
California Fish and Game Code Section 1602	CDFW
California Fish and Game Code Sections 3503 and 3503.5: protection of birds and raptors	CDFW
California Fish and Game Code Sections 3511, 3513, 4700, and 5050: fully protected species	CDFW

USFWS = U.S. Fish and Wildlife Service
USACE = U.S. Army Corps of Engineers
RWQCB = Regional Water Quality Control Board
FHWA = Federal Highway Administration
CDFW = California Department of Fish and Wildlife

A summary of consultation and coordination efforts related to the state and federal regulations is provided below.

5.1 Federal Endangered Species Act Consultation Summary

Inter-agency consultation with USFWS under Section 7 of the ESA is required for potential effects of the proposed project on vernal pool fairy shrimp and vernal pool tadpole shrimp. USFWS was consulted to obtain an official species list from the USFWS website. A Biological Assessment (BA) was prepared to allow Caltrans to initiate formal consultation with the USFWS.

No consultation with NMFS is required under Section 7 of the ESA for CCV steelhead because the species is expected to occur in the project area only seasonally and outside of the period when construction would occur; the proposed project would not directly or indirectly affect designated critical habitat for the species; and the temporary and relatively minor permanent habitat effects would not result in injury or mortality of individuals. Therefore, the proposed project would have *no effect* on CCV steelhead and designated critical habitat.

5.2 Essential Fish Habitat Consultation Summary

EFH for Pacific salmon (i.e., Chinook salmon) has been designated in Orchard Creek and Pleasant Grove Creek, including the portions in the BSA. Temporary increases in sedimentation and turbidity, contaminant spills, and pollutants from new asphalt and a relatively small amount of permanent fill in the channel represent the primary factors that potentially could adversely affect EFH in the BSA. However, the proposed project contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects on EFH in freshwater habitats. The proposed project would have *no adverse effect* on EFH for Pacific salmon..

5.3 California Endangered Species Act Consultation Summary

Two state-listed species, Swainson's hawk and California black rail, have the potential to occur in the BSA. Consultation with CDFW for potential impacts on this species will be conducted, as necessary, to ensure that project impacts are avoided and minimized. A CFGC Section 2081 Incidental Take Permit will not be required for Swainson's hawk because no take is anticipated. California black rail is a fully protected species and therefore, take will be avoided. No discussions with CDFW have occurred to date.

5.4 Wetlands and Other Waters Coordination Summary

The BSA contains numerous types of wetlands and other waters that are considered waters of the United States and waters of the State. As indicated in Chapter 4, the proposed project would result in placement of fill in these waterbodies. Therefore, the project proponent will comply with the CWA by obtaining permits from the Sacramento District of USACE, and with the Porter-Cologne Act by obtaining a permit from the Central Valley RWQCB before discharging fill into, or excavating within, federally and state-regulated waters and wetlands.

5.5 Invasive Species (Executive Order 13112)

With implementation of the avoidance and minimization measures described in Chapter 4, the proposed project will not result in new, severe infestations of invasive plant species.

5.6 Other

5.6.1 Federal Migratory Bird Treaty Act

With implementation of avoidance and minimization measures described in Chapter 4 for migratory birds, the proposed project will avoid violation of the MBTA.

5.6.2 California Fish and Game Code

Sections 1602, 3503, 3503.5, 3511, 3513, 4700, and 5050 of the CFGC apply to the proposed project and are described below.

5.6.3 Fish Passage and Water for Fish (FGC Sections 5901 and 5937)

The project proponent will not prevent or impede the passing of fish or other aquatic organisms up- and downstream of streams in the project. The project proponent shall allow sufficient water at all times to pass through the clear water diversion for fish or other aquatic organisms.

5.6.3.1 Section 1602: Lake or Streambed Alteration Agreements

The project proponent will enter into an LSAA with CDFW for impacts on the bed, bank, or channel of streams and drainages within the BSA.

5.6.3.2 Sections 3503 and 3503.5: Protection of Birds and Raptors

The project proponent will avoid violation of CFGC Sections 3503 and 3503.5 by implementing measures identified in Chapter 4 for birds and raptors.

5.6.3.3 Sections 3511, 3513, 4700, and 5050: Fully Protected Species

The project proponent will avoid violation of CFGC Section 3511 (fully protected birds) by implementing measures identified in Chapter 4 for white-tailed kite and California black rail.

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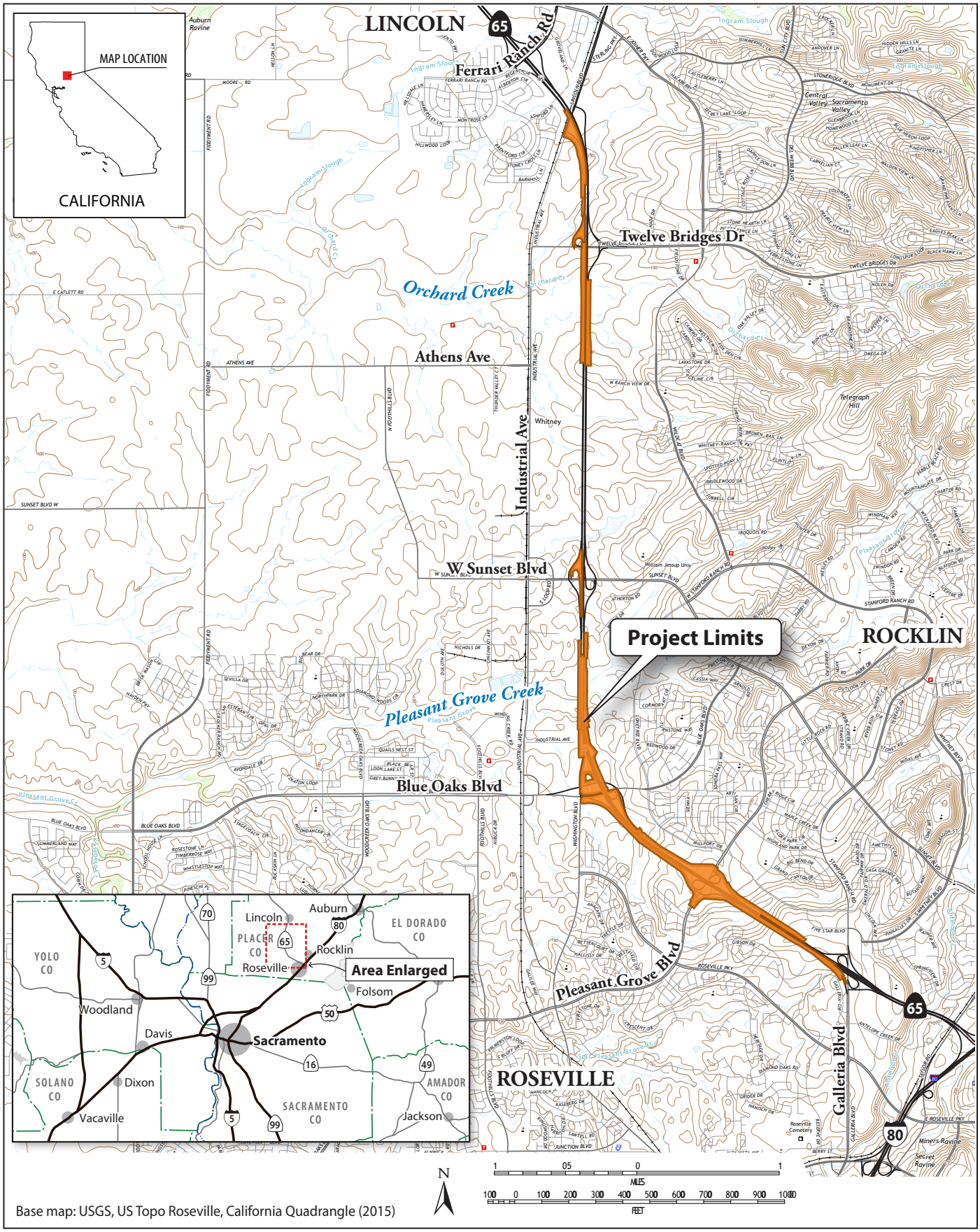
Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer (eds.). 1988. *California's Wildlife. Volume 1: Amphibians and Reptiles*. California Statewide Wildlife Habitat Relationships System. California Department of Fish and Game. Sacramento, CA.

6.2 Personal Communications

Airola, Dan. Purple martin private researcher. Sacramento, CA. September 2014—Telephone conversation with ICF wildlife biologist Angela Alcala regarding recent survey efforts for purple martin within Placer County.

Helm, Brent. Invertebrate Ecologist. Owner of Helm Biological Consulting. Sheridan, CA. March 2014–phone conversation with Angela Alcala of ICF International regarding distribution and abundance of vernal pool fairy shrimp and vernal pool tadpole shrimp in Placer County.

Appendix A **Figures**



Graphics...00128.14 (5-27-2016)

Figure 1
Project Vicinity
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.2/12.8 (EA-03-1F170/EFIS 0300001103)

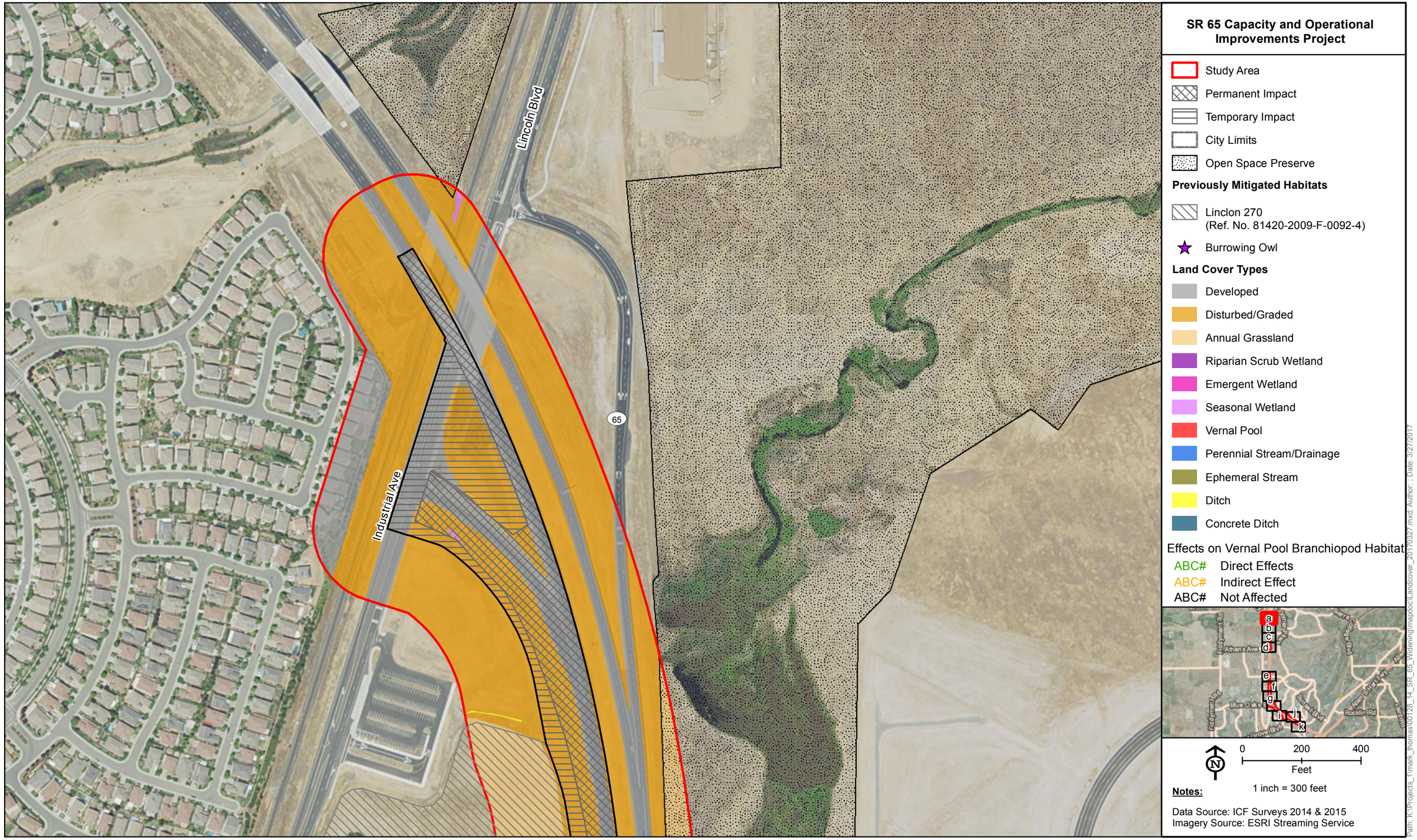


Figure 2a
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

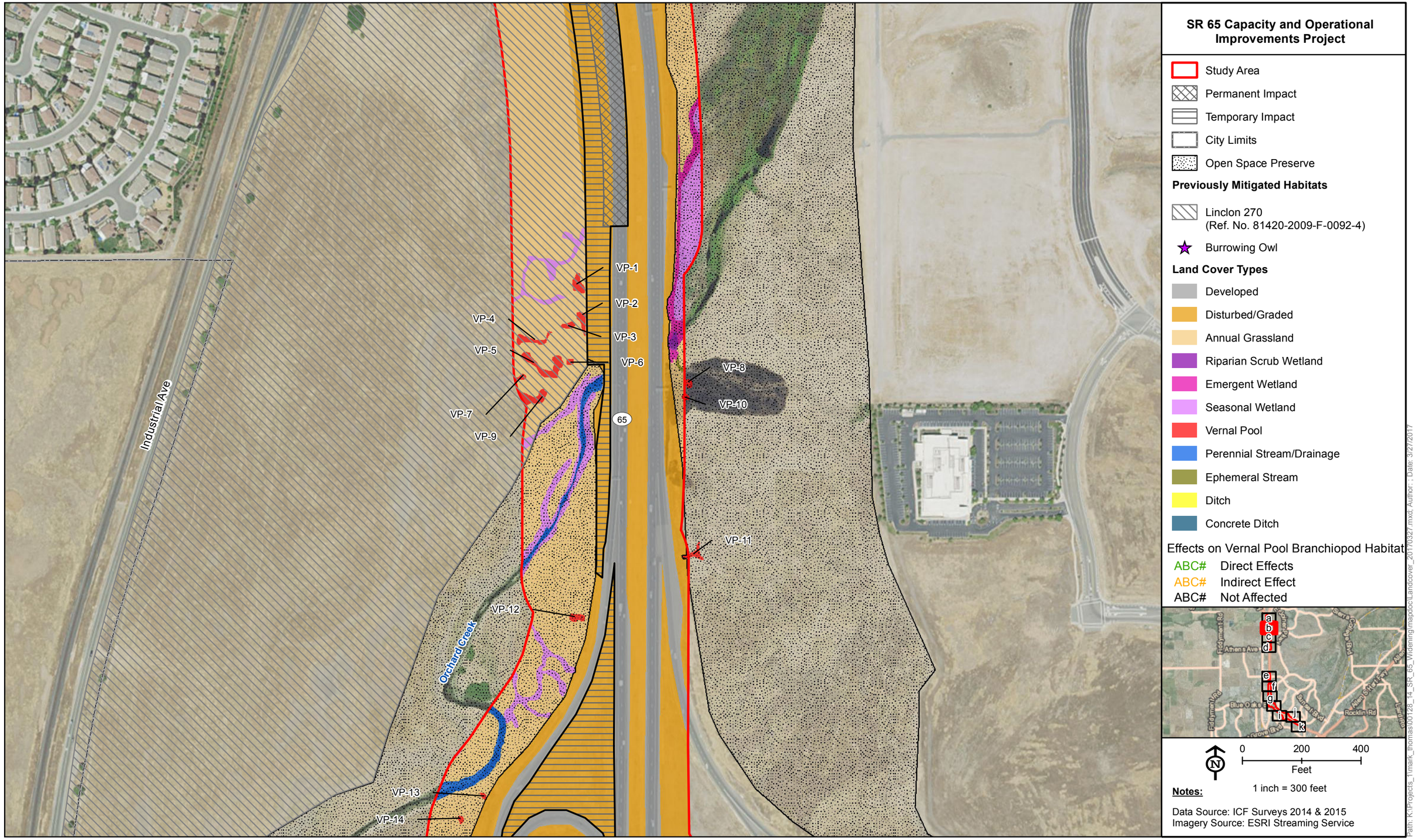


Figure 2b
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

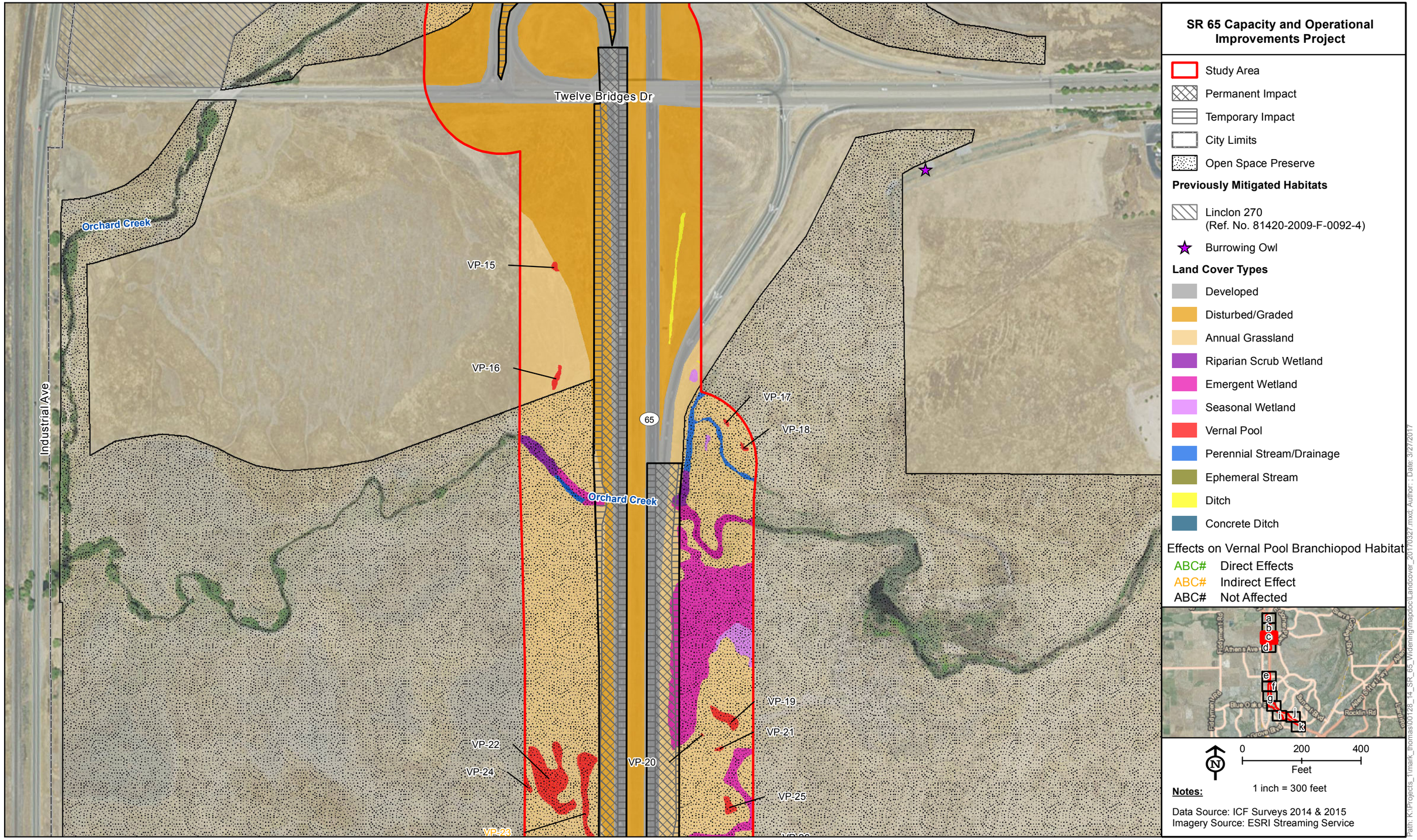


Figure 2c
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

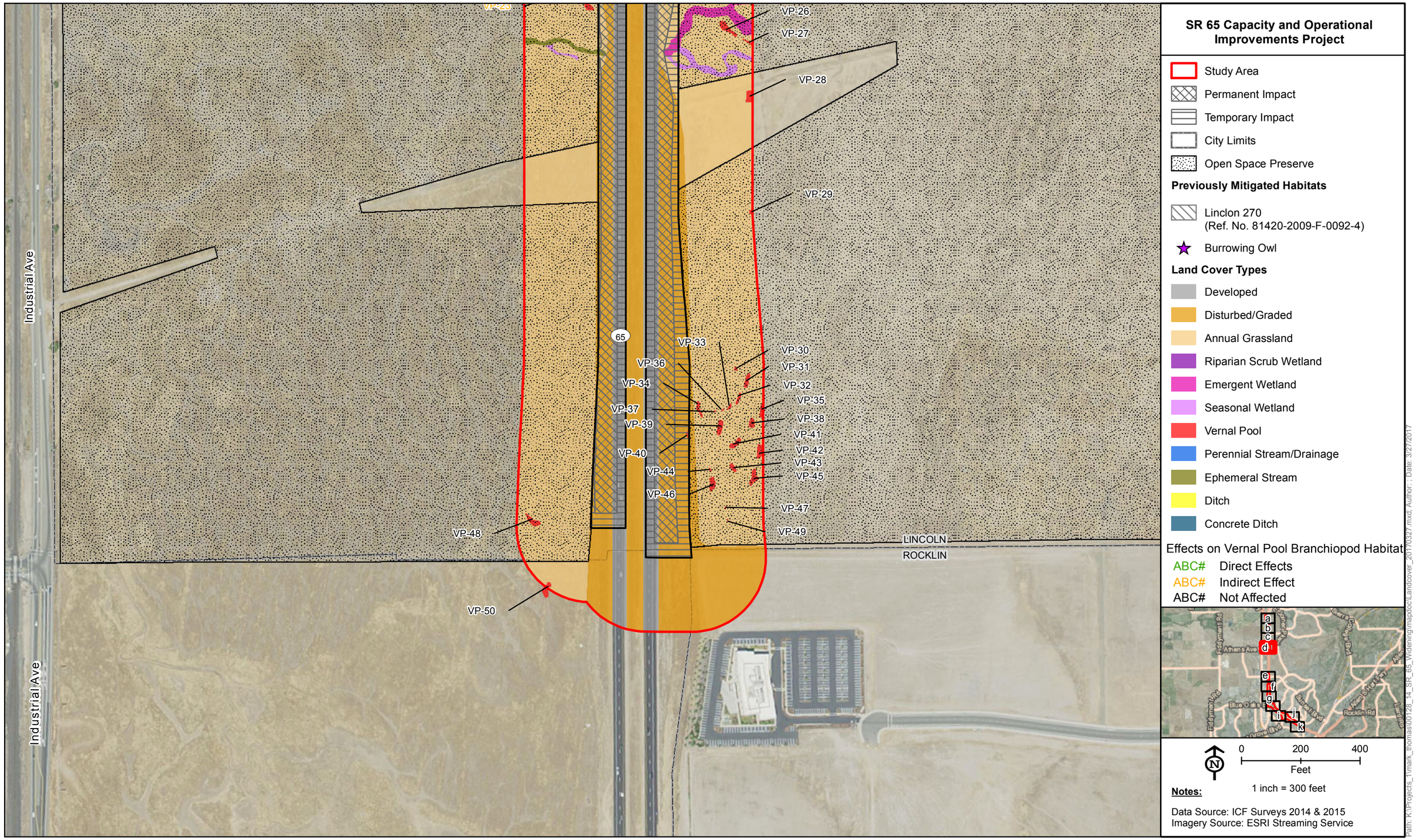


Figure 2d
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

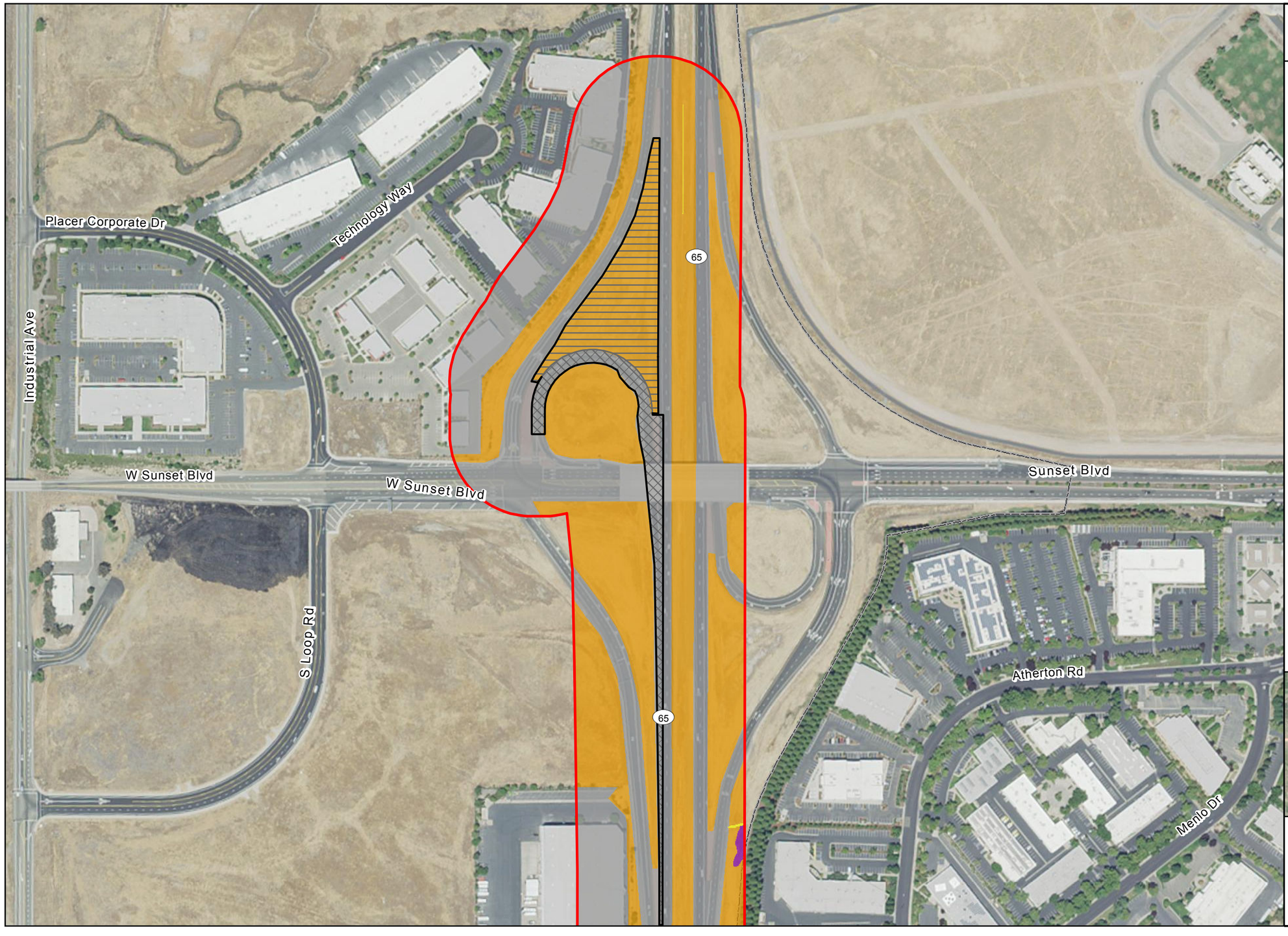


Figure 2e
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

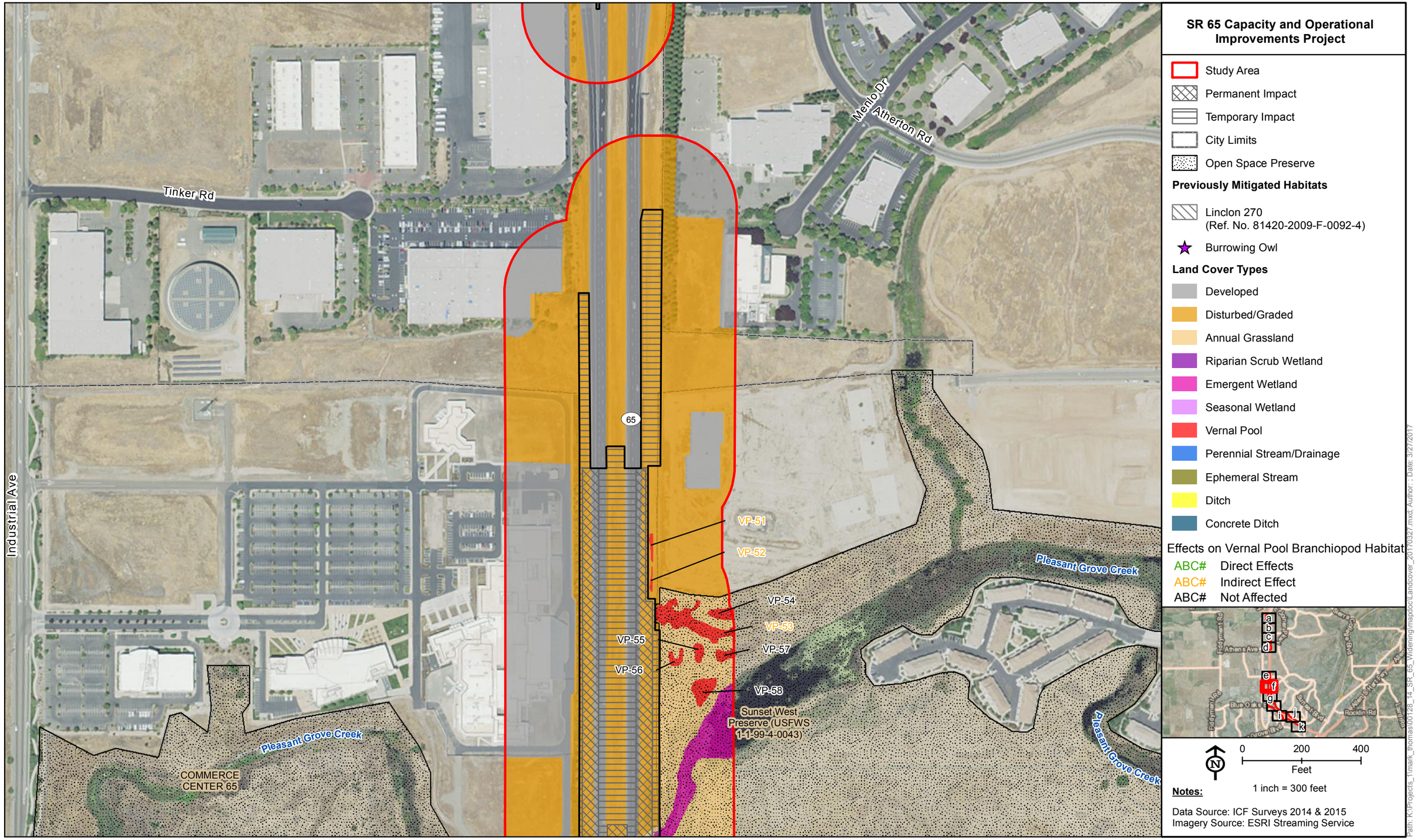


Figure 2f
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

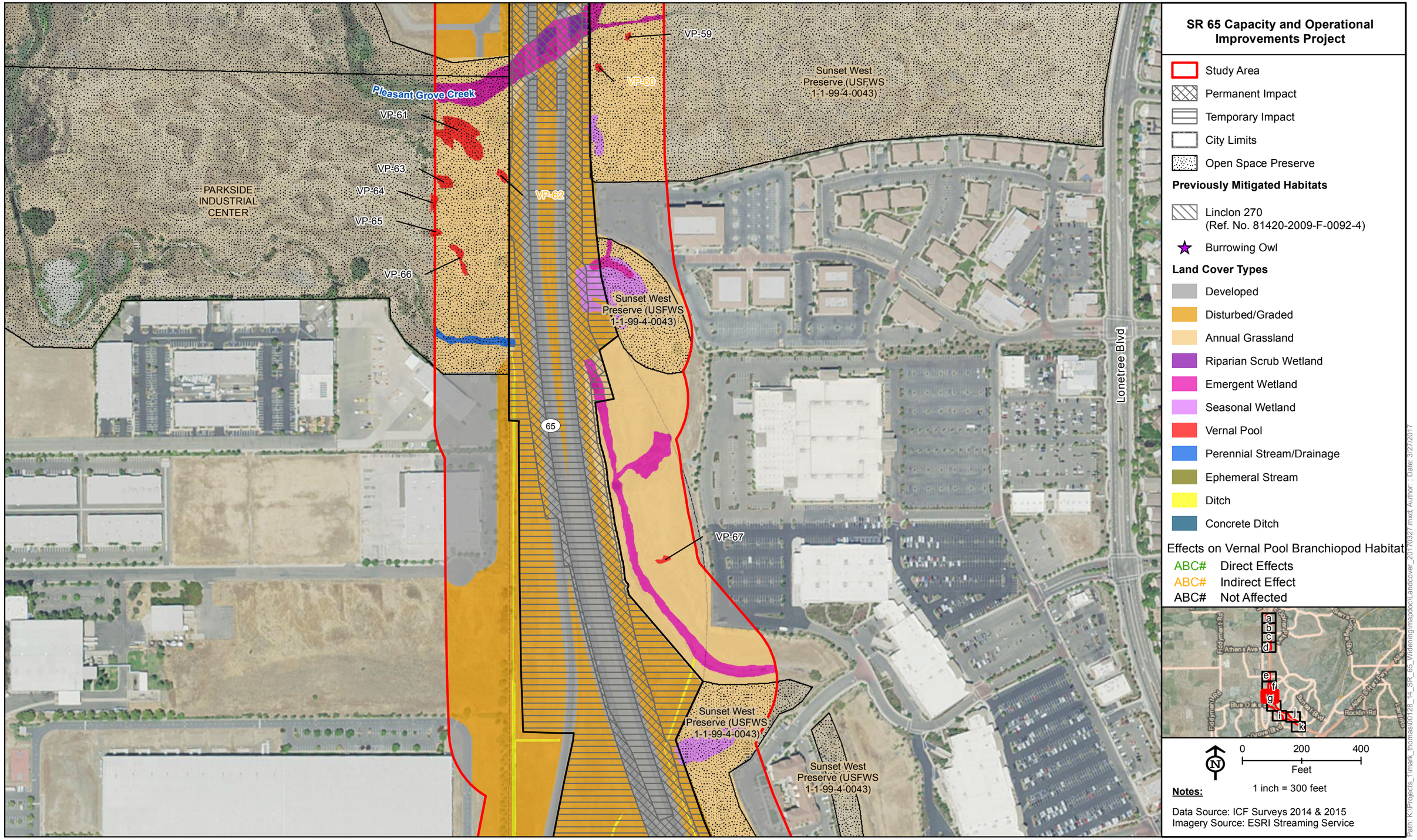
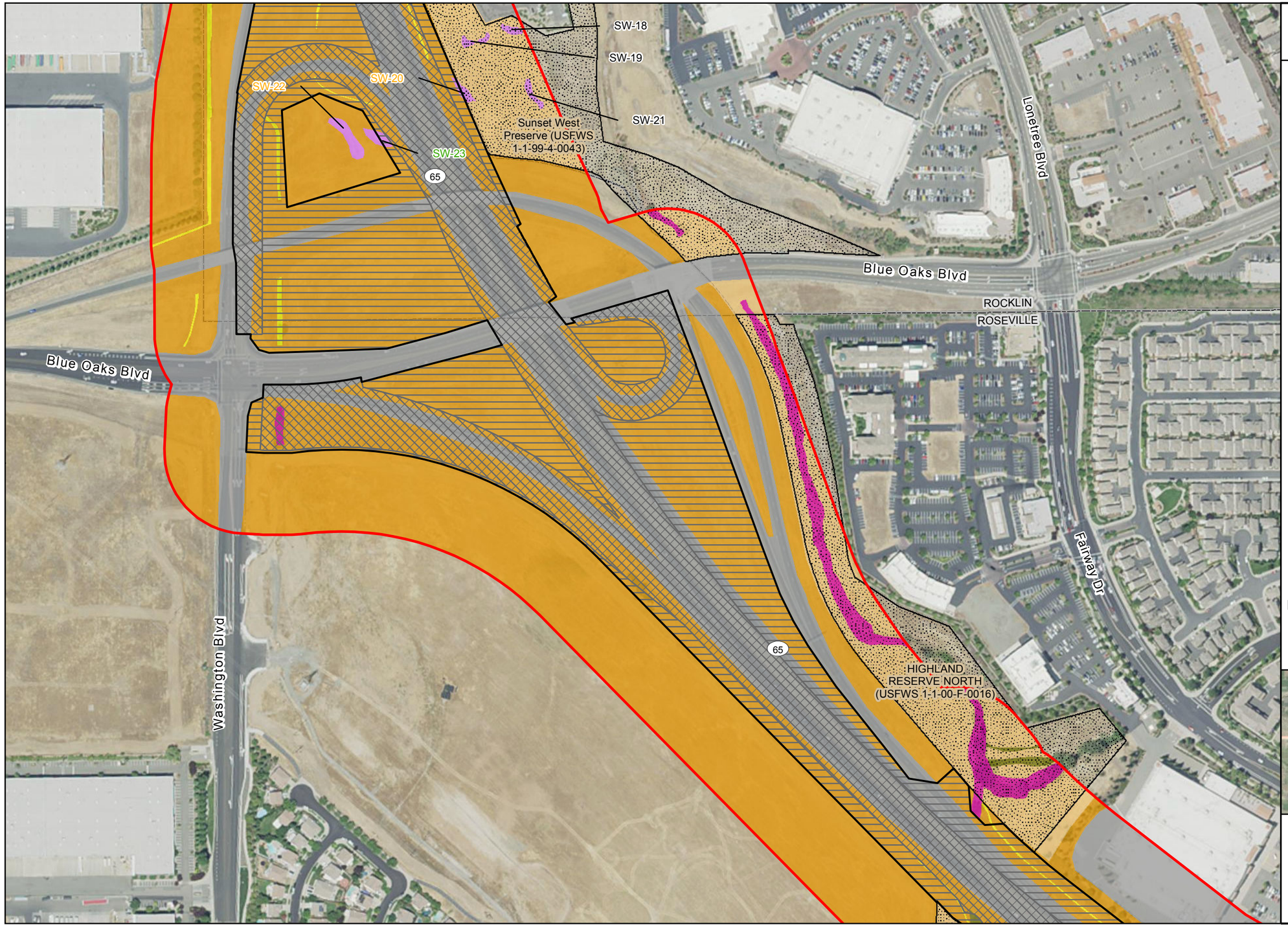


Figure 2g
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)



SR 65 Capacity and Operational Improvements Project

- Study Area
- Permanent Impact
- Temporary Impact
- City Limits
- Open Space Preserve

Previously Mitigated Habitats

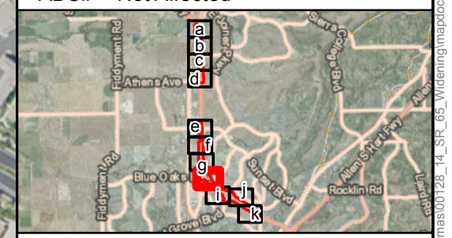
- Linclon 270 (Ref. No. 81420-2009-F-0092-4)
- Burrowing Owl

Land Cover Types

- Developed
- Disturbed/Graded
- Annual Grassland
- Riparian Scrub Wetland
- Emergent Wetland
- Seasonal Wetland
- Vernal Pool
- Perennial Stream/Drainage
- Ephemeral Stream
- Ditch
- Concrete Ditch

Effects on Vernal Pool Branchiopod Habitat

- ABC# Direct Effects
- ABC# Indirect Effect
- ABC# Not Affected



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Feet

1 inch = 300 feet

Notes:

Data Source: ICF Surveys 2014 & 2015
Imagery Source: ESRI Streaming Service

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Figure 2h
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

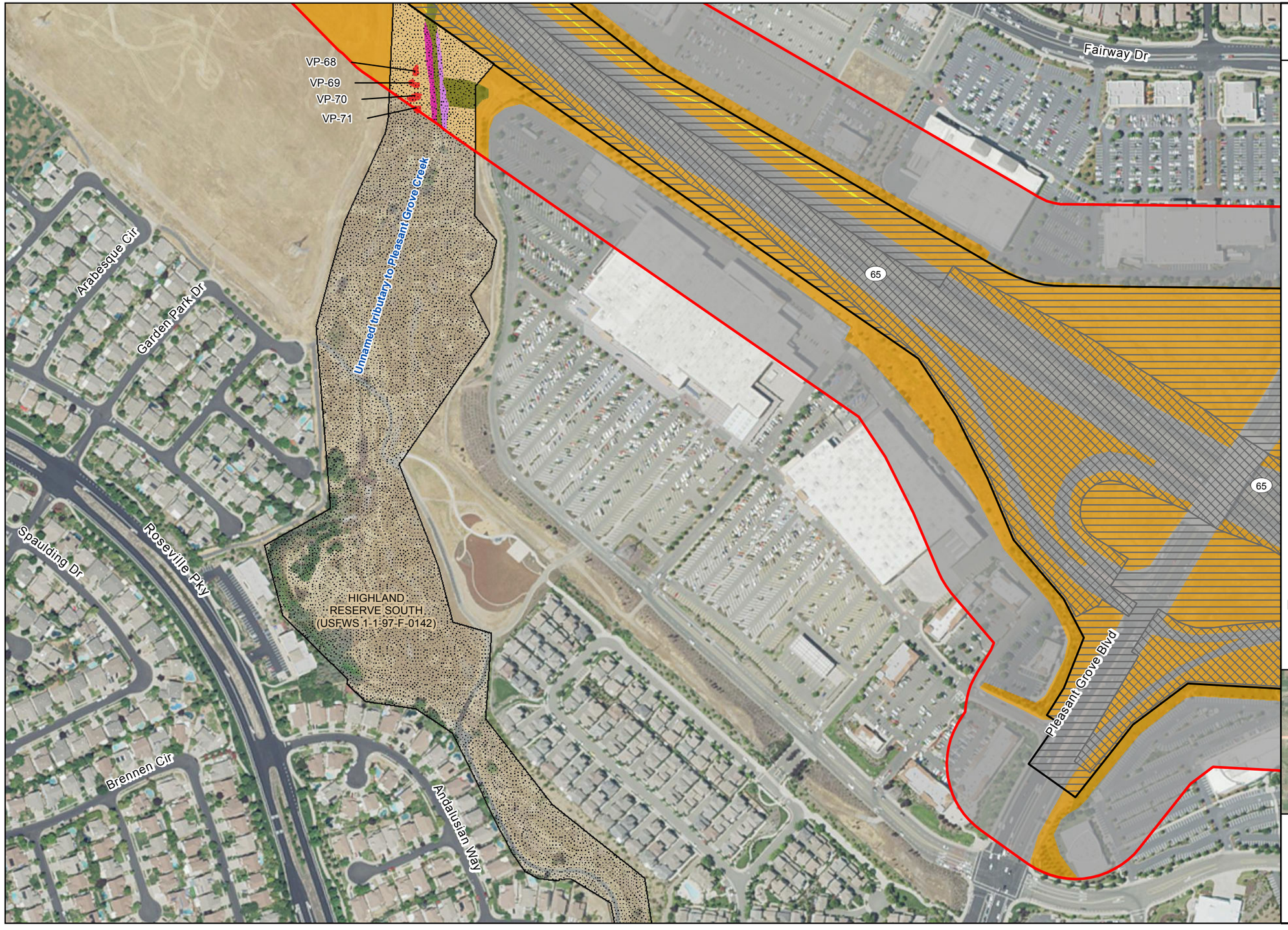


Figure 2i
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

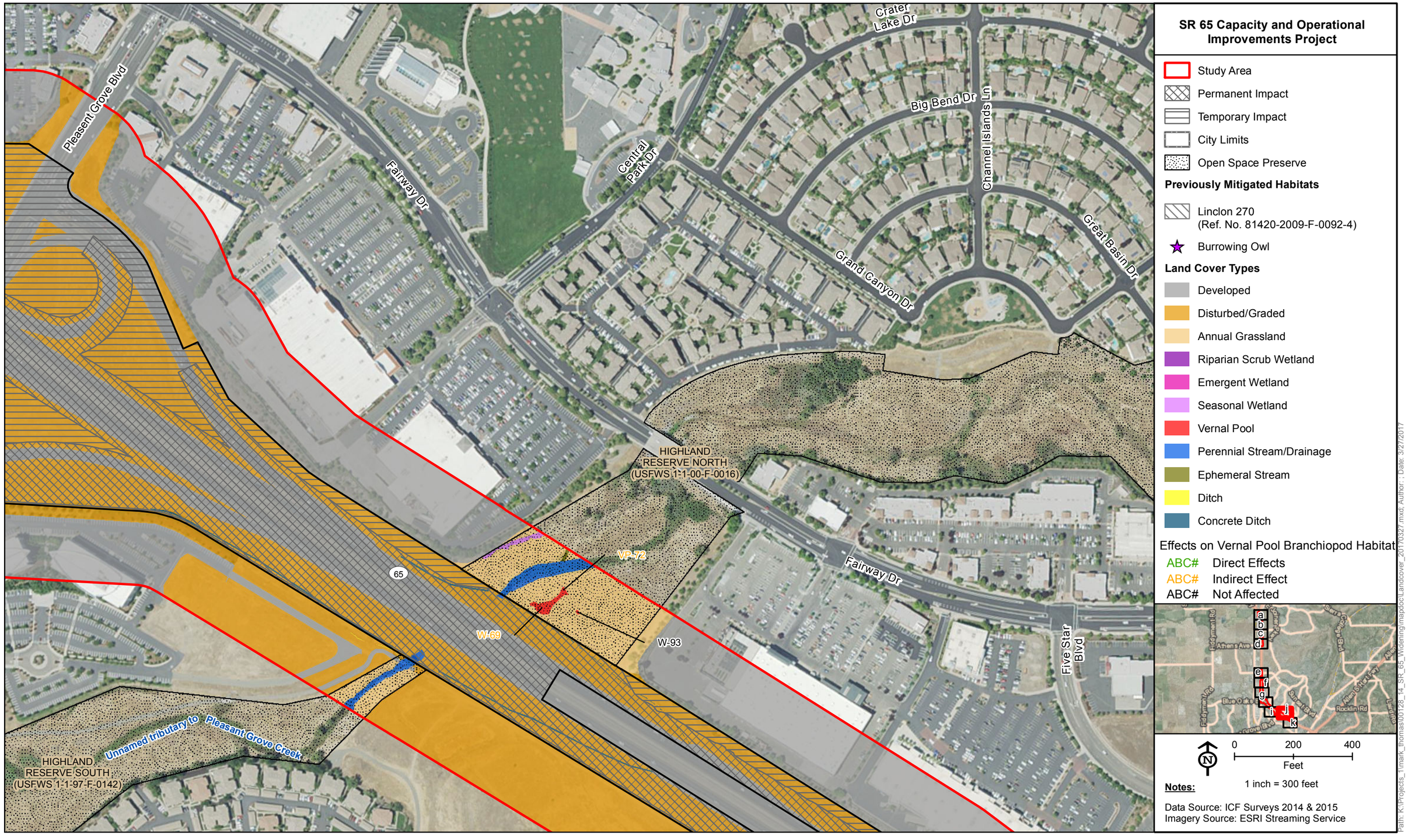
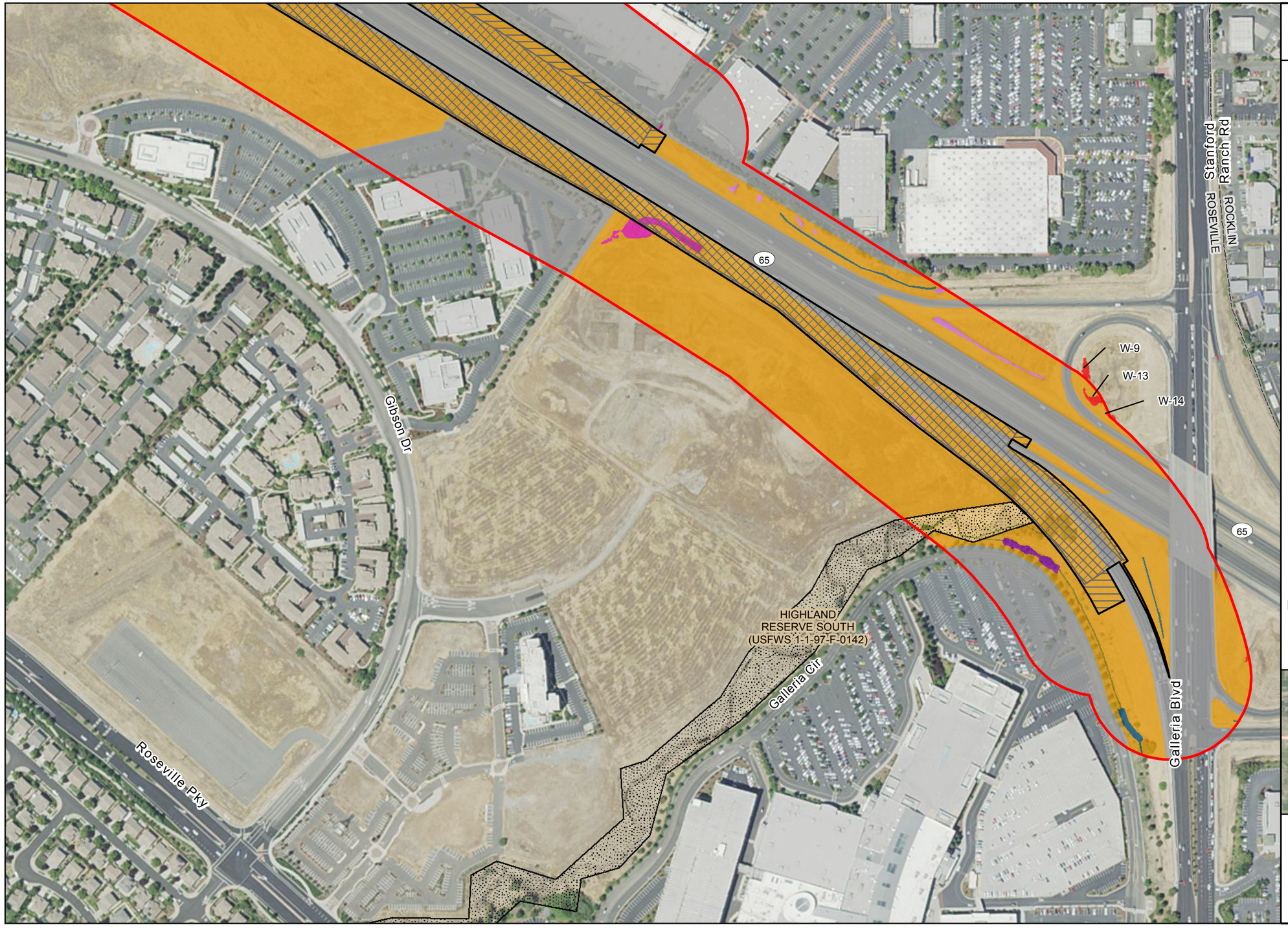


Figure 2j
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)



SR 65 Capacity and Operational Improvements Project

- Study Area
- Permanent Impact
- Temporary Impact
- City Limits
- Open Space Preserve

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- ABC# Direct Effects
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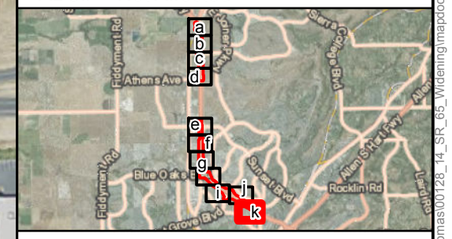

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Feet

1 inch = 300 feet

Notes:

Data Source: ICF Surveys 2014 & 2015
Imagery Source: ESRI Streaming Service

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Figure 2k
Biological Resources and Project Impacts
State Route 65 Capacity and Operational Improvements
03-PLA-65-PM 6.5/12.8 (EA 03-1F170/EFIS 0300001103)

Appendix B Database Search and Species Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Citrus Heights (3812163) OR Folsom (3812162) OR Gold Hill (3812182) OR Lincoln (3812183) OR Pleasant Grove (3812174) OR Rio Linda (3812164) OR Rocklin (3812172) OR Roseville (3812173) OR Sheridan (3812184))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Alkali Meadow Alkali Meadow	CTT45310CA	None	None	G3	S2.1	
Alkali Seep Alkali Seep	CTT45320CA	None	None	G3	S2.1	
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Andrena subapasta an andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Chloropyron molle ssp. hispidum hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T2	S2	1B.1
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	PMJUN011L2	None	None	G2T2	S2	1B.1
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Navarretia myersii ssp. myersii pincushion navarretia	PDPLM0C0X1	None	None	G2T2	S2	1B.1
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Volcanic Mud Flow Vernal Pool Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	G1	S1.1	
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Orcuttia viscida Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	G1	S1	1B.1

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Thamnophis gigas giant garter snake	ARADB36150	Threatened	Threatened	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	

Record Count: 48

Inventory of Rare and Endangered Plants - 7th edition interface

v7-16may 5-11-16

Status: search results - Mon, May. 16, 2016 20:07 ET c

{QUADS_123} =~ m/528D|512A|512B|527B|527C|511B|528A|528E Search

Tip: Word fragments must be completed with a wildcard, e.g., `esch* hyp*` for Eschscholzia hypecoides.[all tips and help.][search history]

Your Quad Selection: Roseville (528D) 3812173, Citrus Heights (512A) 3812163, Rio Linda (512B) 3812164, Gold Hill (527B) 3812182, Rocklin (527C) 3812172, Folsom (511B) 3812162, Lincoln (528A) 3812183, Sheridan (528B) 3812184, Pleasant Grove (528C) 3812174

Hits 1 to 10 of 10

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	☐	1	**Balsamorhiza macrolepis**	big-scale balsamroot	Asteraceae	List 1B.2
	☐	1	**Chloropyron molle ssp. hispidum**	hispid bird's-beak	Orobanchaceae	List 1B.1
	☐	1	**Downingia pusilla**	dwarf downingia	Campanulaceae	List 2B.2
	☐	1	**Gratiola heterosepala**	Boggs Lake hedge-hyssop	Plantaginaceae	List 1B.2
	☐	1	**Juncus leiospermus var. ahartii**	Ahart's dwarf rush	Juncaceae	List 1B.2
	☐	1	**Juncus leiospermus var. leiospermus**	Red Bluff dwarf rush	Juncaceae	List 1B.1
	☐	1	**Legenere limosa**	legenere	Campanulaceae	List 1B.1
	☐	1	**Navarretia myersii ssp. myersii**	pincushion navarretia	Polemoniaceae	List 1B.1
	☐	1	**Orcuttia viscida**	Sacramento Orcutt grass	Poaceae	List 1B.1
	☐	1	**Sagittaria sanfordii**	Sanford's arrowhead	Alismataceae	List 1B.2

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2017-SLI-0029 October 05, 2016
Event Code: 08ESMF00-2017-E-00044
Project Name: State Route 65 Capacity and Operational Improvements Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2017-SLI-0029
Event Code: 08ESMF00-2017-E-00044

Project Type: TRANSPORTATION

Project Name: State Route 65 Capacity and Operational Improvements Project
Project Description: The California Department of Transportation (Caltrans), in cooperation with the Placer County Transportation Planning Agency (PCTPA), Placer County, and the Cities of Roseville, Rocklin, and Lincoln, proposes to construct capacity and operational improvements on State Route 65 from north of Galleria Boulevard/Stanford Ranch Road to Lincoln Boulevard (6.6 miles, from post miles 6.2 to 12.8) in Placer County, California.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-121.29936290738888 38.815502413613835, -121.29970389674511 38.8034028996184, -121.29838731261921 38.798016102999334, -121.2946078569791 38.79314933901859, -121.28287366668081 38.78612391940674, -121.28276562511388 38.78604387203814, -121.28260609141172 38.785828985050046, -121.28256073006717 38.785702403417, -121.28254746745573 38.78543509924023, -121.28263750728033 38.78518306700069, -121.28271755464893 38.78507502543376, -121.28293244163702 38.78491549173159, -121.28319202223184 38.784850335499584, -121.28345677764095 38.784889476183416, -121.28357835968637 38.784946907600194, -121.29552549882094 38.792113539751966, -121.29963649376712 38.79741267230559, -121.30105845897486 38.80316698768802, -121.3010777989526 38.80334917813855, -121.30073474886109 38.815512084755674, -121.30073474886109 38.86002827417934, -121.30068253625399 38.86029076468096, -121.30053384732884 38.86051329338319, -121.30031131862661 38.86066198230835, -121.30004882812499 38.86071419491544, -121.29978633762336 38.86066198230835, -121.29956380892114 38.86051329338319, -121.29941511999598 38.86029076468096, -121.29936290738888 38.86002827417934, -

121.29936290738888 38.815502413613835)))

Project Counties: Placer, CA

Endangered Species Act Species List

There are a total of 8 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California red-legged frog *(Rana draytonii)* Population: Wherever found	Threatened	Final designated	
Crustaceans			
Conservancy fairy shrimp *(Branchinecta conservatio)* Population: Wherever found	Endangered	Final designated	
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Wherever found	Threatened	Final designated	
Vernal Pool tadpole shrimp *(Lepidurus packardi)* Population: Wherever found	Endangered	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Wherever found	Threatened	Final designated	
steelhead *(Oncorhynchus (=salmo)*	Threatened		

mykiss) Population: Northern California DPS			
Insects			
Valley Elderberry Longhorn beetle *(Desmocerus californicus dimorphus)* Population: Wherever found	Threatened	Final designated	
Reptiles			
Giant Garter snake *(Thamnophis gigas)* Population: Wherever found	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix C Preliminary Delineation of Wetlands and Other Waters of the U.S.

Bound Separately

Appendix D Species Observed in the Biological Study Area

Appendix D Species Observed in the Biological Study Area

Table D-1. Plant Species Observed in the Biological Study Area

Scientific Name	Common Name
Acer palmatum	Japanese maple
Achyrachaena mollis	blow wives
Acmispon americanus var. *americanus*	Spanish clover
Agrostis avenacea	Pacific bentgrass, blowngrass
Aira caryophyllea	common silver-hair grass
Alopecurus saccatus	Pacific foxtail
Alopecurus sp.	fox tail
Amsinckia menziesii	fiddleneck
Anagallis arvensis	scarlet pimpernel
Andropogon virginicus	broomsedge bluestem
Avena barbata	slender wild oats
Avena fatua	wild oats
Azolla filiculoides	large mosquito-fern
Baccharis pilularis	coyote bush
Brassica nigra	black mustard
Briza minor	lesser quaking grass
Brodiaea elegans	harvest brodiaea
Brodiaea minor	dwarf brodiaea
Bromus carinatus	California bromegrass
Bromus diandrus	rip-gut grass
Bromus hordeaceus	soft brome
Bromus madritensis subsp. *rubens*	red brome
Bromus tectorum	cheatgrass
Callitriche sp.	water-starwort
Calochortus luteus	yellow mariposa lily
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	yellow star-thistle
Centromadia fitchii	spikeweed
Cerastium glomeratum	mouse-ear chickweed
Cirsium vulgare	bull thistle
Convolvulus arvensis	common bindweed
Crassula connata	sand pygmyweed
Croton setiger	dove weed
Cynodon dactylon	Bermuda grass
Cynosurus echinatus	hedgehog dogtail grass
Cyperus eragrostis	tall flat sedge
Cyperus sp.	flat sedge
Deschampsia danthonioides	annual hair grass
Dittrichia graveolens	stinkweed
Downingia bicornuta	bristled downingia
Downingia ornatissima	ornate downingia
Echinochloa crus-galli	barnyard grass
Eleocharis macrostachya	common spike-rush
Elymus caput-medusae	medusa head

Scientific Name	Common Name
Elymus glaucus	blue wild rye
Epilobium ciliatum	fringed willowherb
Erodium botrys	long-beak stork's-bill
Erodium cicutarium	red-stemmed filaree
Eryngium castrense	coyote thistle
Eschscholzia californica	California poppy
Eschscholzia lobbii	fryingpans
Festuca bromoides	sixweeks grass
Festuca myuros	rat-tail six-weeks grass
Festuca perennis	perennial rye grass
Galium parisiense	wall bedstraw
Gastridium phleoides	nit grass
Geranium dissectum	wild geranium
Geranium molle	soft geranium
Glyceria declinata	waxy mannagrass
Gratiola ebracteata	common hedge-hyssop
Helminthotheca echioides	bristly ox-tongue
Hirschfeldia incana	Mediterranean mustard
Holocarpha virgata	tarweed
Hordeum marinum subsp*. gussoneanum*	seaside barley
Hordeum murinum subsp. *leporinum*	wall barley
Hypericum perforatum	Klamath weed
Hypochaeris glabra	smooth cat's-ear
Juncus bufonius	toad rush
Juncus effusus	soft rush
Juncus patens	spreading rush
Lactuca saligna	narrow-leaved lettuce
Lactuca serriola	prickly lettuce
Lasthenia fremontii	Fremont's goldfields
Lasthenia glaberrima	smooth goldfields
Lathyrus angulatus	angled peavine
Lavandula spp*.*	lavender
Leersia oryzoides	rice cut grass
Lemma sp.	duckweed
Leontodon saxatilis subsp*. longirostris*	lesser hawkbit
Lepidium latifolium	perennial pepperweed
Leptochloa fusca subsp*. fascicularis*	bearded sprangletop
Ludwigia sp*.*	water primrose
Lupinus bicolor	bicolor lupine
Lycopus americanus	cut-leaf water-horehound
Lythrum hyssopifolium	hyssop loosestrife
Marrubium vulgare	common horehound
Marsilea vestita	hairy waterclover
Medicago polymorpha	bur-clover
Melica californica	California melick
Mentha arvensis	field mint
Mentha pulegium	pennyroyal
Mimulus guttatus	seep spring monkeyflower
Mimulus tricolor	tricolor monkeyflower
Navarretia intertexta	needleleaf navarretia
Navarretia leucocephala	white-headed navarretia
Parentucellia viscosa	yellow glandweed

Scientific Name	Common Name
Paspalum dilatatum	golden crown grass
Paspalum distichum	jointed crown grass
Persicaria lapathifolia	common smartweed
Persicaria punctata	dotted smartweed
Petrorhagia dubia	windmill pink
Pinus spp.	ornamental pines
Plagiobothrys greenei	Greene's popcorn-flower
Plagiobothrys stipitatus	stalked popcorn-flower
Poa annua	annual blue grass
Pogogyne zizyphoroides	Sacramento mesamint
Polypogon australis	rabbit's-foot grass
Polypogon monspeliensis	annual rabbit's-foot grass
Populus fremontii	Fremont's cottonwood
Psilocarphus brevissimus	woolly marbles
Psilocarphus tenellus	slender woolly marbles
Pyrus calleryana	Callery pear
Ranunculus bonariensis	Carter's buttercup
Ranunculus muricatus	spinyfruit buttercup
Raphanus sativus	wild radish
Rubus armeniacus	Himalayan blackberry
Rumex conglomeratus	clustered dock
Rumex crispus	curly dock
Rumex pulcher	fiddle dock
Salix exigua	narrow-leaf willow
Salix gooddingii	Goodding's black willow
Salix lasiolepis	arroyo willow
Salsola kali	Russian thistle, tumbleweed
Schoenoplectus acutus	hardstem bulrush
Schoenoplectus mucronatus	bog bulrush
Sequoia sempervirens	coast redwood
Sherardia arvensis	blue fieldmadder
Solanum americanum	American black nightshade
Stipa pulchra	purple needlegrass
Triadica sebifera	Chinese tallowtree
Trichostema lanceolata	vinegarweed
Trifolium campestre	field clover
Trifolium depauperatum	balloon sack clover
Trifolium dubium	suckling clover
Trifolium hirtum	rose clover
Trifolium incarnatum	crimson clover
Trifolium variegatum	white-tip clover
Trifolium willdenovii	tomcat clover
Triteleia hyacinthina	white hyacinth
Typha angustifolia	narrowleaf cattail
Typha latifolia	broadleaf cattail
Verbascum blattaria	moth mullein
Verbena lasiostachys	common verbena
Veronica americana	brooklime
Veronica peregrina subsp. *xalapensis*	purslane speedwell
Vicia sativa	garden vetch
Vicia villosa ssp. *varia*	winter vetch

Scientific Name	Common Name
Vicia villosa ssp. *villosa*	hairy vetch
Washingtonia robusta	Washington fan palm
Xanthium strumarium	rough cocklebur

Table D-2. Wildlife Species Observed or Detected in the Biological Study Area

Scientific Name	Common Name
Corvus brachyrhynchos	American crow
Falco sparverius	American kestrel
Turdus migratorius	American robin
Sayornis nigricans	Black phoebe
Euphagus cyanocephalus	Brewer's blackbird
Petrochelidon pyrrhonota	Cliff swallow
Junco hyemalis	Dark-eyed junco
Carpodacus mexicanus	House finch
Ardea herodias	Great blue heron
Charadrius vociferus	Killdeer
Zenaida macroura	Mourning dove
Colaptes auratus	Northern flicker
Buteo jamaicensis	Red-tailed hawk
Agelaius phoeniceus	Red-winged blackbird
Columba livia	Rock pigeon
Cathartes aura	Turkey vulture
Aphelocoma californica	Western scrub-jay
Sceloporus occidentalis	Western fence lizard
Lepus californicus	Black-tailed hare
Procyon lotor	Raccoon
Castor canadensis	American beaver
Spermophilus beecheyi	California ground squirrel

Appendix E **Representative Photographs**

Photo 1: Disturbed area along onramp to southbound SR 65 from Industrial Boulevard (facing northwest; 11/06/2015)

Photo 2: Disturbed ROW adjacent to grazed grassland along southbound SR 65 north of Twelve Bridges Drive (facing southwest; 2/05/2015)

Photo 3: Emergent wetland along Orchard Creek bordering northbound SR 65 south of Twelve Bridges Drive (facing south; 2/05/15)

Photo 4: Emergent wetland along Pleasant Grove Creek adjacent to southbound SR 65 (facing east; 2/05/15)

Photo 5: Remnant swallow nests on underside of southbound SR 65 bridge over Pleasant Grove Creek (facing south; 2/05/15)

Photo 6: Excavated channel with emergent wetland vegetation along northbound SR 65 north of Blue Oaks Boulevard (facing north; 2/05/2015)

Photo 7: Disturbed area along northbound SR 65 north of Blue Oaks Boulevard (facing east; 2/05/2015)

Photo 8: Ditch within southbound SR 65 off-ramp to Blue Oaks Boulevard (facing north; 2/05/2015)

Photo 9: Seasonal wetland within southbound SR 65 off-ramp to Blue Oaks Boulevard (facing northwest; 2/05/2015)

Photo 10: Unnamed drainage along southbound SR 65 at proposed culvert extension north of Pleasant Grove Boulevard (facing southeast; 11/06/2015)

Photo 11: Perennial drainage at proposed culvert extension along southbound SR 65 south of Pleasant Grove Boulevard (facing southeast; 11/06/2015)