Caldwell Creek Roadway Rehabilitation Project

MODOC COUNTY, CALIFORNIA
02-MOD-299-PM 24.5/33.5
EA#: 02-4F770
EFIS#: 02-1300-0031

Initial Study with Proposed Mitigated Negative Declaration

Prepared by the
State of California, Department of Transportation
Caltrans District 2
1657 Riverside Drive, MS-30
Redding, CA 96001

May 2016

General Information about this Document

What's in this document?

This Initial Study with proposed Mitigated Negative Declaration (IS/MND) examines the potential environmental effects of a proposed roadway rehabilitation project on State Route (SR) 299, in Modoc County. The purpose of the proposed project is to rehabilitate the existing roadway, thereby reducing ongoing costly preventative maintenance measures and extending the SR 299 service life for up to 20 years. Work would include full depth reclamation, roadway shoulder widening, and cement treatment and hot mix asphalt (HMA) overlay. The existing paved roadway and driveways will conform to the new proposed roadway work. This Initial Study was prepared to comply with the California Environmental Quality Act (CEQA). This document describes the purpose and need for the project, existing conditions, and potential effects from the proposed project.

What should you do?

- Please read this Initial Study
- You are invited to review the environmental document and technical studies. A printed copy of the document and technical studies can be found during business hours (Monday-Friday, 8:00 a.m. to 4:30 p.m.) at the Caltrans District Office located at 1657 Riverside Drive in Redding, or a printed copy of the document at the Alturas and Canby Post Offices (Monday-Friday, 7:30 a.m. to 4:00 p.m.) located at 240 N Main St, Alturas, CA and 22489 HWY 299 E, Canby, CA. An electronic copy of the environmental document is also available on Caltrans' website at www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm.
- We welcome your comments. If you have any information or concerns regarding the project, please send your written comments to Caltrans by the deadline. Submit comments via regular mail to:

  California Department of Transportation
  Attention: Chris Quiney
  North Region Office of Environmental Mgmt., MS-30
  1657 Riverside Drive
  Redding, CA 96001

- You may also submit comments via e-mail to Chris.Quiney@dot.ca.gov
- Submit comments by the deadline: June 11, 2016.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Chris Quiney, North Region Environmental Management,1657 Riverside Drive, Redding, CA 96001; (530) 225-3174 Voice, or use the California Relay Service TTY number, 711 or 1-800-735-2929.

Caldwell Creek Roadway Rehabilitation Project

In Modoc County, California on State Route 299
Post Miles 24.5/33.5

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION

Submitted Pursuant to: Division 13, California Public Resources Code

STATE OF CALIFORNIA
Department of Transportation

Amber Kelley

Amber Kelley
Office Chief - Redding
North Region Environmental Services
California Department of Transportation

4-29-16
Date

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

02-MOD-299-PM 24.5/33.5
EA#: 02-4F770
EFIS#: 02-1300-0031

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, California Public Resources Code

Project Description

The California Department of Transportation (Caltrans) using both State and Federal funds proposes to rehabilitate the existing State Route (SR) 299 from post mile (PM) 24.5 to 33.5 in Modoc County. The existing pavement is distressed and exhibits a rough ride. Simple (routine) preventative maintenance measures are no longer adequate as a cost effective strategy. The proposed rehabilitation project will include full depth reclamation, including cement treated base and a 0.45 ft hot mix asphalt (HMA) overlay. The existing paved roadway and driveways will conform to the new proposed roadway work. Metal beam guardrail (MBGR) and terminal sections will be replaced. From PM 30.5 to 33.5 the paved roadway shoulders will be widened to 4 feet. When completed the rehabilitation effort will extend the pavement service life for up to 20 years. Proposed project work, including equipment staging, will occur within the existing Caltrans right of way (ROW). A Storm Water Pollution Prevention Plan (SWPPP), including stormwater-related Best Management Practices (BMPs), will be prepared and implemented in accordance with the National Pollutant Discharge Elimination System (NPDES). The proposed project will also require a California Department of Fish and Wildlife (CDFW) 1602 Lake and Streambed Alteration Agreement (LSAA), a Central Valley Regional Water Quality Control Board (CVRWQCB) 401 Certification, and a U.S. Army Corps of Engineers (ACOE) 404 Nationwide 14 Permit for temporary and permanent impacts to jurisdictional stream channels and wetlands.

Determination

Caltrans has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The proposed project would have no effect with regard to aesthetics, agriculture and forest resources, land use and planning, mineral resources, population and housing, public services, recreation, utilities and service systems, and energy consumption.

- The proposed project would have a less-than-significant impact with regard to air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, and transportation/traffic.

- With the following mitigation measures incorporated, the proposed project would reduce effects to biological resources to less than significant:

    - Mitigation credits for permanent impacts to approximately 0.06 acres of stream channels and 0.51 acres of wetlands would be purchased In-Lieu Fee from the Pit River service area or from an ACOE approved mitigation bank at a proposed 2:1 ratio.

    - To accommodate passage under SR 299 for American badger and other small to medium sized mammals, two proposed drainage culverts would be upsized to at least 4.5 ft in diameter for areas within PM 32.4 to 33.0 and PM 25.7 to 26.0. The culverts would be easily accessible, lengthened to the toe of roadway slope with appropriate substrate leading up to a culvert to encourage mammal passage. Rip

rap with a mix of smaller rock, gravel, and surrounding native material to fill in large gaps would be suitable for passage. Routine maintenance would occur to ensure no culvert blockage. Clear visibility through to the other end of the crossing is essential. If scouring following storms prevents access, the scoured rocks or soil would be replaced with like materials to eliminate "hanging culverts" and not replaced with boulders, rip-rap or other substrates unsuited to the animal species the culvert was intended to benefit (Caltrans, 2009).

- Prior to grading and construction activities, the entire alignment would be surveyed for active American badger dens within the proposed grading area. If an active den is identified, appropriate exclusion or relocation methods should be utilized including live traps, one way doors, or other approved methods. Efforts would be conducted through coordination with CDFW.

- For proposed in-water activities within Hot Creek, in order to avoid entrainment or impingement of hardhead, pit roach, or other aquatic species, a qualified biologist would be required to be onsite to salvage and relocate any fish species or other aquatic organisms potentially occurring in the work area. Fish relocation efforts shall be executed and occur if a cofferdam or any other water diversion is necessary.

- Prior to the initiation of project construction activities occurring during the bird nesting season (March 15th through September 1st), the entire project area would be surveyed by a qualified biologist for potentially nesting greater sandhill crane and Swainson's hawk. If greater sandhill crane or Swainson's hawk are observed nesting within ½ mile of project construction, a qualified biologist would monitor nesting activity to ensure no disturbance is occurring as a result of project construction. CDFW would be notified of the nesting activity if a qualified biologist determines project construction activities have the potential to disturb the nest site.

- Prior to project grading activities, the two small populations of Janish's beardtongue and dwarf fleabane within the ESL would be relocated to suitable habitat where they will be undisturbed upon completion of the replanting effort. Seed collection and planting would also be a suitable method for plant conservation. The planting location should be in an undisturbed area within the ESL or offsite.

DRAFT

_____ _____

Amber Kelley
Office Chief - Redding
North Region Environmental Services
California Department of Transportation

Date

Table of Contents

Chapter 1. Proposed Project 1

Project Title 1
Lead Agency Name and Address 1
Contact Person and Phone Number 1
Project Location 1
Project Sponsor's Name and Address 1
Purpose and Need 1
Project Description 1
Project Alternatives 7
Permits and Approvals 7
Environmental Factors Potentially Affected 8
Environmental Determination 8

Chapter 2. CEQA Environmental Checklist 9

Chapter 3. Discussion of Environmental Impacts 23

3.1 Air Quality 23
3.2 Biological Resources 24
3.3 Cultural Resources 51
3.4 Geology and Soils 52
3.5 Greenhouse Gas Emissions 53
3.6 Hazards and Hazardous Materials 57
3.7 Hydrology and Water Quality 58
3.8 Noise 60
3.9 Transportation and Traffic 61
3.10 Mandatory Findings of Significance 62

Chapter 4. Mitigation Measures 63

Chapter 5. List of Preparers 65

Chapter 6. References 67

Chapter 1. Proposed Project

Project Title
Caldwell Creek Roadway Rehabilitation Project

Lead Agency Name and Address
California Department of Transportation, District 2
Office of Environmental Management, MS-30
1657 Riverside Drive
Redding, CA 96001

Contact Person and Phone Number
Chris Quiney
Caltrans Environmental Branch Chief
Phone: (530) 225-3174

Project Location
The project is located on SR 299, from PM 24.5 to PM 33.5 (Figure 1).

Project Sponsor's Name and Address
California Department of Transportation, District 2
Office of Environmental Management, MS-30
1657 Riverside Drive
Redding, CA 96001

Purpose and Need
The purpose of the proposed project is to reduce distressed lane miles on SR 299 by restoring the service life for up to 20 additional years and providing a roadway that conforms to existing paved approaches, has minimal maintenance requirements, and exhibits improved ride quality. The need of the proposed project includes poor existing pavement condition and lack of standard travel lane and shoulder width. Simple (routine) preventative maintenance measures are no longer adequate as a cost effective strategy.

Project Description

The California Department of Transportation (Caltrans), using both state and federal funds proposes to rehabilitate the existing State Route (SR) 299 from post mile (PM) 24.5 through 33.5, in Modoc County (**Table 1**). The existing pavement is distressed and exhibits a rough ride. Simple preventative maintenance measures are no longer adequate as a cost effective strategy. The proposed rehabilitation project will include full depth reclamation, including cement treated base and a 0.45 ft hot mix asphalt (HMA) overlay. The existing paved roadway and driveways will conform to the new proposed roadway work. Metal beam guardrail (MBGR) and terminal sections will be replaced. From PM 30.5 to 33.5 the paved roadway shoulders will be widened to 4 feet. When completed the roadway improvements will likely extend the SR 299 service life for up to 20 years. Roadway cut and fill activities will include ground disturbance, drainage/culvert improvements, and vegetation/tree removal. Existing utilities will be relocated where necessary. **Appendix A** shows the preliminary project grading footprint. Construction is proposed to occur over one season, utilizing one way traffic control.

Staging of construction equipment and materials will take place at the adjacent work areas within the environmental study limits (ESL), and all work is proposed within the existing Caltrans ROW.

Table 1: Proposed SR 299 Improvements

Post Miles	Conform to Approaches	Replace MBGR and Terminal Sections	Full Reclamation with HMA Overlay	Widen Roadway Shoulders 4 ft. (8 ft. total)
24.5 – 30.5	X	X	X	
30.5 – 33.5	X	X	X	X

As standard practice, Environmentally Sensitive Area (ESA) fencing would be used to prevent unnecessary encroachment of construction activities beyond the work area and minimize impacts to sensitive resources that may be impacted by the project such as western juniper woodland, big sagebrush shrubland, and waters of the U.S. The ESL is approximately 143.8 acres and includes all potential areas of project construction and related activities. Within the ESL approximately 70.4 acres (work area) will be impacted as a result of the project. The work area includes the permanent construction limits and staging areas. A majority of the work area is located within disturbed/ruderal habitat, which includes existing roadway/shoulder areas, rural residential areas (access roads, fencing and landscaping), and previously disturbed adjacent roadway areas within the Caltrans ROW that serve as utility corridors. Removal of existing upland vegetation would not exceed the minimum necessary to complete the project. To minimize the spread and/or further introduction of invasive species, prior to the end of construction, all disturbed areas would be stabilized and reseeded with a suitable cover crop (such as winter wheat) that will not persist on site. A regionally appropriate California native seed mix would be applied during the first or second year to provide succession from the erosion control cover crop for the establishment of native plants. As a standard practice, tree removal will take place between October 1st and February 15th to avoid potential impacts to migratory birds or potentially roosting bats. As an additional standard practice, prior to the initiation of project construction activities occurring during the bird nesting season (March 15th through September 1st), the entire project area would be surveyed for nesting birds by a qualified biologist.

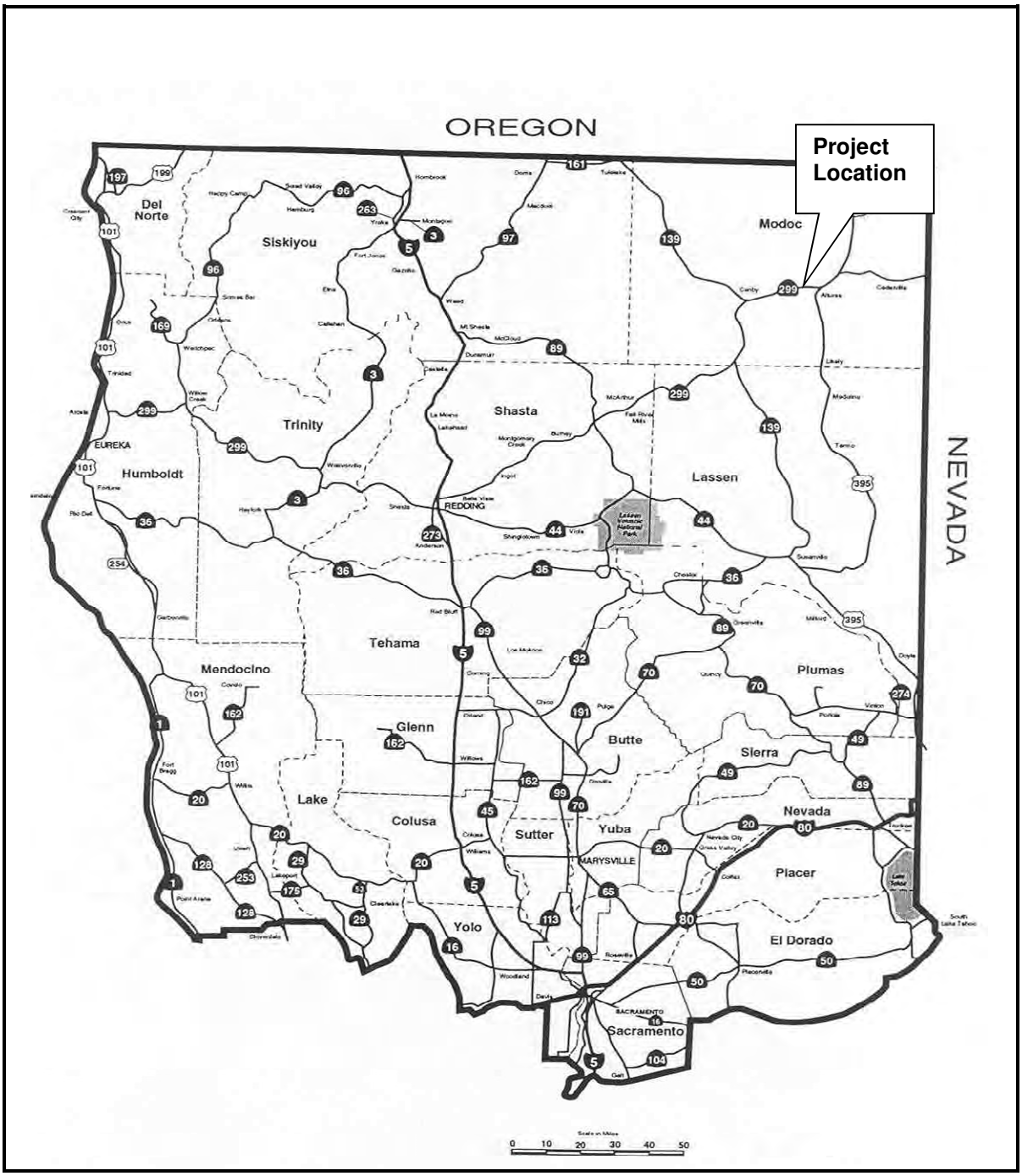


Figure 1: Project Vicinity Map

This page blank.

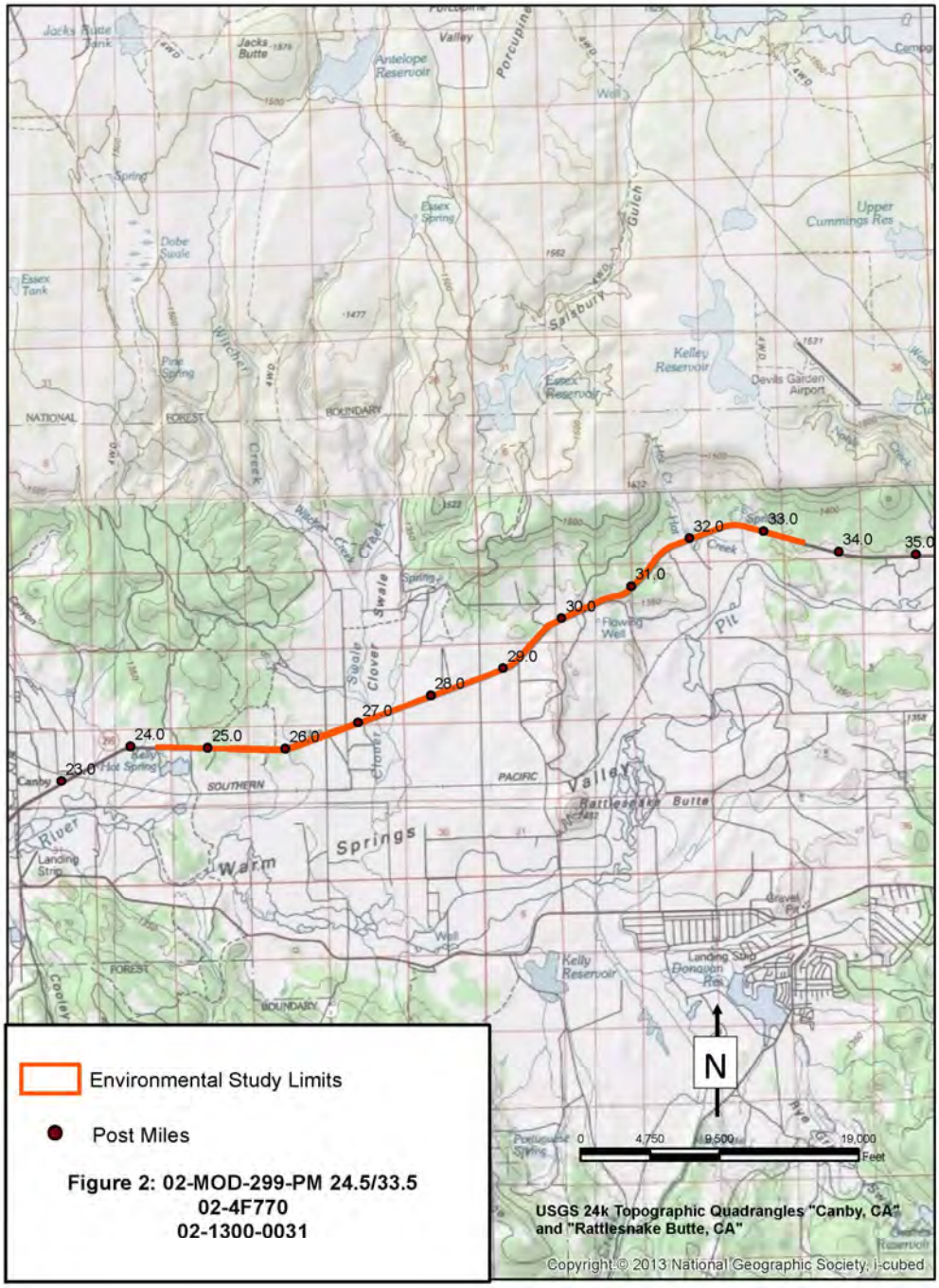


Figure 2: Environmental Study Limits Map

This page blank.

Project Alternatives

Two project alternatives, one of which is a “no-build” alternative, were developed as potential solutions to address the purpose and need for the project.

Alternative 1 (proposed SR 299 rehabilitation) is the preferred alternative as it meets the project purpose and need.

Alternative 2 (no-build) does not meet the purpose and need of this project. Numerous smaller projects and on-going maintenance would be required to maintain the existing roadway. This strategy would result in a higher cost to the taxpayer, and greater and prolonged environmental disturbance, while only temporarily delaying replacement of the aging features.

Permits and Approvals

As ground disturbance resulting from the proposed project would be more than one acre in size, a Storm Water Pollution Prevention Plan (SWPPP), including stormwater-related Best Management Practices (BMPs), will be prepared and implemented in accordance with the National Pollutant Discharge Elimination System (NPDES). The proposed project will also require a California Department of Fish and Wildlife (CDFW) 1602 Lake and Streambed Alteration Agreement (LSAA), a Central Valley Regional Water Quality Control Board (CVRWQCB) 401 Certification, and a U.S. Army Corps of Engineers (ACOE) 404 Nationwide 14 Permit for temporary and permanent impacts to jurisdictional stream channels and wetlands.

Environmental Factors Potentially Affected

The environmental factors checked below may be potentially affected by this project. Please see the checklist (Chapter 2) for additional information.

☐	Aesthetics	☐	Agriculture and Forestry	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☒	Geology/Soils
☐	Greenhouse Gas Emissions	☒	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☒	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☒	Transportation/Traffic	☐	Utilities/Service Systems	☐	Mandatory Findings of Significance

Environmental Determination

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required

Signature:	**Date:**
Printed Name:	**For:**

Chapter 2. CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic resources that might be affected by the proposed project. In many cases, background studies performed in connection with the proposed project and particular environmental resources indicate no impacts. A “No Impact” selection in the last column of the checklists below reflects this determination. A clarifying no impact discussion is included in the section following the specific resource checklist. An analysis and determination of all potential impacts identified as a result of the proposed project is included in **Chapter 3**. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist require the assessment of potential impacts of the proposed project on environmental resources, and the determination of the potential impacts, if applicable.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

The project site is located along SR 299 between Canby (to the west) and Alturas (to the east). SR 299 is an existing highway with cut banks, raised fill slopes, and other road-related features. The project site is not located within a Modoc County-designated Scenic Area (Modoc County, 1988). The view shed from the road traveler’s perspective in the project vicinity consists primarily of agricultural and open space (western juniper woodland, stream channel and wetland complexes, and big sage brush shrubland habitats), with scattered rural residences. Agricultural areas are associated with the flat low lying areas adjacent with SR 299. Sage and juniper habitats are associated with the Modoc National Forest mountain ranges to the north and their fingered extensions into the ESL. Wetland and channel features are associated with south flowing tributaries of the Pit River system which flows/meanders west, ranging from approximately 0.3 to 1.5 miles south of the ESL.

Proposed project grading is confined to existing maintained Caltrans ROW. Tree removal is proposed in order to accommodate road widening, construction activities, and safety

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact

requirements. However, a majority of the existing trees occur outside of the proposed grading area, and tree removal will be minimal. Based on these factors, the proposed project will not result in an adverse effect on a scenic vista, or substantially degrade the existing visual character or quality of the site and its surroundings. The project would not adversely affect any "Designated Scenic Resource" as defined by CEQA.

AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Agricultural land is a major economic base of Modoc County, and protection of agricultural land is a significant issue (Modoc County, 1988). The overall region and areas surrounding the ESL provide abundant farmland including Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and properties in Williamson Act contract (California Department of Conservation, 2015). The proposed project is a linear transportation project and construction activities will be confined to the existing Caltrans ROW, which does not include farmland. Staging will utilize existing disturbed areas, including turnouts and access roadways. The proposed project will not include the conversion or loss of farmland, resulting in no impact. County land use designations surrounding the project ESL are predominately General Agriculture with scattered occurrences

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact

of Rural Residential. There are no designations of Timber Resource Land in the immediate vicinity (Modoc County, 1988). Grading activities will impact several Western juniper trees, and these are not considered merchantable timber. Trees cut during construction would likely be left for firewood or processed at local mills, and appropriate areas would be revegetated. The proposed project would not result in an impact to agriculture or forest resources.

AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

See Section 3.1: Air Quality for a discussion of potential air quality impacts.

BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

See Section 3.2: Biological Resources for a discussion of potential biological resources impacts.

CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

See Section 3.3 for a discussion of potential impacts on cultural resources.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

See Section 3.4 for analysis and discussion of potential geology and soils impacts.

GREENHOUSE GAS EMISSIONS: Would the project:	
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the section following the checklist. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the section following the checklist.

See Section 3.5: Greenhouse Gas Emissions, for a further discussion.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

See Section 3.6: Hazards and Hazardous Materials for a discussion of project-related hazardous materials issues.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

See Section 3.7: Hydrology and Water Quality for analysis and discussion of potential hydrology and water quality related impacts.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Proposed project grading and construction is confined to existing maintained Caltrans ROW, and temporary work easements will be required for construction access. The proposed project would not result in land use change and would not physically divide an established community. County land use designations surrounding the project ESL are predominately General Agriculture with scattered occurrences of Rural Residential, and there are no designations of Timber Protection (TP) in the immediate vicinity of the ESL (Modoc County, 1988).The project consists of the rehabilitation of the existing SR 299; there is no conflict with regard to any applicable land use plan, policy, and or regulation of an agency with jurisdiction over the project.

There are no habitat conservation plans and/or natural community conservation plans that apply to the project site.

The project would have no impact with regard to land use and planning.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Modoc County contains approximately 26 valid minerals either historically or currently mined, including clay, coal, gold, iron, quicksilver, salt, and silver (Mindat, 2015). Gravel and stone quarries occur within Modoc County, and crushed stone is produced and used throughout the region predominantly for asphalt concrete aggregate and road building material (USGS, 1966). An area of previous investigation for mining resources includes the South Warner Wilderness, which was determined to be an area of low mineral potential (USGS, 1976). Resources within the vicinity of the ESL include a unnamed cinder pit (located immediately east of Canby, CA) and an unnamed stone deposit site (Pliocene Age) located approximately 4.5 miles west of Alturas (Mindat, 2015). No existing mineral or mining resources were identified in the ESL. The project consists of the rehabilitation of the existing SR 299, and proposed project grading and construction activities would not result in an impact to mineral resources.

NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? I	☐	☐	☐	☒

See Section 3.8: Noise for a discussion of potential noise related impacts.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The Modoc County population in 2014 was estimated at 9,023, which is lower than the 2010 estimate of 9,686 (U.S. Census Bureau, 2015). The City of Alturas is located approximately 6 miles east of the ESL and is the main population and housing center for the County with a population estimate of 2,657 in 2013, and 2,827 in 2010. Alturas is the only incorporated city of Modoc County. The remainder of the population centers are associated with much smaller communities including Cedarville (population estimated at 514 in 2010), Canby (population estimated at 315 in 2010), and Adin (population estimated at 272 in 2010). Other notable population centers include Native American trust lands, including XL Ranch, Alturas Indian Rancheria, Cedarville Rancheria, and Fort Bidwell Indian Reservation. Lower population densities throughout the County are characterized as rural residences mostly associated with agricultural land use. Population within the vicinity of the proposed project is sparse and mostly associated with agricultural practices. The proposed project consists of the rehabilitation of the existing SR 299, and there would be no impact related to population growth, or displacement of housing or people.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Public safety and law enforcement services for the area surrounding the proposed project are provided by the Modoc County Sheriff's Office and the Office of Emergency Services (located in Alturas). Ambulance service is provided by the Modoc Medical Center (located in Alturas). The project site and surrounding area currently receives structural fire protection and wildfire protection from the Canby Volunteer Fire Department, Modoc National Forest Fire and Aviation-Devils Garden Ranger District (located in Alturas), Alturas Fire Department, Alturas Rural Fire Protection District, and California Department of Forestry and Fire Protection- Lassen Modoc Unit (Calfire), respectively. The proposed project will not require additional emergency services and it will not result in the increased utilization of public facilities (schools, parks, etc.) upon completion, resulting in no impact to public services. Provisions will be made during construction to minimize traffic delays and to allow access and passage of emergency vehicles.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Recreation in Modoc County is mostly associated with outdoor activities including camping, hunting, fishing, hiking, skiing, sightseeing, biking and water activities within the Modoc National Forest, Modoc National Wildlife Refuge, South Warner Mountain Wilderness, Surprise Valley, Devil's Garden, ghost towns, Fandango Pass, the Modoc National Wildlife Refuge, the Lava Beds National Monument, and the Tule Lake Internment/Segregation Center. The City of Alturas, located approximately 6 miles east of the ESL, offers a few urban landscaped parks for public enjoyment. The proposed project will not result in the increased utilization of parks or other recreation facilities, resulting in no impact.

TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

See Section 3.9: Transportation/Traffic for a discussion of potential impacts.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Domestic water supply for rural residences in the vicinity of the ESL is provided by groundwater wells. Wastewater disposal systems are predominately septic. Electricity is provided by Pacific Gas and Electric, with various propane/gas providers also serving the area. No impacts to existing utility services are anticipated as a result of the project.

The project would be required to prepare a SWPPP to minimize potential impacts from stormwater runoff. Permanent stream channel impacts are not anticipated, as the proposed road rehabilitation project will provide improved drainage conveyance and storm water treatment upon completion of construction. No additional flood risks are anticipated with the proposed drainage flow improvements.

Solid waste disposal services for Alturas and the surrounding area is provided by the Alturas Disposal Transfer Station located at 335 North Main Street. The proposed project consists of the rehabilitation of an existing roadway, and there would be no impact related to utilities and service systems.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact

ENERGY CONSUMPTION

No additional energy consumption is anticipated after completion of the proposed project. Energy use (predominately burning of petro fuels) associated with project construction will be temporary, resulting in no anticipated effect due to energy consumption.

MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

See Section 3.10: Mandatory Findings of Significance for a discussion of potential impacts.

Chapter 3. Discussion of Environmental Impacts

3.1 Air Quality

The project site is located in Modoc County, which lies within the central portion of the Northeast Plateau Air Basin (NPAB). The NPAB is located in the northeast corner of the State, and lies partly within the Great Basin of the desert west. The NPAB also includes a large portion of forested mountain ranges including the Sierra Nevada, Cascade, and Klamath. Most of the NPAB is sparsely populated with the main air quality concern Particulate Matter (PM 10) during the winter. Like other rural areas of the state, PM 10 issues are caused by wood smoke emissions from stoves/fireplaces in the winter. Only ozone pollution violations have occurred in Yreka, and ozone air pollution throughout the NPAB is not of concern (ARB, 2015a). For Area Designations for State Ambient Air Quality Standards, Modoc County is in attainment for ozone, PM 2.5, Nitrogen Dioxide, Sulfur Dioxide, Sulfates, and Lead. It is in non-attainment for PM 10. It is not classified for Carbon Monoxide and Visibility Reducing Particles (ARB 2015b).

The proposed project would not increase capacity on SR 299. Proposed construction is for road rehabilitation purposes. Proposed construction and use of SR 299 would not result in any additional permanent operational-related air quality impacts and would not result in cumulatively considerable increases in any criteria pollutant.

Odors are unwanted scents that may be generated from construction or operations. Examples include sewage discharge, pungent discharge of combustibles, manufacturing odors, exhaust fumes, and landfill odor. The project would not produce any objectionable odors that would affect receptors in the vicinity, resulting in no impact.

Modoc County is in non-attainment for PM 10 (associated with the winter months). Construction activities associated with the project could generate substantial amounts of dust (including PM10 and PM2.5) primarily from “fugitive” sources (i.e., emissions released through means other than through a stack or tailpipe) and lesser amounts of other criteria air pollutants primarily from operation of heavy equipment. Local visibility and PM10 concentrations may be adversely affected on a temporary and intermittent basis during the construction period, particularly on days with a high level of earthmoving (such as during grading activities). In addition, the dust generated at the project site may contain asbestos if serpentine rock is encountered at the site. However, there are no known occurrences of serpentine rock within the project area. A potential effect may occur but can be controlled with standard dust reduction measures. Both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature and are not proposed during the winter months (i.e. the season when PM 10 levels are likely in non-attainment), and would not result in long-term adverse conditions. Project-related air quality impacts are less than significant.

Gravel used for surfacing can be derived from serpentine rock. Serpentine gravel often contains asbestos fibers; asbestos fibers have been linked to lung cancer. Vehicles driving over serpentine gravels bearing asbestos fibers can cause these fibers to become airborne, thereby creating a health risk. Construction contractors are prohibited from using serpentine gravel unless it is sealed with an unrestricted material to prevent the asbestos fibers from becoming airborne, as required by Section 93106 of the California Health and Safety Code. With incorporation of standard Caltrans construction practices, impacts are less than significant.

3.2 Biological Resources

Biological resource impact analysis was prepared in accordance with various federal and state laws, regulations, Executive Orders (EO), and Caltrans procedures including:

- **Special Status Species**- Special status species include plants and animals that are: 1) listed as rare, threatened, or endangered by USFWS or California Department of Fish and Wildlife (CDFW) under state or federal endangered species acts; 2) are on formal lists as candidates for listing as threatened or endangered; 3) are on formal lists as species of concern; or 4) are otherwise recognized at the state, federal, or local level as sensitive.

- **Federal and California Endangered Species Acts**- Under the Federal Endangered Species Act (FESA), it is unlawful to "take any species listed as threatened or endangered". "Take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An activity is defined as "take" even if it is unintentional or accidental. Take provisions under FESA apply only to listed fish and wildlife species under the jurisdiction of the USFWS and/or NMFS. Consultation with USFWS and/or NMFS is required if a project has the potential to affect a listed species.

  When a species is listed, the USFWS and/or the NMFS must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or the NMFS is required for projects that include a federal action or federal funding if the project may affect designated critical habitat.

  Under the California Endangered Species Act (CESA), it is unlawful to "take" any species listed as rare, threatened, or endangered. Under CESA, "take" means to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". CESA take provisions apply to fish, wildlife, and plant species. Take may result whenever project related activities occur in areas that support a listed species. Consultation with CDFW is required if a project will likely result in "take" of a listed species.

- **Waters of the U.S. and Other Jurisdictional Waters**- Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. are those waters that have a connection to interstate commerce, either directly via a tributary system or indirectly through a nexus identified in the ACOE regulations. In non-tidal waters, the lateral limit of jurisdiction under Section 404 extends to the OHWM of a water body or, where adjacent wetlands are present, beyond the OHWM to the limit of the wetlands. The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). In tidal waters, the lateral limit

of jurisdiction extends to the high tide line or, where adjacent wetlands are present, to the limit of the wetlands.

- **Regional Water Quality Control Board**- Under Section 401 of the CWA, the State Water Resources Control Board must certify all activities requiring a 404 permit. The Regional Water Quality Control Board (RWQCB) regulates these activities and issues water quality certifications for those activities requiring a 404 permit. In addition, the RWQCB has authority to regulate the discharge of "waste" into waters of the State pursuant to the Porter-Cologne Water Quality Control Act (PCWQCA).

- **California Department of Fish and Wildlife**- CDFW, through provisions of Section 1602 of the State Fish and Game Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be substantially adversely affected. Streams (and rivers) are defined by the presence of a channel bed and bank, and at least an ephemeral or intermittent flow of water. CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFW.

  CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, cottonwoods, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas. Riparian communities may not fall under ACOE jurisdiction if they do not meet the three parameters of a wetland as defined by the ACOE.

- **Executive Order 11990**: Protection of Wetlands- Executive Order (EO) 11990 mandates leadership on the part of federal agencies to reduce loss and degradation of wetlands and to preserve and enhance the beneficial values and functions of wetlands. Each federal agency "shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that (1) there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use."

- **Migratory Bird Treaty Act**- The Migratory Bird Treaty Act (MBTA) prohibits actions that will result in "take" of migratory birds, their eggs, feathers, or nests. "Take" is defined in the MBTA as any means or any manner to hunt, pursue, wound, kill, possess, or transport, any migratory bird, nest, egg, or part thereof. Migratory birds are also protected, as defined in the MBTA, under Section 3513 of the California Fish and Game Code.

- **California Fish and Game Code (Breeding Birds)**- Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or other regulation.

- **Invasive Species**- Under EO 13112, an invasive species is defined as "an alien species (a species not native to a particular ecosystem) whose introduction does or is likely to cause economic and environmental harm or harm to human health". Invasive species are determined by the Invasive Species Council. In addition to other mandates, EO 13112 mandates federal agencies whose actions may affect the status of invasive species to "not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species".

Analysis of potential effects of the proposed project on the biological environment is based on the Natural Environment Study (NES) prepared by Caltrans (2015). Prior to conducting field surveys, a list of special-status plants and wildlife known to potentially occur within the vicinity of the project was reviewed. Sources consulted in preparation of the list of target plant taxa are shown below. The list was then used to focus the botanical and wildlife field investigations on the targeted species and the habitats known to support these species. Reference data used for the surveys and in the preparation of the NES included the following:

- Review of Standard, CA USGS 7.5-minute topographic quadrangle maps "Canby" and "Rattlesnake Butte" (USGS, 1993);
- California Natural Diversity Database (CNDDB) records search within a 5-mile radius of the proposed project (CNDDB, 2015).
- The U.S. Fish and Wildlife Office (USFWS) Klamath Falls Office List of Potentially Occurring Federally Listed Species (2015).
- The California Native Plant Society Inventory (CNPS) Electronic Inventory of Rare Plants, 8th Edition (2015)
- Draft Delineation of Jurisdictional Waters, Caldwell Creek Roadway Rehabilitation Project (Caltrans, 2015)
- National Marine Fisheries Service (NMFS) Sacramento Office email correspondence of no potential occurrence of listed anadromous species (NMFS, 2015)

Field surveys were conducted to determine the plant communities and wildlife habitats. The entire ESL was walked, and all plant and animal species encountered were recorded. Individual habitat types were delineated, including potentially jurisdictional waters of the U.S. Biological field surveys were conducted on several occasions to develop an accurate description of the existing environment, gather information on the presence of special status species, and determine potential project level impacts to biological resources.

Existing Conditions

The ESL is located in the center of Modoc County within the Pit River Valley subsection of the Modoc Plateau Section. The Modoc Plateau Section is characterized by fault-block mountains and ridges with non-marine sedimentary rocks and other formations of materials of volcanic origin. Vegetation is a mixture of sagebrush, ponderosa pine and pinyon-juniper habitat types (Miles and Goudey, 1997). This area is part of the Sierran Steppe - Mixed Forest - Coniferous Forest - Alpine Meadows physiographic province where temperatures average 35° to 52° Fahrenheit (F), and winter precipitation makes up 80 to 85 percent of the total, with snow as the majority at higher elevations. Landscapes are dominated by precipitous mountains crossed by many valleys with steep gradients. Average annual precipitation is approximately 12.32 inches.

Mean annual temperatures range from a minimum of 29.6 ºF to a maximum of 63.6 ºF (Western Regional Climate Center, 2015).

Elevation ranges in the ESL from 4,310 to 4,500 feet mean sea level (msl). Upland plant communities within the ESL are characterized using A Manual of California Vegetation (Sawyer, Keeler-Wolf and Evens, 2009), and they include the Big Sagebrush (*Artemisia tridentata*) Shrubland Alliance, Western Juniper (*Juniperus occidentalis*) Woodland Alliance, disturbed/ruderal (residential, agricultural, and SR 299). Plant communities and habitats associated with aquatic settings include riverine (ephemeral, intermittent and perennial stream channels) and palustrine emergent wetland (saturated and seasonally flooded). Aquatic communities were classified using the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979).

Habitats

Big Sagebrush Shrubland

Natural communities within the ESL are comprised of the Big Sagebrush Shrubland Alliance, which occurs within portions of the ESL that have been relatively undisturbed. This habitat is interspersed and adjacent with Western Juniper Woodland Alliance habitat. Dominant species include big sagebrush, yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and tumbleweed (*Amaranthus albus*), with herb strata occurrences including bluebunch fescue (*Festuca idahoensis*), silver hairgrass (*Aira caryophyllea*), wild rye (*Elymus triticoides*), Kentucky blue grass (*Poa pratensis*), mountain tansy-mustard (*Descurainia incana*), meadow barley (*Hordeum brachyantherum*), and common sow-thistle (*Sonchus oleraceous*). Sagebrush plant communities are characteristic of the region, providing important habitat for sagebrush-dependent wildlife.

Western Juniper Woodland

Western Juniper Woodland Alliance habitat generally is associated with the higher elevations and footsloped extensions of the north mountain ranges into the ESL. The dominant tree and shrub species is western juniper, with herb strata occurrences of bluebunch fescue, bluebunch wheatgrass (*Pseudoroegneria spicata*), basin wildrye (*Elymus cinereus*), and non-native invasive species including cheatgrass (*Bromus tectorum*), ripgut brome (*Bromous diandrus*), and wild oat (*Avena fatua*). Several events during the last 150 years have led to increased rates of woodland establishment at the expense of sagebrush communities throughout the intermountain west. These events include rising temperatures, intensive livestock use, and decreased wildfire with increased fire suppression. Conversion of sagebrush and other native plant communities to juniper woodlands places additional stress on communities that have been severely reduced in area and habitat quality (USFS, 2008).

Disturbed / Ruderal

This habitat type is associated with rural residential and agricultural land use, as well as the SR 299 roadway and shoulder areas. Ornamental shrubs, trees, and ruderal species are typically associated with these habitats. Portions within the ESL include clearings where residences and agricultural land use are located. Disturbed/ruderal habitat also includes roadside areas that have actively been maintained, and are mostly comprised barren ground or opportunistic and invasive grasses and forbs that have displaced native plants and altered local plant communities.

Stream Channels / Wetlands

Within the ESL SR 299 crosses several intermittent and perennial channels and associated wetland habitats. These features include the perennial Clover Swale Creek and Hot Creek, the intermittent Channel I-1, and several ephemeral channels and erosional swale features. Existing bridge and culverts convey flow of these features under SR 299. Channels within the ESL eventually drain to the Pit River, which meanders in a southwest direction and is located south of the project area, ranging from 0.3 to 1.5 miles away.

Several wetland features are located within the ESL. A majority of the features delineated are connected to much larger features outside of the ESL. Potentially jurisdictional wetlands within the study area, as classified using the Classification of Wetlands and Deepwater Habitats of the United States, include palustrine emergent wetland- saturated (seasonal wetlands) and palustrine emergent wetland- seasonally flooded (emergent wetlands).

Clover Swale Creek

Within the ESL Clover Swale Creek has several braids that flow south under SR 299 near PM 27.4. These perennial channels range from approximately 15 to 22 feet ordinary high water mark (OHWM), and merge further downstream and outside of the study area, forming a much larger channel. Channel substrate is earthen. Lateral and existing ditch systems associated with the creek support freshwater emergent wetland habitat, dominated by cattail (*typha latifolia*) lamp rush (*Juncus effuses*) and reed canary grass (*Phalaris arundinaceae*).

Hot Creek

The perennial Hot Creek originates and flows from the steep slopes of the mountain ranges to the north, gathering water from a series of seeps and springs in the vicinity. The channel supports a variety of adjacent wetland habitats including riparian, seasonal and freshwater emergent. Within the ESL, Hot Creek has been historically manipulated and channelized by berms as it flows/loops through an existing rural residential property and crosses under SR 299 at three separate locations near PM 32.0 through 32.2. The channel supports an extensive area of freshwater emergent vegetation within and south of the study area, and exhibits and average OHWM of approximately 12.5 feet. Channel substrate is predominately earthen.

Intermittent Channel I-1

Approximately 1,700 feet east of Hot Creek, a small intermittent channel drains a large wetland complex located within and beyond the north shoulder of SR 299 near PM 32.5. This wetland feature is fed by a series of springs. Intermittent channel I-1 occurs on the south side of SR 299, forming from a culvert outlet and conveying surface flow from the wetland feature south and beyond the ESL into a larger wetland complex associated with Hot Creek. I-1 forms three channel braids exhibiting earthen substrate and an approximate OHWM of 2.5 feet.

Ephemeral Channels

Two ephemeral channels were identified within the ESL with OHWM ranging from 2.0 to 2.5 feet. These small features drain surface flow under SR 299 (approximate PMs 24.4 and 24.7) and south outside the study area. Channel substrate is earthen.

Ephemeral Swales

Several ephemeral swale features were identified within the ESL with OHWM ranging from 1.5 to 3.0 feet. These small features typically form at the outlet of culverts crossing south under SR 299. Channel substrate is earthen, with scour exhibited at the culvert outlet. Downstream and outside of the study area, a defined channel bed and bank of these features is often sporadic as flow fans out over the more level topography associated with the Pit River and the Warm Springs Valley.

Seasonal Wetlands

There are two locations within the ESL that have seasonal wetland habitat. SW-1 occurs along the north side of the ESL near PM 24.7. Only a small portion of the feature occurs within the ESL, with a majority extending outside to the north. This feature is a shallow depression that appears to collect run-off from surrounding uplands, and is characterized by seasonal wetland vegetation including Baltic rush (Juncus balticus), popcorn flower (Plagiobothrys sp.), and mousetail (Myosurus sp.). Although no ponding was observed during field surveys, there is evidence of saturation and shallow ponding, and when overflowing, the wetland feature drains south under SR 299 via ephemeral channel E-2 through an existing culvert.

SW-2 is a large seasonal wetland complex along the north portion of the ESL near PM 32.5. SW-2 is supported by a series of springs and seeps located north of the ESL. This large seasonal feature is dominated by sedge (Carex sp.), and drains across SR 299 at 5 separate locations via culverts. South of SR 299 this wetland feature is a part of the large wetland complex outside of the ESL and associated with Hot Creek.

Freshwater Emergent Wetlands

There are two locations of freshwater emergent wetlands within the ESL. Clover Swale Creek, as described above, has several braids that flow south under SR 299 near PM 27.4. Freshwater emergent wetlands PEW-1, PEW-2, PEW-3 and PEW-4 are associated with the lateral fringes of the open water habitat of the Clover Swale Creek braids. These wetland features are seasonally flooded and are dominated by cattail, lamp rush, and reed canary grass.

PEW-5 is associated with the large wetland complex adjacent with Hot Creek near PM 32.0 through 32.2. This large wetland features extends south outside of the ESL and is dominated by sedges.

Fish and Wildlife

Surrounding the ESL and associated with the Modoc Plateau is a mosaic of seasonal wetlands, semi-permanent wetlands, wet meadows, riparian, juniper woodland, and sagebrush-steppe habitats. In addition, the Pit River flows in a westerly direction just south of the ESL. These important habitat features are strategically situated to meet the needs of waterfowl and other migratory birds of the Pacific Flyway and the surrounding region. Within the vicinity of the ESL, open water and wetland habitats act as migration and staging area for ducks, geese, and other wetland birds on the southward migration, as well as northward migration in the spring. Upland sage scrub and juniper woodland habitats provide foraging and nesting opportunities. Bird species observed in the vicinity of the ESL during surveys included Canada goose (*Branta Canadensis*), double-crested cormorant (*Phalacrocorax auritas*), mallard (*Anas platyrhynchos*), black tern (*Chlidonias niger*), black-billed magpie (*Pica hudsonia*), American white pelican

(*Pelecanus erythrorhynchos*), Wilson's snipe (*Gallinago delicata*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), American cliff swallow (*Petrochelidon pyrrhonota*), common raven (*Corvus corax*), cedar waxwing (*Bombycilla cedrorum*), Brewer's blackbird (*Euphagus cyanocephalus*), European starling (*Sturnus vulgaris*), Eurasian collared dove (*Streptopelia decaocto*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), American kestrel (*Falco sparverius*), western meadowlark (*Sturnella neglecta*), California quail (*Callipepla californica*), lesser nighthawk (*Chordeiles acutipennis*), ash-throated flycatcher (*Myiarchus cinerascens*), tree swallow (*Tachycineta bicolor*), greater sandhill crane (*Grus Canadensis tabida*), brown-headed cowbird (*Molothrus ater*), long-billed curlew (*Numenius americanus*), mourning dove (*Zenaida macroura*), red-winged blackbird (*Agelaius phoeniceus*), white-faced ibis (*Plegadis chihi*), common raven (*Corvus corax*), and Caspian tern (*Hydroprogne caspia*).

Historically, the Pit River system had similar fish assemblages when compared to the Central Valley. However, trout species are now a minor component of the system (Moyle, 2002). Tributary streams have summer temperatures of 68° - 75° F, moderate gradients, and numerous pools. Tributaries are often intermittent, and go dry in the summer. Common fish species occurring include speckled dace (*Rhinichthys osculus*) in pool habitats and Pit sculpin (*Cottus pitensis*) in riffles. Rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*) occupy the more perennial channel reaches, with occurrences of California roach (*Hesperoleucus symmetricus*), Sacramento sucker (*Catostomus occidentalis*) and juvenile Sacramento pikeminnow (*Ptychocheilus grandis*) (Moyle, 2002). The federally listed Modoc sucker (*Catostomus microps*) is present in few isolated streams of the Pit River system, but their current known distribution is not located within the vicinity of the project area (USFWS, 2014).

Surrounding upland and wetland habitats support a variety of wildlife including black-tailed deer (*Odocoileus hemionus columbianus*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), American black bear (*Ursus americanus*), mountain lion (*Puma concolor*), bob cat (*Lynx rufus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), American badger (*Taxidea taxus*), western spotted skunk (*Spilogale gracilis*), black-tailed jackrabbit (*Lepus californicus*), bushy-tailed woodrat (*Neotoma cinerea*), Belding's ground squirrel (*Spermophilus beldingi*), North American beaver (*Castor canadensis*), and muskrat (*Ondatra zibethicus*). Various bat species including little brown bat (*Myotis lucifugus*), pallid bat (*Antrozous pallidus*), silver-haired bat (*Lasionycteris noctivagans*), and long-eared myotis (*Myotis septentrionalis*), occupy juniper woodlands and numerous rock outcrops and forage within the edge habitats associated with stream and wetland features.

Reptile species occurring within the surrounding area include rubber boa (*Charina bottae*), striped whipsnake (*Masticophis taeniatus*), gopher snake (*Pituophis catenifer catenifer*), common garter snake (*Thamnophis sirtalis*), western skink (*Plestiodon skiltonianus*), western fence lizard (*Sceloporus occidentalis*), and sagebrush lizard (*Sceloporus graciosus*). Amphibian species include bullfrog (*Lithobates catesbeianus*), Pacific tree frog (*Pseudacris regilla*), and Great Basin spadefoot toad (*Spea intermontana*).

Results and Findings

The proposed project would not result in impacts to local policies or ordinances protecting biological resources, and would not impact a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.

Special Status Species

Based on literature searches, surveys, and analysis performed (NES, 2016), the proposed project ESL has the potential to support 18 special status plant species and 14 special status animal species. Table 2 below identifies species with at least a “low” potential to occur within the ESL or the immediate vicinity. Based on analysis conducted in the NES (Caltrans, 2016b), species analyzed from sensitive species list queries (CDFW, CNPS and USFWS) for the project area that were determined as unlikely to occur within the ESL or vicinity, will not be impacted by the proposed project and are not included in Table 2. Table 2 outlines potentially occurring special status plant and animal species and their potential to be impacted by proposed project activities. A discussion of individual species with the potential to be impacted by the proposed project is included following Table 2.

This page blank.

Table 2: Sensitive Plant and Animal Species Potentially Occurring in the Proposed Project Area.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
Plants					
stoloniferous pussy-toes	*Antennaria flagellaris*	--/--/4.2	Great Basin scrub habitats with vernally mesic conditions. Occurs at elevations ranging from approximately 4,757-7,283 ft. msl. Blooms April/May through August.	Low. Minimal suitable habitat within seasonal wetland habitat. Not observed during rare pant surveys.	Proposed project avoids a large majority of seasonal wetland within the ESL. Species not observed during rare plant surveys. No impact.
Modoc Plateau milk-vetch	*Astragalus pulsiferae var. coronensis*	FSS/--/4.2	Great Basin scrub, lower montane coniferous forest, and pinyon and juniper woodland, in sandy silt or friable surface among basalt cobble and volcanic substrate. Occurs at elevations ranging from 4,413-6,201 ft. msl. Blooms May through July.	Low. Suitable habitat within the juniper woodland. Not observed during rare plant surveys.	Proposed project avoids a large majority of juniper woodland within the ESL. Species not observed during rare plant surveys. No impact.
long-haired star-tulip	*Calochortus longebarbatus var. longebarbatus*	FSS/--/1B.2	Great Basin scrub, lower montane coniferous forest (openings and drainages), meadows & seeps, vernal pools/clay, and mesic. Clayey soils. Occurs at elevations ranging from 3,297-6,234 ft. msl. Blooms June through August.	Low. Minimal suitable habitat within seasonal wetland. Not observed during rare plant surveys.	Proposed project avoids a large majority of seasonal wetland within the ESL. Species not observed during rare plant surveys. No impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
Sheldon's sedge	*Carex sheldonii*	--/--/2B.2	Lower montane coniferous forest, freshwater marshes and swamps, riparian scrub, mesic sites, drainage edges, and wet meadows. Occurs at elevations ranging from 3,937-6,601ft msl. Blooms May through August.	Low. Suitable habitat within emergent wetland habitat. Not observed during rare plant surveys.	Proposed project avoids a large majority of emergent wetland within the ESL. Species not observed during rare plant surveys. No impact.
dwarf fleabane	*Erigeron elegantulus*	--/--/4.3	Alpine boulder and rock field, Great Basin scrub, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest. Volcanic soils.	High. Observed at the east end of ESL along south elevated shoulder/bank of SR 299.	Identified in the ESL. Avoidance and relocation efforts identified in Chapter 4 will minimize potential impacts. Less than significant impact.
prostrate buckwheat	*Eriogonum prociduum*	FSS/--/1B.2	Clayey soils within Great Basin scrub, pinyon and juniper woodland, upper montane coniferous forest, and dry volcanic slopes and hills. Occurs at elevations ranging from 4,265-8,875 ft. msl. Blooms may through August.	Low. Suitable habitat within the juniper woodland. Not observed during rare plant surveys.	Proposed project avoids a large majority of juniper woodland within the ESL. Species not observed during rare plant surveys. No impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	--/E/1B.2	Vernal pools with clay soils, margins of seasonally receding ponds and lakes, and marshes and swamps. Occurs at elevations ranging from 32-7,792 ft. msl. Blooms April through August.	Low. Limited potential suitable habitat associated with seasonal and emergent wetlands. Not observed during rare plant surveys.	Proposed project avoids a large majority of seasonal and emergent wetland within the ESL. Species not observed during rare plant surveys. No impact.
water star grass	*Heteranthera dubia*	--/--/2B.2	Still or slow moving water at elevations lower than 4,500 ft. msl. Blooms July through August.	Low. Suitable habitat within Clover Swale Creek. Not observed during rare plant surveys.	Proposed project avoids impacts to Clover Swale Creek. Species not observed during rare plant surveys. No impact.
Lilliput lupine	*Lupinus uncialis*	--/---/2B.2	Great Basin scrub, pinyon and juniper woodland with volcanic and gravelly soils. Also occurs in limestone rhyolite and volcanic ash substrates. Occurs at elevations ranging from 4,265-5,249 ft. msl. Blooms May through July.	Low. Suitable habitat within the ESL within the big sagebrush. Not observed during rare pant surveys.	Proposed project avoids a large majority of big sagebrush habitat within the ESL. Species not observed during rare plant surveys. No impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
Janish's beardtongue	*Penstemon janishiae*	--/--/2B.2	Great Basin scrub, lower montane coniferous forest, And pinyon and juniper woodland, with volcanic soils. Occurs at elevations ranging from 3,494-7,709 ft. msl. Blooms May through July.	High. Observed at the east end of ESL along south elevated shoulder/bank of SR 299.	Identified in the ESL. Avoidance and relocation efforts identified in Chapter 4 will minimize potential impacts. Less than significant impact.
Modoc County knotweed	*Polygonum polygaloides ssp. esotericum*	--/--/1B.1	Great Basin scrub, lower montane coniferous forest, meadows and seeps, edges of seasonal lakes, and ponds. Vernally mesic areas pools. Occurs at elevations ranging from 2,903-5,545 ft. msl. Blooms May through September.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project avoids a large majority of seasonal wetland within the ESL. Species not observed during rare plant surveys. No impact.
eel-grass pondweed	*Potamogeton zosteriformis*	--/--/2B.2	Marshes, swamps, and assorted freshwater. Occurs at elevations ranging from 0-6,102 ft. msl. Blooms June through July.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project has minimal and temporary impacts to perennial water courses. Species not observed during rare plant surveys. No impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
American riella	*Riella americana*	--/--/2B.2	Lower montaine coniferous forest and pinyon and juniper woodland. Arid and semiarid regions as a submerged aquatic in mud flats and in temporary pools and streams. Blooms August through September.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project avoids a large majority of seasonal wetland within the ESL. Species not observed during rare plant surveys. No impact.
Columbia yellow cress	*Rorippa columbiae*	FSS/--/1B.2	Meadows, pinyon and juniper woodland and playas. Occurs at elevations ranging from 3,940-5,900 ft. msl. Blooms May through September.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project avoids a large majority of juniper woodland habitat within the ESL. Species not observed during rare plant surveys. No impact.
Oregon campion	*Silene oregana*	--/--/2B.3	Occurs in subalpine habitats in the mountains including ponderosa pine forests and sagebrush covered slopes. Blooms July through September.	Low. Suitable habitat within the ESL within the big sagebrush. Not observed during rare pant surveys.	Proposed project avoids a large majority of big sagebrush habitat within the ESL. Species not observed during rare plant surveys. No impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
hairy marsh hedge-nettle	*Stachys pilosa*	--/--/2B.3	Great Basin scrub (mesic), meadows and seeps. Found is elevations ranging from 3,937-5,807 ft. msl. Blooms June through August.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project avoids a large majority of seasonal wetland within the ESL. Species not observed during rare plant surveys. No impact.
Howell's thelypodium	*Thelypodium howellii ssp. howellii*	--/--/1B.2	Alkaline meadows and sagebrush scrub. Found in elevations ranging from 3,937-6,004 ft. msl. Blooms May through July.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project avoids a large majority of big sagebrush habitat within the ESL. Species not observed during rare plant surveys. No impact.
flat-leaved bladderwort	*Utricularia intermedia*	--/--/2B.2	Mesic habitats including bogs and fens, meadows, seeps, lake margins, marshes, and swamps. Found in elevations ranging from 3,937-8,858 ft. msl.	Low. Limited suitable habitat in the ESL. Not observed during rare plant surveys.	Proposed project avoids a large majority of seasonal and emergent wetland within the ESL. Species not observed during rare plant surveys. No impact.
Mammals					

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
silver-haired bat	*Lasionycteris noctivagens*	--/--/--	Primarily a coastal and montane forest dweller, feeding over streams, ponds, and open brushy areas. Roosts in hollow trees (abandoned woodpecker holes), snags, buildings, rock crevices, caves, and under bark.	Low. Suitable roosting habitat within juniper woodland and rock outcrop features. These habitat types are limited within the ESL.	Limited tree removal will occur outside of roosting season. No other potential roost habitat identified within the work area. Less than significant impact.
pallid bat	*Antrozous pallidus*	FSS/SC/--	Occurs 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. Relies heavily on trees for roosting.	Low. Suitable roosting habitat within juniper woodland and rock outcrop features. These habitat types are limited within the ESL.	Limited tree removal will occur outside of roosting season. No other potential roost habitat identified within the work area. Less than significant impact.
long-eared myotis	*Myotis evotis*	FSS/--/--	Primarily in high elevation coniferous forests, but also found in mixed hardwood/conifer, high desert, and humid coastal conifer habitats.	Low. Suitable roosting habitat within juniper woodland and rock outcrop features. These habitat types are limited within the ESL.	Limited tree removal will occur outside of roosting season. No other potential roost habitat identified within the work area. Less than significant impact.
American badger	*Taxidea taxus*	--/SC/--	Dwell in areas with short grasses. Found in prairies, plains, farmland, and edges of woodland. Also can be found in shelter along roadways, fence rows, ditches banks, and field edges. Require habitats with	High. Suitable denning habitat within the ESL. Two badgers observed during surveys. Dens observed along shoulder of SR 299.	Pre-construction surveys and improved culverts for roadway wildlife passage will minimize potential impacts. Less than significant impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
			deep friable top soils for denning.		
Birds					
white-faced ibis	*Plegadis chihi*	--/SC/--	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields.	High. Suitable habitat in the vicinity of the ESL within large wetland complexes associated with Clover Swale Creek and Hot Creek. Observed foraging outside of ESL in flooded agricultural areas associated with Clover Swale Creek.	The ESL does not provide suitable nesting or roosting habitat due to the lack of extensive marsh and the high level of human disturbance. May forage in the vicinity of the ESL, but proposed project is not likely to limit foraging or local movement through the area. No impact.
bald eagle	*Haliaeetus leucocephalus*	FSS/SE and FP/--	In western North America, nests and roosts in coniferous forests within a mile of a lake, reservoir, stream, or the ocean. Nesting season from February to August.	Low. Suitable nesting habitat within coniferous habitats outside of the ESL within higher elevations. Suitable foraging habitat along Pit River.	The ESL does not provide suitable nesting habitat. May forage in the vicinity of the ESL along the Pit River, but proposed project is not likely to limit foraging or local movement through the area. No impact.
greater sandhill crane	*Grus canadensis tabida*	FSS/ST/--	Summers in open terrain near shallow lakes or freshwater marshes. Winters in plains and valleys near	Medium. Potential suitable habitat within emergent wetland along the Pit River.	ESL does not provide suitable nesting habitat. Pre-construction surveys and avoidance

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
			freshwater. Sensitive to human disturbance, especially during nesting.	Nesting activity observed 1.5 mile southwest of ESL along Pit River.	requirements (if nest is identified in the vicinity of the ESL) will minimize potential impacts. Less than significant impact.
golden eagle	*Aquila chrysaetos*	--/FP/--	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals.	Low. Suitable nesting habitat within coniferous habitats outside of the ESL within higher elevations. Suitable foraging habitat within big sage brush.	The ESL does not provide suitable nesting habitat. May forage in the vicinity of the ESL, but proposed project is not likely to limit foraging due to regional abundance of big sage brush and juniper woodland. No impact.
Swainson's Hawk	*Buteo swainsoni*	--/ST/--	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	Medium. Suitable nesting habitat within juniper woodland and foraging habitat within big sage brush. Numerous CNDDB records in the surrounding area.	Proposed project avoids a large majority of juniper woodland and big sage brush habitats within the ESL. Pre-construction surveys and avoidance requirements (if nest is identified within vicinity of the ESL) will minimize potential impacts. Regional abundance of foraging habitat minimizes loss. Less than significant impact.

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
loggerhead shrike	*Lanius ludovicianus*	FSS/SC/--	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	Medium. Potential nesting and foraging habitat within the big sage brush and juniper woodland habitats.	Preconstruction surveys and regional abundance of foraging and nesting habitat avoids potential impacts. No impact.
bank swallow	*Riparia riparia*	--/ST/--	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam.	Low. Minimal potential habitat along banks of Clover Swale Cr. No detections during spring field surveys. Nearest CNDDB occurrences are 20+ years old and located south of SR299 along the Pit River.	Minimal suitable habitat along the banks of Clover Swale Creek within the ESL. Current known distribution likely not within the vicinity. No bank swallows observed during spring/fall surveys. No impact.
yellow-headed blackbird	*Xanthocephalus xanthocephalus (nesting)*	--/SC/--	Fresh marshes with tall vegetation. Forages in agricultural fields and open habitats.	High. Limited nesting habitat within ESL, with more suitable nesting habitat within emergent wetland outside of the ESL along Clover Swale Creek. Observed within the ESL (non-nesting) during surveys.	Minimal suitable nesting habitat along the banks of Clover Swale Creek within the ESL. Preconstruction surveys avoid potential impacts. Proposed project is not likely to limit foraging or local movement through the area. No impact.
Fish					
hardhead	*Mylopharodon conocephalus*	FSS/SC/--	Clear, deep pools with sand gravel-boulder bottoms and slow water velocity. Not	Low. Potential suitable habitat within	Potential suitable habitat within Clover Swale Creek and Hot Creek. Avoidance

Common Name	Scientific Name	Legal Status* Federal / State / CNPS	General Habitat Description	Potential to Occur at Proposed Project Site	Impact
			found where exotic centrarchids predominate. Known to occur 1/2 mile south of Canby in the Pit River at County Rd 54 bridge.	Clover Swale Creek and Hot Creek.	measures, fish rescue during site dewatering, and BMPs will minimize potential impacts. Less than significant impact.
Pit roach	*Lavinia symmetricus mitrulus*	--/SC/--	Predominately occupy small warm water streams. Use bottom of shallow and slow flowing water that is embedded with gravels and rock crevices for spawning. Capable of occupying larger colder stream pool habitat that is void of piscivorous fish.	Low. A majority of Intermittent channels will be dry during construction season. Potential occurrence in Clover Swale Creek and Hot Creek.	Potential suitable habitat within Clover Swale Creek and Hot Creek. Avoidance measures, fish rescue during site dewatering, and BMPs will minimize potential impacts. Less than significant impact.

* **California Native Plant Society**
1A: Presumed extirpated in California
1B: Rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California, but common elsewhere
2B: Plants rare, threatened or endangered in California, but more common elsewhere
3: More information needed
4: Limited distribution
0.1: Seriously threatened in California
0.2: Moderately threatened in California
0.3: Not very endangered in California

Federal
-- = No Status
E: Endangered
T: Threatened
C: Candidate
FSS: Species of Special Concern
DE: Delisted Endangered

State
-- = No Status
SE: Endangered
ST: Threatened
SC: Species of Concern
FP: Fully Protected

This page blank.

Rare Plants

Two CNPS listed plants were identified within the ESL during spring and summer 2015 surveys. Janish's beardtongue is a list 2B.2 and is considered rare in California. It blooms between May and July. Dwarf fleabane is a CNPS list 4.3 and has limited distribution in California. It blooms from March to August. These two species were observed within big sage habitat along the south shoulder of SR 299 at the eastern terminus of the ESL. Proposed grading activities may impact these populations. However, based on the existing distribution in California and the surrounding area, impacts would be considered less than significant. **Mitigation Measure BIO-6** provided in Chapter 4 will further reduce potential impacts to these plant species to a less than significant level.

Bats

Several bat species have the potential to occur within the project vicinity including long-eared myotis and pallid bat. The long-eared myotis is a U.S. Bureau of Land Management (BLM) sensitive species, and the pallid bat is a USFS sensitive species and a CDFW species of special concern. Suitable habitat includes grasslands, shrublands, woodlands, and mixed conifer forests. These species are known to roost in buildings, crevices, spaces under bark, and snags. Caves are used primarily as night roosts (Zeiner, 1990). Information/data on hibernation sites is limited, but they likely utilize rock crevices and caves. The proximity of roosts to a permanent water source and open/edge habitats is preferable for insect foraging and hydration.

The ESL provides suitable roosting habitat within the juniper woodland, and foraging likely occurs along open/edge habitat areas adjacent with wetlands and stream channels. No other hibernacula and roosting habitat was identified in the ESL. Tree clearing and grubbing activities have the potential to impact roosting bat species, which would be considered a potentially significant impact. However, seasonal tree removal (outside of the roosting season) will reduce potential impacts to a less than significant level.

American Badger Dens

The American badger is a CDFW species of special concern. They are highly specialized mustelids (weasel family) commonly found in treeless areas including tallgrass and shortgrass prairies, meadows, and shrub-steppe communities with friable soil and an ample supply of rodent prey. American badgers dig burrows for concealment, protection from weather, and as natal dens. During the summer American badgers usually use a new den each day, and in the winter a single den may be used for a majority of the season (Sullivan, 1996). Natal dens are usually much larger than diurnal dens. Badgers prey on small vertebrates, especially fossorial rodents, but also feed on a wide variety of prey including fish, snakes, lizards, carrion, skunks, insects, honeycombs, bees, larvae, and eggs of ground nesting birds (Sullivan, 1996). They may help control, and even substantially reduce, rodent populations in agricultural areas. Badgers are somewhat tolerant of human activities, however predator control using indiscriminate trapping and poison application causes extensive losses (Zeiner, 1990).

American badger is very active within the surrounding area of the ESL. Two observations (road mortality and foraging individual) were made during spring and summer surveys conducted in 2015. Big sagebrush and juniper woodland habitats provide suitable foraging for the badger, and the soils in the surrounding area appear to be friable and suitable for denning. Several unoccupied dens were observed within the ESL along roadway shoulder and banks, and within big sagebrush habitat. Roadway and shoulder grading activities have the potential to trap, injure

or kill badgers potentially denning in the work area. Direct badger mortality as a result of construction grading activities would be a potentially significant impact. Proposed pre-construction surveys identified in Chapter 4 under **Mitigation Measure BIO-3** will mitigate this potential impact to a less than significant level.

American Badger SR 299 Crossings

Wildlife crossings are areas of concentrated animal movement intercepted by roadways. In most cases, effects are seen because animals are inadvertently hit by drivers as they attempt to cross the road surface, leading to mortality of animals ("road-kill") and safety concerns to the motoring public (Caltrans, 2009). Wildlife crossing effects contribute to overall effects on species populations and habitats through a variety of mechanisms, including isolating populations (reproductive and genetic effects) and reduction of habitat availability (for foraging, breeding, dispersal) through vehicle disturbance and species road avoidance (Caltrans, 2009). In addition to American badger, a wide variety of small to medium sized mammals within the project area are also likely impacted to some extent by SR 299, including western spotted skunk, raccoon, coyote, and bob cat. Large mammal species (mountain lion, pronghorn antelope, American black bear, black-tailed deer, and mule deer) occurring within the region are also likely impacted by the existing SR 299 roadway network.

American badgers occurring in the surrounding region likely cross SR 299 during foraging and movement activities within their range. Based on the 2 observed badgers, numerous observed dens in the ESL, and 4 CNDDB recorded occurrences within 20 miles of the ESL, the project area likely has some sensitive wildlife crossings. Based on a GIS review of the existing species observation data (CNDDB and Caltrans), existing habitat data, and public land use data (CPAD, 2014), higher concentrations of badgers within the ESL appear to be associated with Clover Swale Creek (PM 27.3), the seasonal and emergent wetlands areas associated with Hot Creek and Pit River near PM 32.4 to 33.0, and an ephemeral swale and juniper woodland area from PM 25.7 to 26.0.

The existing SR 299 bridge at Clover Swale Creek provides existing passage opportunities for wildlife, and is proposed to remain in place and will not be replaced as part of the project. The widening and rehabilitation of SR 299 may potentially affect the existing local population of badgers by altering migration and movement patterns, potentially leading to increased road fatalities. The existing SR 299 likely contributes to fatalities as well, due to sediment blocked and undersized culverts that are not suitable for small to medium sized mammal passage. A proposed project design that does not incorporate suitable culvert size for badger passage under the roadway would be a potentially significant impact. In order to accommodate small to medium animal crossing in the project vicinity, **Mitigation Measure BIO-2** included in Chapter 4 modifies drainage plans to include larger crossdrains to accommodate drainage as well as animal passage. With incorporation of two suitable wildlife road crossings located between PMs 25.7 to 26.0 and 32.4 to 33.0, as well as the use of preventative maintenance measures, potential impacts to American badger due to roadway fatalities, population isolation, and loss of habitat availability within the BSA would be less than significant.

Greater Sandhill Crane

The greater sandhill crane is a U.S. Forest Service (USFS) sensitive species and listed by CDFW as threatened. It is a large bird (47.2 inch length and 78.7 inch wingspan) associated with wetlands and known for a loud trumpeting call and graceful and energetic courtship dance during breeding season (Cornell University, 2015). The sandhill crane population has been

greatly reduced in California, and breeding likely only occurs in Siskiyou, Modoc, Tehama, Plumas and Sierra Counties (Zeiner, etc. all, 1990). Greater sandhill cranes migrate to the Sacramento and San Joaquin Valleys in the winter, occupying wet meadow, shallow lacustrine, and freshwater emergent wetland habitats. It winters primarily in the Sacramento and San Joaquin Valleys from Tehama County south to Kings County. Preferred foraging habitat includes shortgrass plains, grain fields, and open wetlands. Sandhill cranes nest in remote and open portions of extensive freshwater emergent wetlands and shallow lakes, digging out depressions and lining with grasses. Utilizing their long bills they feed on grasses, forbs, cereal crops, roots, tubers, seeds, grains, earthworms, and insects. Larger prey, such as mice, small birds, snakes, frogs, and crayfish also are taken (Zeiner, etc. all, 1990). The greater sandhill crane avoids saline waters and requires fresh water for drinking and bathing. They are particularly sensitive to human disturbance when nesting, especially within a mile of the nest-site (Zeiner, etc. all, 2009).

Within the ESL there is very limited greater sandhill crane foraging and breeding habitat based on the high level of human disturbance and the lack of remote wetland habitat. However, the extensive seasonal and freshwater emergent wetland adjacent with the Pit River (south of the ESL) provides highly suitable foraging and breeding habitat. Surveys conducted in the spring and summer of 2015 identified a pair of cranes exhibiting nesting behavior. The location was approximately 1.5 miles southwest of the ESL, along the Pit River. Greater sandhill cranes are sensitive to human disturbances within 1 mile of a nest location. Proposed project construction has the potential to impact the greater sandhill crane by disrupting nesting activity that may occur in the vicinity of the ESL. Disrupting an active crane nest is a significant impact. **Mitigation Measure BIO-5** identified in Chapter 4, includes pre-construction nesting surveys. With incorporation of this measure potential impacts to nesting sandhill cranes will be reduced to a less than significant impact.

Swainson's Hawk

Swainson's hawk are listed by CDFW as threatened. They are broad-winged buteo hawks ranging from 18 to 22 inches in length. Females are slightly larger than males. Their migration range occurs from areas of Canada and the U.S. for breeding, south through South America into Argentina for over-wintering. Breeding habitat includes shrub-steppe, riparian, and oak savanna woodlands. Swainson's hawks construct their nests in a wide variety of trees species, existing as riparian forest, remnant riparian trees, planted windbreaks, shade trees at residences, and along roadsides, and solitary upland oaks (Woodbridge, 1998). They forage in agricultural and annual grassland areas, feeding on large insects, predominately grasshoppers. When nesting Swainson's hawk will feed on rodents, rabbits, and reptiles (USFWS, 2015). Pesticides are a large cause of mortality for Swainson's hawk, with many killed in the mid 1990's in Argentina from use of a now banned organophosphate insecticide (USFWS, 2015). Land use conversion of native habitats is also a cause for their population decline.

Juniper woodland within the vicinity of the ESL provides suitable breeding habitat, and the big sagebrush and wetland areas provide suitable foraging habitat for Swaison's hawk. Based on the regional abundance of foraging habitat, the loss of 10.0 acres of foraging habitat as a result of the project will not likely result in an impact to Swainson's hawk. However, proposed project construction has the potential to impact Swainson's hawk by disrupting nesting activity that may occur in the vicinity of the ESL. Disrupting an active Swainson's hawk nest is a significant impact. **Mitigation Measure BIO-5** identified in Chapter 4, includes pre-construction nesting surveys. With incorporation of this measure potential impacts to nesting Swainson's hawk will be reduced to a less than significant impact.

Hardhead

The hardhead is a CDFW species of special concern and a USFS sensitive species. Most hardhead minnows mature in their third year and typically spawn in beds of gravel in riffles, runs, or the heads of pools during the spring from April to May. They feed on plankton, aquatic plants, and invertebrates (Moyle, 2002). In larger streams, fish often migrate upstream to locate suitable spawning habitat. After hatching, young larval hardheads remain along stream edges in dense vegetative cover. As juveniles grow, they move into deeper water habitats or are swept by high flows downstream to larger rivers. Hardhead minnows are typically found in the warmest undisturbed areas of low to mid-elevation streams. At higher temperatures, hardheads require streams or surface water of reservoirs with high oxygen levels. Preferred habitat consists of clear, deep pools and runs with sand-gravel-boulder substrates and slow water velocity. In streams, adults are often found in the lower half of the water column, while in reservoirs, they are found hovering near the surface.

Clover Swale Creek and Hot Creek provide potential habitat for hardhead within the ESL. SR 299 crosses both of these stream features. No work is proposed within Clover Swale Creek. However, in-channel work within Hot Creek has the potential to impact hardhead, as dewatering activities may lead to direct fish mortalities through entrainment or impingement. This is a potentially significant impact. To address this potentially significant impact, an aquatic organism rescue plan during construction site dewatering is included in Chapter 4 as **Mitigation Measure BIO-4**. With the incorporation of an aquatic organism rescue plan, potential impacts to hardhead as a result of construction will be reduced to a less than significant level.

Pit Roach

The Pit roach is a CDFW species of special concern. They are a small fish (less than 4 inches) that occur in a wide variety of stream habitats, from cool headwater streams to lower warm water reaches. Generally they are more associated with small warm streams, with dense populations often observed in isolated intermittent stream pools (Moyle, 2002). The Pit roach feeds on terrestrial and aquatic insects, as well as small crustaceans. The Pit roach historic range has been reduced due to loss of riparian habitat, stream diversions, stream crossings, land use conversions and the introduction of exotic predators, including the green sunfish (*Lepomis cyanellus*) and largemouth bass (*Micropterus salmoides*). Their current known range includes the upper Pit River, Goose Lake, and associated tributaries (Moyle, 2002).

Clover Swale Creek and Hot Creek provide potential habitat for Pit roach within the ESL. SR 299 crosses both of these stream features. No work is proposed within Clover Swale Creek. However, in-channel work within Hot Creek has the potential to impact Pit roach, as dewatering activities may lead to direct fish mortalities through entrainment or impingement. This is a potentially significant impact. To address this potentially significant impact, an aquatic organism rescue plan during construction site dewatering is included in Chapter 4 as **Mitigation Measure BIO-4**. With the incorporation of an aquatic organism rescue plan, potential impacts to Pit roach as a result of construction will be reduced to a less than significant level.

Sensitive Natural Communities

Big Sage Brush Shrubland

The proposed project will impact approximately 8.8 acres of big sage brush habitat. Within the ESL this habitat has been marginalized and isolated from the surrounding contiguous areas outside of the localized development/disturbance associated with SR 299. Based on the immediate proximity to SR 299, the overall minimal disturbance area, and the regional abundance of this habitat type, the anticipated loss of habitat would result in a less than significant impact to the regional big sage brush shrubland ecosystem.

Western Juniper Woodland

The proposed project will impact approximately 0.4 acres of western juniper woodland habitat. Proposed impacts are minimal, and based the regional abundance of this habitat, proposed project impacts to western juniper woodland would be less than significant.

Table 3: Proposed Impacts to Native Habitats within the ESL

Type	Permanent Impacts (acres)	Habitat within the ESL (acres)	Percentage of Impact within the ESL
Big Sagebrush Shrubland	8.8	54.6	16%
Western Juniper Woodland	0.4	5.5	7%
Total	**9.2**	**60.1**	**15%**

Jurisdictional Waters of the U.S.

A total of 1.94 acres of potentially jurisdictional features occur within the ESL. Potentially jurisdictional wetlands within the study area include seasonal and freshwater emergent features. Potentially jurisdictional other waters of the U.S. (stream channels) within the study area include the perennial Clover Swale Creek and Hot Creek, and several ephemeral channel and swale features. Based on the preliminary work footprint and grading limits the proposed project will permanently impact approximately 0.51-acres of potentially jurisdictional wetlands and 0.06-acres of potentially jurisdictional stream channels. Permanent impacts are the result of proposed roadway widening. Table 3 below summarizes proposed impacts to stream channel and wetland as a result of the project.

All other proposed work within Hot Creek will be temporary and the channels will be restored to original contours. A Storm Water Pollution Prevention Plan (SWPPP) that identifies potential sources of pollution related to construction, as well as Best Management Practices (BMPs) will be incorporated into project construction in order to avoid potential adverse water quality impacts to downstream resources.

Based on the proposed temporary and permanent impacts to jurisdictional waters of the U.S., the following permits will be required as a result of project construction:

- Section 1602 Lake Streambed Alteration Agreement (LSAA) from the California Department of Fish and Wildlife (CDFW)
- Section 401 Certification from the Central Valley Regional Water Quality Control Board (CVRWQCB)
- Section 404 Permit from the U.S. Army Corps of Engineers (ACOE)

The proposed permanent impact of approximately 0.57 acres of wetland and stream channel habitat is a potentially significant impact. With incorporation of **Mitigation Measure BIO-1** in Chapter 4, impacts to potentially jurisdictional wetland and stream channel habitat would be reduced to less than significant.

Table 4: Proposed Impacts to Waters of the U.S. within the ESL

Type	Permanent Impacts (acres)	Impacted Length (feet)	Percentage of Impact within the ESL
Ephemeral Channel	0.01	182.2	25%
Intermittent Channel	0.01	95.6	72%
Perennial Channel	0.04	117.2	39%
Total Impacts to Stream Channels	**0.06**	**395.0**	**35%**
Seasonal Wetland	0.17	--	15%
Freshwater Emergent Wetland	0.34	--	56%
Total Impacts to Wetlands	**0.51**	**--**	**29%**
Waters of the U.S. Totals	**0.57**	**395.0**	**29%**

Migratory Bird Species

The region surrounding the ESL is an extensive summer/breeding location for migratory birds. The seasonal and emergent wetland network associated with the Pit River and its tributaries provides nesting and foraging habitat for a wide variety of migratory waterfowl, and juniper woodland and big sagebrush habitats provide nesting and foraging opportunities for migrating raptors and songbirds. Several local non-migratory bird species also nest and forage within the juniper woodland and big sagebrush habitats. Nesting birds are protected under the MBTA, and impacts to nesting activity can be considered a significant impact. Field surveys were conducted in the spring and summer of 2015 to identify potential nesting habitat and/or presence of existing nests within the ESL. Cliff swallow nests were identified under the Clover Swale Creek bridge. No other nests were observed within the ESL. Disruption of the Clover Swale Creek swallow nesting activity is not anticipated, as no work is proposed under the existing bridge structure. Disruption of nesting activity is a potentially significant impact. However, the standard practices of tree removal between October 1st and February 15th and pre-construction nesting bird surveys will avoid potential impacts to potentially nesting migratory bird species, and no impact is anticipated.

Critical Habitat

Based on the database searches and agency correspondence, no designated critical habitat for listed species occurs within the vicinity of the ESL. The Federal Register and USFWS Critical Habitat Mapper have been used to map the critical habitat of federally listed species, and no known critical habitat exist within the ESL or its vicinity. The ESL does not have suitable habitat to support federally listed or proposed species potentially occurring in the area. Therefore, the proposed project activities will have no effect on federally listed or proposed species and associated critical habitat.

3.3 Cultural Resources

Caltrans has conducted all of the necessary steps to comply with Section 106 of the National Historic Preservation Act and Public Resources Code Section 5024. This was accomplished through appropriate records searches and public and Native American outreach, preparation of an Area of Potential Effects map, field surveys, phase II site evaluation, preparation of a Historic Property Survey Report that includes an Archaeological Survey Report and Archaeological Evaluation Report. Consultation took place with the Local Native American Tribes and Native American Heritage Commission on various dates throughout the environmental phase of the project. Consultation with the Local Native American Tribe would continue through project construction.

Literature and record searches of the proposed project area included visits to and/or contacts with a number of repositories, agencies, organizations, and individuals. The cultural resources field review for this project was conducted in the spring and fall of 2015. Additional field studies, including a Phase II archaeological evaluation was undertaken in the winter of 2016. The purpose of these efforts was to identify and evaluate any historic properties that may exist within the project area, and to assess any effects that the proposed project might have with regard to the historic properties.

The historic property identification efforts of the Caldwell Creek Rehabilitation Project identified ten cultural resources within and/or immediately adjacent to the project limits. Of the ten resources identified, only a single multi component site (CA-MOD-1468/H) will be directly impacted as a result of the proposed project. The multi-component site contains a prehistoric lithic scatter and a sparse scatter of historic cans in colluvial materials atop a bedrock outcrop.

The eligibility of site CA-MOD-1468/H had not been previously determined. Caltrans has evaluated and concluded that CA-MOD-1468/H does not meet National Register of Historic Places and/or California Historical Register of Historic Places eligibility criteria, as outlined in CEQA Guidelines 15064.5(a), and are not historic resources for purposes of CEQA. The Final Phase II Archaeological Evaluation Report and subsequent SHPO concurrence on this eligibility determination are forthcoming, and expected in June 2016.

The remaining resources are outside of the Area of Direct Impact (ADI) for the proposed project. All of the remaining resources will be protected and completely avoided from all adverse impacts through the establishment of an Environmentally Sensitive Area (ESA) and the development of an ESA Action Plan. As part of the ESA Action Plan, protective fencing will be included in the project plans and periodic monitoring of sensitive locations will be conducted by Caltrans throughout the course of the construction project.

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in the area until a qualified archaeologist can evaluate the nature and significance of the find.

3.4 Geology and Soils

The proposed project site is not located in an area that contains recent active earthquake faults, and is not subject to strong seismic ground shaking, seismic-related ground failure, and/or landslides (California Department of Conservation, 2015). No faults in Modoc County have been known to rupture in the past 200 years (Modoc County, 1988). Several Pleistocene age faults (age undifferentiated) cross north to south through SR 299 within the ESL. Faults of this category show evidence of displacement sometime during the past 1.6 million years, but do not have recent historic evidence. The nearest more recent fault is the Holocene age (200 years to 10,000 years old) Surprise Valley fault zone near Cedarville, California, approximately 22 miles east of the ESL. The 85-km-long Surprise Valley fault zone forms the western active margin of the Basin and Range province in northeastern California (U.S. Department of the Interior, 2007). The distance of the ESL from this fault zone and the lack of recent fault activity minimize the potential for seismic impacts within the project area. In addition, Caltrans will adhere to Seismic Design criteria and Uniform Building Code requirements for the applicable seismic zone. As a result, no impacts are anticipated within the proposed project area as a result of fault rupture, seismic ground shaking, liquefaction, or ground failure.

The project does not propose the use of septic tanks and/or alternative waste water disposal systems, resulting in no impact to these systems.

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) soil survey GIS data was used to determine the soil associations mapped within the ESL (NRCS, 2015). Associations include: Ager Clay, 2 to 15% Slopes; Ager Cobbly Clay, 2 to 15% Slopes; Alturas Loam; Casuse Sandy Loam, 2 to 9 % Slopes; Daphnedale Cobbly Loam, 9 to 30 % Slopes; Daphnedale-Delma Loam, 2 to 9% Slopes; Daphnedale Loam, 2 to 9% Slopes; Deven-Rock Outcrop Complex, 2 to 30 % Slopes; Ladd Sandy Loam, 2 to 9 % Slopes; Lakeview Clay Loam, 2 to 5 % Slopes; Modoc Sandy Loam, 0 to 9 % Slopes; Pineal Silt Loam, Pit Silty Clay Loam, 0 to 2 % Slopes; Rumbo Loam, 0 to 2 % Slopes; and Tuff Outcrop-Casuse, Eroded Complex, 2 to 15 % Slopes (Caltrans, 2016b). A majority of these soil types are not known to be unstable and/or expansive. Three soil types occurring in the ESL, Tuff Outcrop-Casuse, Eroded Complex, 2 to 15 % Slopes; Deven-Rock Outcrop Complex, 2 to 30 % Slopes; and Daphnedale Cobbly Loam, 9 to 30 % Slopes; have the potential for severe erosion.

Implementation of the project as planned would result in a less than significant impact; however, several standard Caltrans construction measures/practices will minimize potential erosion during and after construction is complete. Site preparation and grading associated with project construction activities will potentially expose bare soil to erosive forces. A Stormwater Pollution Prevention Plan (SWPPP) is required to be prepared for the project, which will outline BMPs and other measures that will be taken to reduce or eliminate impacts arising from erosion and sedimentation. All soils disturbed by grading will be reseeded, hydromulched or stabilized as soon as possible before October 15 of the construction year. Based on hydraulic analysis prepared by project engineers, the proposed culvert designs for drainage under SR 299 will provide capacity, which decreases flow velocity and outlet scour potential, which ultimately provides a more consistent flow condition for stream channel drainage through the ESL (Caltrans, 2016a).

3.5 Greenhouse Gas Emissions

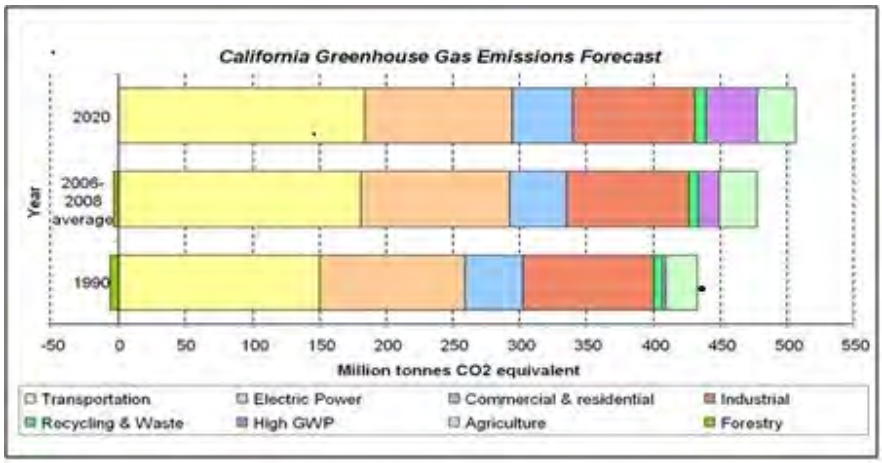
Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, similar to a greenhouse. The accumulation of GHGs has been implicated as a driving force for Global Climate Change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and the impact of human activities that alter the composition of the global atmosphere. Both natural processes and human activities emit GHGs. Global Climate Change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, the vast majority of the scientific community now agrees that there is a direct link between increased emission of GHGs and long term global temperature.

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contribution of all other sources of GHG.[1] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

The Assembly Bill (AB) 32 Scoping Plan mandated by AB 32 contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board (CARB) released the GHG inventory for California (forecast last updated: May 2014). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

---

[1] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 3: California Greenhouse Gas Forecast

Caltrans and its parent agency, the California State Transportation Agency (formerly the State Business, Transportation, and Housing Agency), have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human-made GHG emissions are from transportation, Caltrans has created and is implementing a Climate Action Program, published in December 2006.[2]

Project Operational Analysis

The purpose of the proposed project is to provide a reliable state route that reduces distressed lane miles by restoring the service life for up to 20 additional years and providing a roadway that conforms to existing paved approaches, has minimal maintenance requirements, and exhibits improved ride quality. Upon completion the proposed project would not increase capacity or vehicle miles travelled on SR 299, and therefore is not anticipated to contribute to increases in operational GHG emissions.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications, and by implementing traffic management practices during construction phases. Even though the project is not anticipated to increase operational GHG emissions, the proposed project would generate some GHG emissions during construction.

Impact Conclusion

While construction would result in a slight increase in GHG emissions during construction, it is anticipated that the project would not result in any increase in operational GHG emissions. It is

[2] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination with regard to the project's direct impact and its contribution on the cumulative scale related to climate change. Since the project would result in minimal GHG emissions during temporary construction and would not result in an increase in GHG emissions during long-term operations, the project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. However, Caltrans is firmly committed to implementing measures to help reduce GHG emissions, as follows:

Project level GHG measures

During construction, the project would utilize a One Way Reversing Traffic Control type of temporary detour, which would eliminate traffic delays and long periods of traffic holding (idling). While construction emissions of greenhouse gases are unavoidable, the proposed project is minor in scope, and construction utilizing mechanized equipment would be of relatively short duration.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level, and a corresponding reduction in GHG emissions; the Strategic Growth Plan proposes to accomplish these targets while accommodating growth in population and the economy. A suite of investment options has been created that, combined together, are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: systems monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements, as depicted in Figure 4.

Figure 4: Mobility Pyramid

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, and light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note; however, that the control of the fuel economy standards is held by the U.S.EPA and CARB.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds through longer periods of intense heat; increasing storm damage from flooding and erosion; and State Route inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

On November 14, 2008, former Governor Arnold Schwarzenegger signed Executive Order (EO S-13-08) which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

EO S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance, and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise. The proposed project ESL is outside of the coastal zone and is not in an area expected to experience direct impacts due to sea level rise for the projected 2050 and 2100 years.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to EO S-13-08.

3.6 Hazards and Hazardous Materials

The project does not involve the routine transport, use, or disposal of hazardous materials, and is not located on a known hazardous materials site per Government Code Section 65962.5 (Caltrans, 2016c; California State Water Resources Control Board, 2015; California Department of Substances Control, 2015). The project is not in the vicinity of an existing or proposed school, public or private airport, and/or airstrip. The project would not interfere with an emergency response plan and/or emergency evacuation plan, or expose people or structures to wildland fire-related hazards. The project would result in less than significant impacts related to the above hazards and hazardous materials items.

An Initial Site Assessment (Caltrans, 2016c) identified the potential for several minor hazardous waste/material issues within the ESL; Lead Containing Paint (LCP) related to thermoplastic and/or paint striping removal, Aerially Deposited Lead (ADL), and Treated Wood Waste (TWW). Caltrans adheres to hazardous material regulatory requirements by providing Standard Construction Specifications within the construction documents that outline proper procedures for removal and disposal.

Thermoplastic paint may contain lead of varying concentrations depending upon color, type and year of manufacture; the removal of any stripe/marking, concurrent with the removal of existing asphalt concrete (AC), will require a lead compliance plan. If yellow thermoplastic will be removed as a separate operation, Standard Construction Specifications will be used to address hazardous waste regulatory requirements (CCR Title 22).

It is expected that lead will be present in soils within the proposed project ESL, but will not likely occur at Hazardous Waste levels. Construction specifications would be included to address appropriate lead removal (including preparation of a Lead Compliance Plan), and temporary

storage, testing, and transportation to an appropriate disposal or recycling facility. In addition, a requirement would be included for the contractor to provide written documentation that recycling or disposal facilities acknowledge the potential for lead on the material received.

Treated wood is present within the project limits in the form of MBGR and sign posts. If TWW (guard rail posts, sign posts, crib walls, etc.) is removed, it may not be relinquished to the contractor and must be disposed of at an appropriately permitted disposal facility or may be reused on the originating project in a manner consistent with the intended use for the preservative. In addition to disposal, regulations specify the manner in which TWW must be stored while awaiting disposal. If TWW will be generated during this project, contract specifications will be prepared by Caltrans to address its disposal.

A geologic evaluation regarding Naturally Occurring Asbestos (NOA) was conducted within the project limits. This evaluation included a review of geologic maps and reports including data prepared by the California Geological Survey (CGS) and the United States Geological Survey (USGS), previous studies conducted by Caltrans and their consultants, and a field inspection of the geology in the project area. The evaluation does not indicate the presence of altered ultramafic bedrock, alluvium derived from ultramafic rock, and other rock commonly associated with NOA.

While there are no indications of ACM within the proposed project ESL, the Asbestos NESHAP, 40 CFR Part 61, Subpart M, does require written notification of demolition or renovation operations of structures regardless of the presence or absence of asbestos. If structures are demolished during construction the contractor should be required to notify the CARB-Compliance Division, 2020 'L' Street, Sacramento, CA 95814 under NESHAP, 40CFR Part 61, and CARB rules/requirements. A copy of the notification form and attachments should be provided to the Engineer prior to submittal to the CARB. Notification should take place a minimum of 10 days prior to the beginning of work.

Prior to construction activities a Preliminary Site Investigation would be completed in order to identify and, if necessary, quantify the presence of these waste/material issues. Project impacts relative to hazardous waste would be less than significant; however, Caltrans standard specifications as described above would be included.

3.7 Hydrology and Water Quality

The ESL is located within the Upper Pit Watershed (USGS Cataloging Unit 18020002). Ranging from 0.3 to 1.5 miles south of the ESL, the Pit River meanders in a southwest direction through the Warm Springs Valley. Surface water features flow south through the ESL to the Pit River. These features include the perennial Clover Swale Creek and Hot Creek, and several ephemeral channel and swale features. Existing bridge and culverts convey flow of these features under SR 299. Several adjacent seasonal and emergent wetlands are associated with the perennial stream channels (Clover Swale Creek and Hot Creek). Several lakes and reservoirs are located within the mountainous landscape to the north of the ESL. These water storage features, as well as local seeps and springs contribute to stream channel systems within the proposed project area.

Surface water features within the study area drain to the Pit River. The Pit River flows in a southwest direction and eventually joins Hat Creek and drains into Lake Briton which is formed by a man-made dam (located approximately 50 miles from the study area). The Pit River re-

emerges downslope of the dam and continues to flow southwest, forming several reservoir systems from a series of man-made dams, until flowing into Lake Shasta. Lake Shasta spills into and supplies the Sacramento River, a traditional navigable waterway.

The project consists of the rehabilitation of an existing roadway, and would not impact groundwater supplies. The project site is not located in an area that would be impacted by a seiche, tsunami, or mudflow.

Existing conditions of the ESL culvert and drainage systems flowing under SR 299 include areas with outlet culvert head cuts and scour issues, as well as several sediment blocked culverts. Several soil types within the ESL have the potential for high erosion. Runoff from the project site during construction has the potential to transport silt and other sediments downstream if soil surfaces exposed during project construction are not stabilized. The Federal Water Pollution Control Act was adopted to protect the quality of the nation's surface waters and is implemented through the National Pollutant Discharge Elimination System (NPDES). In California, the NPDES is implemented through the Storm Water Permitting Unit of the State Water Resources Control Board. In accordance with construction specifications, the contractor would be required to submit a SWPPP. The SWPPP would be prepared in accordance with Caltrans' Storm Water Management Program and the Statewide Caltrans NPDES Permit issued by the State Water Resources Control Board. The SWPPP identifies potential sources of pollution and includes Caltrans' Best Management Practices (BMPs) that would be implemented to avoid and/or minimize potential sediment delivery or chemical contamination to channels and wetlands within the ESL.

A Floodplain Evaluation Report Summary was prepared for the proposed project, which included a Location Hydraulic Study that was evaluated by engineering judgment, review of hydraulic history files, and correspondence with local Caltrans maintenance staff (Caltrans, 2016a). A model of the existing channels and the roadway condition was performed to identify and document the existing hydraulic condition as a baseline reference for which to compare the expected design condition. Proposed culvert designs associated with various channel features will provide capacity under SR 299 and avoid and reduce the potential for onsite erosion through BMPs and various treatments including reseeding and stabilizing exposed soil areas, as well as placing crushed rock at culvert inlet and outlet locations. In addition, construction is proposed during the dry season to avoid potential effects to water quality from erosion or other construction related pollutants. A clear water diversion will be utilized for work in the vicinity of Hot Creek. The existing bridge at Clover Swale Creek is not proposed to be replaced, and a water diversion is not required. Other channel features will likely be dry during construction based on dry season permitting requirements. All work within stream channels and wetlands would be subject to CDFW 1602 Permit requirements, and compliance with Sections 401 (CVRWQCB) and 404 (USACE) of the Clean Water Act would be required. Based on these requirements and the proposed BMPs, the project's impacts on stream channels, hydrology and water quality would be less-than-significant.

Two locations within the ESL, Clover Swale Creek and Hot Creek, are within FEMA Flood Zone A, which includes areas subject to inundation by the 1-percent-annual-chance (or 100-year flood) flood event. Clover Swale Creek is designated as a Special Flood Hazard Area (SFHA), Zone A (areas with base flood elevations), which is shown crossing SR 299. The roadway profile is proposed to be raised 1.2 ft in the vicinity of Clover Swale Creek to account for improved roadway geometrics and HMA overlay. The existing base flood elevation does not overtop the existing roadway, and raising the profile will not significantly impact the floodplain (Caltrans, 2016a). The existing bridge at Clover Swale Creek is not proposed to be replaced

and can adequately convey a 100 year event. The Pit River floodplain is designated SFHA, Zone A, and is shown encroaching north on SR 299 in the vicinity of Hot Creek within the ESL. At this periphery floodplain location water velocities are near zero. Three existing culverts convey Hot Creek back and forth across SR 299. During heavy wet weather events high flows go through the first (western most) culvert and disperse into the Pit River floodplain on the south side of SR 299, and do not re-enter the channel. Proposed raising of the roadway profile 1.7 ft at this location will not significantly affect the conveyance of flow of the Pit River and will not significantly impact the floodplain. There is no history of flow overtopping SR 299 within the limits of the ESL (Caltrans, 2016a). Based on the hydraulic analysis and proposed drainage conveyance design, project impacts related to flooding and the 100 year floodplain would be less-than-significant.

3.8 Noise

Noise is defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The time-varying characteristic of environmental noise is described using statistical noise descriptors.

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than are commercial (other than lodging facilities) and industrial land uses. Noise-sensitive uses in the project vicinity include scattered rural residences located in the immediate vicinity of SR 299. The nearest residential receptor to the project site is approximately 40 feet from the project. Please see Section 3.8 for a discussion of potential effects from temporary construction noise generation.

No construction impact activities, such as pile driving, are proposed during project construction, and as a result there would be no impacts associated with ground-borne vibration.

Vehicle noise emissions increase with speed, and increased traffic volumes increase traffic noise, but it takes a doubling of traffic to increase noise levels by only 3 dBA (Caltrans, 2009). A doubling of traffic volumes is required to increase the noise level to a potentially significant range of 3 dBA above the existing noise level. However, no new vehicle trips would result from the completion of the proposed project. Therefore the project would not double traffic on existing roadways which currently carry area traffic. The project consists of no operational attributes that would contribute significantly to ambient noise. There would be no noise impact associated with project operations.

The project site is not located in the vicinity of a public or private airport and/or airstrip. The project is not in an area within two miles of a public airport, public use airport, or private airstrip facilities, resulting in no impact to these type of facilities.

The ambient noise environment within the ESL is influenced primarily by motor vehicle traffic. The level of noise at any given location near a roadway depends upon the volume of traffic, vehicle mix (i.e., the relative proportion of autos to trucks), vehicle speeds, setback distance from the roadway, and any barriers between the roadway and receptor. Ambient noise levels due to vehicle use along SR 299 can reach up to approximately 90-100 dB. This is due to SR 299 being a traveled thoroughfare for the public, heavy equipment, and logging trucks. Logging truck "Jake brakes" typically produce noise in excess of 100 dB at the source (USFWS, 2006).

Regardless of the existing ambient noise in the area, temporary increases in noise levels would likely occur during construction of the project. These temporary construction activities could generate noise levels in the range from 80-100 dB (EPA, 1971). Construction noise and vibration from contractor equipment is unavoidable, but is a temporary noise source regulated by Caltrans' Standard Specifications. These Specifications require the contractor to comply with local noise ordinances/rules, as well as require the use of sound reducing mufflers on all internal combustion engines. It is assumed construction activities would generally occur during daytime hours from 7:00 a.m. to 7:00 p.m., and avoid more noise-sensitive late evening or early morning hours when ambient noise levels are low and when the potential for annoyance is high. As a result, construction would result in a less than significant impact because the construction noise is only temporary and intermittent.

3.9 Transportation and Traffic

Modoc County has a high percentage of roadway networks when compared to the overall population, which leads to budget shortfalls when considering roadway maintenance and upgrades. Private roadway networks are often times not incorporated into the County's inventory because of the financial burden to upgrade to minimum roadway standards (Modoc County, 1988). The proposed project is located along SR 299, a two-lane paved rural State Route. When completed, the project will provide rehabilitated pavement and roadway widening to provide improved/increased lane and shoulder spacing. When completed the proposed project will provide the same roadway capacity and is not anticipated to result in increased vehicular trips on SR 299.

The proposed project would not result in conflicts or impacts related to air traffic patterns, or increased hazards due to a design features, inadequate emergency access, and/or adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. The proposed project would provide standard shoulder width which would improve safety for motorists, bicyclists and pedestrians. Provisions will be made during construction to minimize traffic delays and to allow access and passage of emergency vehicles.

The proposed project would have a less than significant impact on transportation/traffic; However, Caltrans standard traffic control methodologies will be utilized during construction activities. Vehicle traffic during construction would be controlled using one way traffic control in accordance with Caltrans standard provisions. Traffic control as a result of construction activities may result in minor temporary delays for motorist travelling through the project area, however, this delay would be temporary and is considered negligible, resulting in a less than significant impact

3.10 Mandatory Findings of Significance

The proposed project would not result in adverse effects to environmental resources and does not have the potential to degrade the quality of the environment. The proposed project consists of the rehabilitation of an existing roadway, and there would be no significant impacts related to mandatory findings of significance. The proposed project would impact a minimal amount of wildlife habitat, and potential impacts to sensitive fish and wildlife species potentially occurring in the vicinity of the proposed project have been reduced with the implementation of avoidance, minimization, project design, and mitigation measures. To mitigate for the permanent loss of wetland and stream channel habitat, off-site mitigation credits will be purchased at an ACOE approved mitigation bank at a 2:1 ratio.

The proposed project would not result in any adverse effects that, when considered in connection with other projects, would be considered cumulatively considerable.

Based on the description of the proposed project and consideration of potential effects, there is no evidence to support a finding that the project would have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly.

Chapter 4. Mitigation Measures

The following mitigation measures would be utilized by Caltrans as part of the proposed project in order to reduce potential environmental effects to a less than significant level:

- **BIO-1**. Mitigation credits for permanent impacts to approximately 0.06 acres of stream channels and 0.51 acres of wetlands would be purchased In-Lieu Fee from the Pit River service area or from an ACOE approved mitigation bank at a proposed 2:1 ratio.

- **BIO-2**. To accommodate passage under SR 299 for American badger and other small to medium sized mammals, two proposed drainage culverts would be upsized to at least 4.5 ft in diameter for areas within PM 32.4 to 33.0 and PM 25.7 to 26.0. The culverts would be easily accessible, lengthened to the toe of roadway slope with appropriate substrate leading up to a culvert to encourage mammal passage. Rip rap with a mix of smaller rock, gravel, and surrounding native material to fill in large gaps would be suitable for passage. Routine maintenance would occur to ensure no culvert blockage. Clear visibility through to the other end of the crossing is essential. If scouring following storms prevents access, the scoured rocks or soil would be replaced with like materials to eliminate "hanging culverts" and not replaced with boulders, rip-rap or other substrates unsuited to the animal species the culvert was intended to benefit (Caltrans, 2009).

- **BIO-3**. Prior to grading and construction activities, the entire alignment would be surveyed for active American badger dens within the proposed grading area. If an active den is identified, appropriate exclusion or relocation methods would be utilized including live traps, one way doors, or other approved methods. Efforts shall be conducted through coordination with CDFW.

- **BIO-4**. For proposed in-water activities within Hot Creek, in order to avoid entrainment or impingement of hardhead, pit roach, or other aquatic species, a qualified biologist would be required to be onsite to salvage and relocate any fish species or other aquatic organisms potentially occurring in the work area. Fish relocation efforts shall be executed and occur if a cofferdam or any other water diversion is necessary.

- **BIO-5**. Prior to the initiation of project construction activities occurring during the bird nesting season (March 15th through September 1st), the entire project area would be surveyed by a qualified biologist for potentially nesting greater sandhill crane and Swainson's hawk. If greater sandhill crane or Swainson's hawk are observed nesting within ½ mile of project construction, a qualified biologist would monitor nesting activity to ensure no disturbance is occurring as a result of project construction. CDFW would be notified of the nesting activity if a qualified biologist determines project construction activities have the potential to disturb the nest site.

- **BIO-6**. Prior to project grading activities, the two small populations of Janish's beardtongue and dwarf fleabane within the ESL would be relocated to suitable habitat where they will be undisturbed upon completion of the replanting effort. Seed collection and planting would also be a suitable method for plant conservation. The planting location should be in an undisturbed area within the ESL or offsite.

This page blank.

Chapter 5. List of Preparers

This Initial Study was prepared by the California Department of Transportation, North Region Office of Environmental Management, with input from the following staff:

Eric Akana, Project Manager
Contribution: Project management

David Demar, Project Archaeologist
Contribution: Cultural resource surveys and reports

Brett Ditzler, Hydraulics Project Engineer
Contribution: Floodplain Evaluation Report Summary and Location Hydraulic Study

Russell Flood, Project Engineer
Contribution: Project design

Jamie Galos, Project Environmental Coordinator and Biologist
Contribution: IS/MND and Natural Environment Study

Mark Harvey, NPDES Coordinator
Contribution: Water Quality Assessment Report

Chris Quiney, Environmental Branch Chief
Contribution: IS/MND senior review

Steve Topal, Senior Project Engineer
Contribution: Project design oversight

This page blank.

Chapter 6. References

Association of Environmental Planners. 2007. *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents*.

Association of Environmental Planners. 2015. *2015 California Environmental Quality Act (CEQA) Statute and Guidelines.*

California Department of Conservation. *California Important Farmland Finder*. Accessed: December 3, 2015. http://maps.conservation.ca.gov/ciff/ciff.html

California Department of Conservation. *2010 Fault Activity Map of California*. Accessed: December 4, 2015. http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html

California Department of Fish and Wildlife (CDFW). 2015. California Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento, CA

CDFW. 2015. Spotted Owl Database Viewer. Accessed online on September 17th, 2015 at https://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp

California Department of Transportation. 2016a North Region Office of Hydraulic Design - Redding. *Floodplain Evaluation Report Summary and Location Hydraulic Study.*

California Department of Transportation. 2016b. North Region- Environmental Management. *Natural Environment Study, Caldwell Creek Roadway Rehabilitation.* Redding, CA.

California Department of Transportation. 2016c. Office of Environmental Engineering. *Initial Site Assessment- Caldwell Creek Roadway Rehabilitation Project, SR 299 in Alturas County.*

California Department of Transportation. 2016d. *Water Quality Assessment Report, Caldwell Creek Roadway Rehabilitation Project.* Redding, CA.

California Department of Transportation. 2016e. Office of Environmental Analysis, North Region. 2016. *Draft Historic Property Survey Report/Archaeological Survey Report.*

California Department of Transportation. 2015. Draft Delineation of Jurisdictional Waters- Caldwell Creek Roadway Rehabilitation Project. North Region- Environmental Management. Redding, CA.

California Department of Transportation. 2015. *Standard Specifications, as revised*.

California Department of Transportation. 2009. Wildlife Crossings Guidance Manual. Environmental Division. Sacramento, CA.

California Department of Transportation. 2009. Caltrans Technical Noise Supplement. November, 2009.

California Department of Transportation. *Climate Action Program*. http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf (Accessed September 2015).

California Department of Transportation. 2009. Wildlife Crossings Guidance Manual. Environmental Division. Sacramento, CA.

California Department of Substances Control. 2015. Envirostor- Online Database of Hazardous Cleanup Sites or Waste Facilities. *Accessed online at http://www.envirostor.dtsc.ca.gov/public*

California Environmental Protection Agency, Air Resources Board. May 2014. *California Greenhouse Gas Emission Inventory: 2000-2012.*

California Environmental Protection Agency, Air Resources Board. 2015a. *California Air Basin Facts.* Accessed online at *http://www.arb.ca.gov/knowzone/basin/basin.swf*

California Environmental Protection Agency, Air Resources Board. 2015b. *Area Designations Maps.* Accessed online at *http://www.arb.ca.gov/desig/adm/adm.htm*

California Native Plant Society. Inventory of Rare and Endangered Plants (online Edition, v8). California Native Plant Society, Sacramento, CA. Accessed on November 2015.

California State Water Resources Control Board, 2015. *GeoTracker- Environmental Data for Regulated Facilities in California.* Accessed online at *http://geotracker.waterboards.ca.gov/*

Cornell University. 2015. The Cornell Lab of Ornithology- All About Birds, Online Inventory. http://www.allaboutbirds.org/guide/Tree_Swallow/lifehistory http://www.allaboutbirds.org/guide/Sandhill_Crane/lifehistory

Cowardin, L.M., V. Carter, F.C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Environmental Protection Agency, 1971, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. NTID 300-1*.

Environmental Protection Agency. 2015a. *Current Nonattainment Counties for All Criteria Pollutants.* Accessed online at: http://www3.epa.gov/airquality/greenbk/ancl.html

Environmental Protection Agency. 2015b. *Surf Your Watershed- Upper Pit Watershed 18020002.* Accessed online at: http://cfpub.epa.gov/surf

Miles, S.R. and C.B. Goudey. 1997. Ecological Subregions of California: Section and Subsection Descriptions. USDA Forest Service, Pacific Southwest Region Publication R5-EM-TP-005. San Francisco, CA.

Mindat. 2015. *Online Inventory of Mining Resources in Modoc Co, CA*. Accessed online at: http://www.mindat.org/loc-28447.html#themap.

Modoc County. 1988. *Modoc County General Plan.*

Modoc County. 1993. *Modoc County General Plan- Energy Element.*

Moyle, Peter B. 2002. *Inland Fishes of California- Revised and Expanded.* University of California Press. Berkeley and Los Angeles, CA.

National Marine Fisheries Service. 2015. Email correspondence of no potential occurrence of anadromous species. Sacramento Office.

Natural Resources Conservation Service (NRCS). 2015. Soil Survey Geographic (SSURGO) GIS data of original soil survey maps.

Sawyer, J.O., T. Keeler-Wolfe, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press. Sacramento, CA.

South Coast Air Quality Management District. April 2011. *Chapter 6: The CEQA Guide.*

Sullivan, J. 1996. *Taxidea taxus*. Fire Effects Information System, Online. USDA, USFS, Rocky Mountain Research Station. http://www.fs.fed.us/database/feis/ [2015, September 25].

U.S. Census Bureau. 2015. State and County Quick Facts. Accessed online at: http://quickfacts.census.gov/qfd/states/06/06049.html

U.S. Department of the Interior. U.S. Geological Survey. 2007*. Logs and scarp data from a paleoseismic investigation of the Surprise Valley fault zone, Modoc County, California*: U.S. Geological Survey Scientific Investigations Map 2983, 2 sheets.

USFWS. 2015. Environmental Conservation Online System. Species profile for Swainson's hawk (Buteo swainsoni). http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070

U.S. Fish and Wildlife Service, 2006. *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marble Murrelets in Northwestern California.* U.S. Department of the Interior, Fish and Wildlife Service, Arcata, CA Office.

U.S. Forest Service. July 2009. *Climate Change Considerations in Project Level NEPA Analysis.*

U.S. Forest Service. 2008. *Characteristics of Western Juniper Encroachment into Sagebrush Communities in Central Oregon*. Forestry and Range Sciences Laboratory. La Grande, OR.

U.S. Geological Survey. 1966. *Geology of Northern California, Bulletin 190-Economic Mineral deposits of the Cascade Range, Modoc Plateau, and Great Basin Region of Northeastern California.* California Department of Conservation, California Geological Survey.

U.S. Geological Survey. 1976. U.S. Bureau of Mines. *Mineral Resources of the South Warner Wilderness, Modoc County, California. Geological Survey Bulletin 1385-D*. Washington, D.C.

Western Regional Climate Center. 2015. Monthly Climate Summary for Alturas, California. Period of Record: 4/1/1905 to 11/24/2014, http://www.wrcc.dri.edu/. Accessed June, 2015.

Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsoni*). The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Dept. of Fish and Game, Sacramento, California.

Appendix A. Preliminary Grading and Habitat Impacts

BSA / Existing Caltrans ROW

Preliminary Grading Extent

Avoided Steam Channels and Wetlands within BSA

Culverts

SR 299 Post Miles

Habitat Impacts

Juniper Woodland

Sagebrush Shrubland

Stream Channels and Wetlands

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map1

Preliminary Grading and Habitat Impacts

BSA / Existing Caltrans ROW

Preliminary Grading Extent

Avoided Steam Channels and Wetlands within BSA

Culverts

SR 299 Post Miles

Habitat Impacts

Juniper Woodland

Sagebrush Shrubland

Stream Channels and Wetlands

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 2

Preliminary Grading and Habitat Impacts

BSA / Existing Caltrans ROW

Preliminary Grading Extent

Avoided Steam Channels and Wetlands within BSA

Culverts

SR 299 Post Miles

Habitat Impacts

Juniper Woodland

Sagebrush Shrubland

Stream Channels and Wetlands

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 3

Preliminary Grading and Habitat Impacts

BSA / Existing Caltrans ROW

Preliminary Grading Extent

Avoided Steam Channels and Wetlands within BSA

Culverts

SR 299 Post Miles

Habitat Impacts

Juniper Woodland

Sagebrush Shrubland

Stream Channels and Wetlands

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 4

Preliminary Grading and Habitat Impacts

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 5

Preliminary Grading and Habitat Impacts

BSA / Existing Caltrans ROW

Preliminary Grading Extent

Avoided Steam Channels and Wetlands within BSA

Culverts

SR 299 Post Miles

Habitat Impacts

Juniper Woodland

Sagebrush Shrubland

Stream Channels and Wetlands

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 6

Preliminary Grading and Habitat Impacts

Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 7

Preliminary Grading and Habitat Impacts

BSA / Existing Caltrans ROW

Preliminary Grading Extent

Avoided Steam Channels and Wetlands within BSA

Culverts

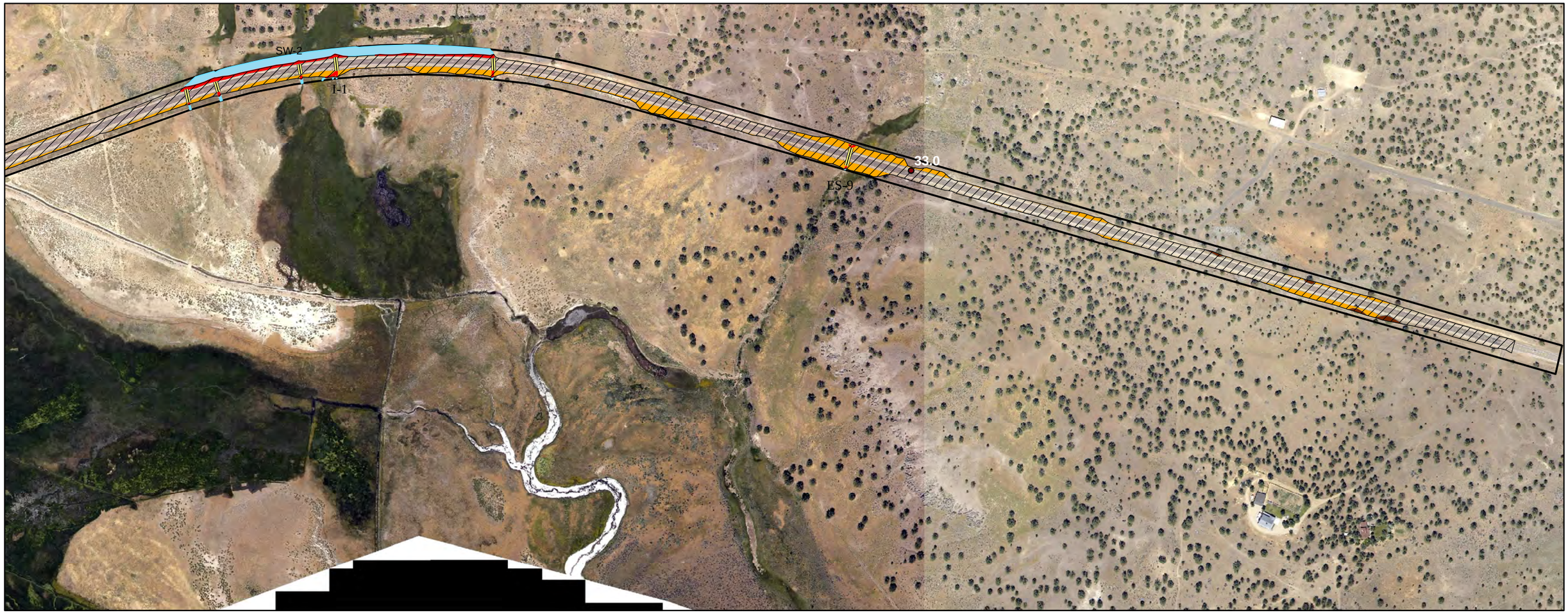
SR 299 Post Miles

Habitat Impacts

Juniper Woodland

Sagebrush Shrubland

Stream Channels and Wetlands



Caldwell Creek Rehabilitation Project
02-MOD-299-PM 24.5/33.5
02-4F770
02-1300-0031

N

400 Feet

Appendix A- Map 8

Preliminary Grading and Habitat Impacts