State Route 70
Corridor Improvements Project

BUTTE COUNTY, CALIFORNIA

District 3-BUT-70-PM 5.7/11.8

EA:03-3F280/E-FIS:0312000155

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment and Section 4(f) Evaluation

Public Draft

Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Caltrans

August 2018

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study/Environmental Assessment (IS/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Butte County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA). Butte County Association of Governments (BCAG) is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do:

- Please read this document.
- Additional copies of this document and the related technical studies, are available for review at Caltrans District 3, 703 B Street, Marysville, CA 95901 and the Butte County Association of Governments (BCAG) office, 326 Huss Drive, Chico, CA 95928. This document may be downloaded at the following website: http://www.bcag.org/Projects/State-Route-70-corridor/index.html. This document will also be available at the Oroville public library at 1820 Mitchell Avenue in Oroville.
- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
- Send comments via postal mail to:
  Rajpreet Bihala, Environmental Planner
  Department of Transportation, District 3
  703 B Street, Marysville, CA 95901
- Send comments via email to: Rajpreet.Bihala@dot.ca.gov.
- Be sure to send comments by the deadline: September 5, 2018.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the FHWA, may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Winder Bajwa, Project Manager, Department of Transportation, District 3 703 B Street; (530) 741-4181 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

FHWA Highway ID No.

SCH#_____
03-BUT-70-PM 5.7/11.8
03-3F280
0312000155

Widen State Route 70, from 0.3 miles north of Cox Lane (postmile 5.7),
to 0.3 miles north of Ophir Road (postmile 11.8)

Initial Study with Proposed Mitigated Negative Declaration/
Environmental Assessment and Section 4(f) Evaluation

Submitted Pursuant to: State Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C) "and 49 USC 303"

THE STATE OF CALIFORNIA
Department of Transportation

Cooperating Agencies: Butte County Association of Governments

8-3-18
Date of Approval

Suzanne Melim
Office Chief
California Department of Transportation
NEPA Lead Agency

8-3-18
Date of Approval

Andy Newsum
Deputy Director
Butte County Association of Governments
CEQA Lead Agency

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), in cooperation with the Butte County Association of Governments (BCAG), proposes to widen a 6.1-mile portion of State Route 70 (SR 70) from 0.3 miles north of Cox Lane (PM 5.7) to 0.3 miles north of Ophir Road (PM 11.8) in Butte County south of the city of Oroville. The State Route 70 Corridor Improvements Project (proposed project) would provide continuous passing opportunities between Marysville and Oroville, thereby increasing safety and decreasing travel times between those cities.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an MND for this project. This does not mean that Caltrans' decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

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 on community impacts (community character and cohesion, relocations and real property acquisition, coastal zone, Wild & Scenic Rivers, growth, farmlands/timberlands, environmental justice, hydrology and floodplain, and noise.

In addition, the proposed project would have less-than-significant effects to parks and recreational facilities, utilities/emergency services, traffic and transportation/pedestrian and bicycle facilities, cultural resources, visual resources, water quality and stormwater runoff, geology/soils/seismic/ topography, paleontology, hazardous waste/materials, air quality, and invasive plant species. Avoidance and minimization measures include:

REC-1: Minimize Harm to the Oroville Wildlife Area Property

Access to Oroville Wildlife Area from SR 70 will be maintained at all times and will be coordinated with CDFW. If access is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular and pedestrian access around the construction area or provide signs directing vehicles to the Pacific Heights Road access point. Pedestrian access around the construction zone will be maintained at all times.

In the event that any inadvertent damage occurs to the lands or entrance signs, the property will be restored to the condition that existed prior to the construction activities or better.

Caltrans' Division of Right of Way and Land Surveys will coordinate with CDFW to provide the compensation required under the Park Preservation Act.

TRA-1: Prepare a Traffic Control Plan

Caltrans, in cooperation with the Butte County Association of Governments, will prepare and implement a traffic control plan as part of the overall construction management plan. Contractor compliance with the traffic control plan will be required as part of the construction contracts and will be used throughout the course of project construction. The traffic control plan will include, but will not be limited to, the following elements:

- Advance notice will be provided to transit operators, emergency service providers, businesses, and residences of construction work, any anticipated delays, and temporary road closures.
- When traffic control measures occur, advance notice will be provided to local fire and police departments to ensure that alternate evacuation and emergency routes are designed to maintain response times.
- Vehicular access to driveways and private roads will be maintained to the extent possible and compensation will be afforded by Caltrans and BCAG for loss of access.
- Existing non-motorized access or detours and warning signs will be maintained at all times.
- Parked construction-related vehicles will not disrupt automobile, bicycle, or pedestrian traffic.
- Traffic controls will be used in the construction area if the normal traffic flow is affected by construction activities. Such controls may include flag persons wearing safety gear consistent with current codes of safe practices using a "Stop/Slow" paddle to control oncoming traffic.
- Traffic controls will be used at haul route crossings. Controls may include flag persons wearing safety gear consistent with current codes of safe practices using a "Stop/Slow" paddle to control oncoming traffic.
- Signs giving advance notice of upcoming construction activities will be posted at least 1 week in advance to that motorists, if they choose, can avoid traveling through the project area during these times.
- Construction warning signs will be posted in accordance with local standards or those set forth in the Manual on Uniform Traffic Control in advance of the construction area and at any intersection that provides access to the construction area.
- Written notification will be provided to contractors regarding appropriate routes to and from the construction site, plus the weight and speed limits on local roads used to access the construction site.

TRA-2: Provide Pedestrian and Bicycle Access during Construction

All detours or roadways that permit bicycle and pedestrian modes of travel will include provisions for pedestrian and bicycle access during construction. Bicycle or pedestrian detour routes may deviate from traffic detour routes where a more appropriate route is available.

AES-1: Avoid and Protect Trees in Staging Areas during Construction

Trees that are located within staging areas will be avoided and protected during construction. Tree protection zones for all trees will be the dripline radius plus 1 foot. The fencing will remain in place throughout the course of the project. Tree protection fencing must be a minimum 6-foot-tall chain link or substitute fencing. The location of the fencing will be indicated on the project design engineer's grading plans. The fencing will be erected before demolition, grading, or any other construction activity begins. Fencing should not be placed on private property without written authorization from property owners. The following activities are prohibited throughout the course of the project within the tree protection zone:

- Storage or parking of vehicles, building materials, refuse, or excavated soil material.
- Use, access, or parking of heavy equipment, such as backhoes, tractors, and other heavy vehicles and equipment.
- Dumping of poisonous chemicals or materials, or chemicals or materials with unknown properties that potentially could be deleterious to tree health, such as paint, petroleum products, concrete or stucco mix, or dirty water.
- The use of tree trunks for winch support, anchorage, power pole, sign post, or any other function.
- Drainage changes, grade changes, soil disturbance.

AES-2: Minimize Fugitive Light from Portable Sources Used for Construction

At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights will be operated at the lowest allowable wattage and height and will be raised to a height no greater than 20 feet. All lights will be screened and directed downward toward work activities and away from the night sky and highway users and highway neighbors, particularly residential areas, to the maximum extent possible. The number of nighttime lights used will be minimized to the greatest extent possible.

AES-3: Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix

The project proponent will require construction contractors to incorporate native grass and wildflower seed in standard seed mixes, which may be non-native, for erosion control measures that will be applied to all exposed slopes and within the medians. Wildflowers will provide seasonal visual interest to areas where trees and shrubs are removed and grasslands are disturbed. Only wildflower and grass species that are native will be incorporated into the seed mix, and under no circumstances will any invasive grass or wildflower plant species be used as any component in any erosion control measures. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. If not appropriate to the surrounding habitat, wildflowers should not be included in the seed mix.

AES-4: Replace or Relocate Site Features and Landscaping Affected by the Project

Where appropriate and to the degree possible, landscaping and related appurtenances, such as fencing, privacy walls, and other similar features, removed from private properties as a result of construction will be relocated, replaced, or restored in place and in kind to mitigate for visual impacts. In addition, to the degree possible, buildings and structures, such as residences, barns, sheds, and other similar features, removed from private properties as a result of construction will be relocated or rebuilt on the affected parcel to mitigate for visual impacts. If the site cannot accommodate this relocation or replacement, then Caltrans will compensate parcel owners for features that would be removed or damaged as a result of the project. Replacement would be of value at least equal to that of existing features. To determine compensation for trees, an arborist certified in appraising a tree for the value it adds to that property will be used to determine monetary compensation for tree removal. Similarly, a person(s) qualified in evaluating buildings, structures, and landscape features other than trees, such as fencing, privacy walls, or similar features, will be used to determine compensation values for the loss of those features at such locations. The County or its contractor will coordinate these appraisals. In the event that a parcel owner deems the appraised value unfair, the parcel owner may hire an independent appraisal at their own expense. Negotiations to settle upon a fair appraisal value can take place between the County or its contractor and the parcel owner in question. If a fair appraisal value cannot be agreed upon, then an independent mediator will be used to resolve negotiations in a manner that is fair to all parties involved. The results of the assessment of private-property tree and landscape features will be used to determine the budget needed to implement this avoidance and minimization measure and will be included in the costs to construct it as part of the project. Before final project acceptance (i.e., prior to final acceptance of design plans and specifications that will be released for construction contract advertisement and award), funding source(s) for replacement of these features will be in place.

AES-5: Apply Minimum Lighting Standards

All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using Illuminating Engineering Society's design guidelines and in compliance with International Dark-Sky Association–approved fixtures. All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, and the number of nighttime lights needed to light an area will be minimized. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing. LED lighting will avoid the use of BRWL lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the International Dark-Sky Association's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not

be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

CUL-1: Implement Plan to Address Discovery of Unanticipated Buried Cultural Resources or Human Remains

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Kendall Schinke, Caltrans District 3 Environmental Branch Manager, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

WQ-1: Implement a Storm Water Pollution Prevention Plan and Caltrans' Best Management Practices to Avoid and Minimize Potential Effects on Water Quality

Implementation of the SWPPP, Caltrans BMPs, and stormwater guidance measures will minimize the potential for construction-related surface water pollution and ensure that water quality will not be compromised during construction. Specific BMPs designed to minimize water quality effects from construction will be determined by the construction contractor in the SWPPP with Caltrans approval. All construction would conform to the NPDES General Construction Permit requirements to maintain water quality within the project area and vicinity; these requirements include stormwater and non-stormwater quality protection measures for all construction activities within the Caltrans right-of-way.

GEO-1: Minimize Impacts from Seismic Events

To minimize potential impacts from seismic events, the project will be constructed in accordance with all applicable Caltrans standards and regulations and will be designed for the maximum credible earthquake. All construction activities will adhere to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

GEO-2: Minimize Soil Instability

To minimize the potential for soil instability from shrink-swell potential, soils with high shrink-swell potential will be compacted at the highest moisture content possible and not be allowed to dry out prior to covering with other material.

GEO-3: Conduct Geotechnical Investigation

A geotechnical investigation is necessary to determine the engineering characteristics of native soil in undeveloped areas. Special treatments could be required to increase the suitability of native soils for highway construction, or imported material may be used. Imported soil for highway embankments will have a minimum R-value of 15 and have the appropriate environmental certifications to ensure contaminated soil is not used on site. Other treatments could include removal of loose and compressible material, placement of subgrade enhancement geotextile, or use of a cementitious binder.

PALEO-1: Prepare and Implement a Paleontological Mitigation Plan

1. A non-standard provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with paleontological salvage.
2. If paleontological resources are discovered during earth-moving activities, the construction crew will immediately cease work within a 60-foot radius of the find and notify the resident engineer. In the event paleontological resources are discovered, fossil specimens will be properly collected and sufficiently documented to be of scientific value.
3. The collection and treatment actions described in the PMP will occur during the grading and construction process and after recovery of specimens if fossils are found, including sampling for microfossils, conducting paleomagnetic analysis, identifying and preparing fossils, arranging for a repository, and preparing a final report.

PALEO-2: Comply with Caltrans Standard Specifications Section 14-7

For all excavations, contactors will be required to implement the provisions of Caltrans Standard Specifications Section 14-7, which include a work stoppage and appropriate follow-up if paleontological resources are encountered during project construction.

HAZ-1: Avoid and Minimize the Potential for Effects from Hazardous Waste or Materials during Project Construction

Contractors would be required to work under a health and safety plan and soil management plan. These plans would be prepared to address worker safety when working with potentially hazardous materials, including soils potentially containing aerially deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans would provide for identification of potential hazardous materials at the work site and for specific actions to avoid worker exposure.

HAZ-2: Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow/White Traffic Striping along Existing Roadways

As required by Caltrans' standard special provisions, the construction contractor will sample and test yellow/white traffic striping scheduled for removal to determine whether lead or chromium is present. The construction contractor will also implement a project specific lead compliance plan prepared by a Certified Industrial Hygienist (CIH) as required by Cal/OSHA.

All aspects of the project associated with removal, storage, transportation, and disposal will be in strict accordance with appropriate regulations of the California Health and Safety Code. The stripes

will be disposed of at a Class 1 disposal facility. These grindings (which consist of the roadway material and the yellow color traffic stripes) will be removed and disposed of in accordance with Standard Special Provision 36-4 (Residue Containing High Lead Concentration Paints) (http://www.dot.ca.gov/hq/env/haz/hw_sp.htm) which requires a Lead Compliance Plan.

The responsibility of implementing this measure will be outlined in the contract between Caltrans and the construction contractor. Implementing this measure will minimize potential effects from these hazardous materials.

HAZ-3: Perform Soil Testing and Dispose of Contaminated Soils Appropriately

To prevent exposure of workers and the public to contaminated soils, requirements as detailed in the DTSC Agreement will be followed. In addition, surface soils from potentially contaminated areas would be screened and contaminated soils disposed of appropriately. Soil excavated from the surface to a depth of 1 foot can be reused within Caltrans right of way if covered with at least one foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within Caltrans ROW, then the excavated soil should be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Therefore, screening of surface soils for residual chemical contamination will occur for any parcels to be acquired and if soils are to be moved off agricultural parcels, to non-agricultural parcels. Soils testing positive should be removed off site to a permitted treatment/disposal facility. This testing should be completed before construction activities.

HAZ-4: Develop a Lead Compliance Plan

The Contractor shall prepare a project-specific Lead Compliance Plan to minimize worker exposure to lead-impacted materials. The plan will include protocols for environmental and personal monitoring, requirements for person protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted materials. Screening of surface soils for lead contamination will occur for any parcels to be acquired before construction activities.

HAZ-5: Develop and Implement Plans to Address Worker Health and Safety

As necessary, and as required by Caltrans and federal and state regulations, plans such as a health and safety plan, BMPs, and/or an injury and illness prevention plan will be prepared and implemented to address worker safety when working with potentially hazardous materials, including potential TWW, lead or chromium in traffic stripes, ADL, and other construction-related materials within the right-of-way during any soil-disturbing activity.

If project components are removed that may contain TWW (e.g., sign posts, metal beam guardrail wood posts, and lagging on retaining walls), the contractor must prepare and submit a safety and health work practices plan for handling TWW approved by an American Board of Industrial Hygiene Certified Industrial Hygienist. TWW must be disposed of in an approved TWW facility. Construction workers who handle this material must be provided training that includes the following.

- All applicable requirements of Title 8 CCR;
- Procedures for identifying and segregating TWW;
- Safe handling practices;

- Requirements of Title 22 CCR, Division 4.5, Chapter 34; and
- Proper disposal methods.

AQ-1: Implement California Department of Transportation Standard Specification Section 14

To control the generation of construction-related PM10 emissions, the project proponent will follow Standard Specification Section 14, Environmental Stewardship, which addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience for the public; and damage or injury to any person or property as a result of any construction operation. Standard Specification Section 14-9.02 requires compliance with BCAQMD rules, regulations, ordinances, and statutes that apply to work performed under the contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code Section 11017 (Public Contract Code Section 10231). Standard Specification Section 14-9.03 addresses dust control and palliative requirements.

AQ-2: Implement Additional Control Measures for Construction Emissions of Fugitive Dust

Additional measures to control dust will be borrowed from BCAQMD's recommended list of dust control measures and implemented to the extent practicable when the measures have not already been incorporated and do not conflict with requirements of Caltrans' Standard Specifications, Special Provisions, the National Pollutant Discharge Elimination System permit, and the Biological Opinions, Clean Water Act Section 404 permit, Clean Water Act Section 401 Certification, and other permits issued for the proposed project. The following measures are taken from BCAQMD's (2014) *CEQA Handbook*.

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District-approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities.
- Exposed ground areas that will be reworked at dates greater than 1 month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with County regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

With the following mitigation measures incorporated, the proposed project would have less-than-significant effects to paleontological resources, natural communities, wetlands, sensitive plant species, sensitive animal species, and threatened and endangered species.

Mitigation Measure BIO-1: Compensate for the Permanent Loss of Valley Foothill Riparian

Caltrans will compensate for the permanent loss of valley foothill riparian at a minimum ratio of 1:1 (1 acre planted for every 1 acre permanently affected). Replacement plantings for valley foothill riparian may be planted onsite and/or at offsite locations. Caltrans will prepare a restoration plan, including a species list and number of each species, planting locations, and maintenance requirements. Plantings will consist of cuttings taken from local plants or plants grown from local material. Planted species for the mitigation plantings will be similar to those removed from the project area and will include native species, such as arroyo willow, narrowleaf willow, and Fremont's cottonwood, and other locally appropriate species. All plantings will be fitted with exclusion cages or other suitable protection from herbivory.

Plantings will be monitored as required in the project permits.

Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees

Caltrans will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel and will brief them on the need to avoid effects on listed, threatened, and candidate species and vernal pool habitat. The education program will include a brief review of the listed and candidate species with the potential to occur in the BSA (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the BSA in which the species may occur, as well as their legal status and protection. The program also will cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. This will include the steps to be taken if a listed or candidate species is found within the construction area (i.e., notifying the crew foreman, who will call a designated biologist). An environmental awareness handout that describes the candidate and listed species and the vernal pool habitat to be avoided during project construction and identifies all relevant permit conditions will be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.

Mitigation Measure BIO-3: Compensate for Loss of Wetlands

Caltrans will compensate for the permanent fill of waters of the United States/waters of the State (a direct impact associated with roadway construction) in seasonal wetland/seasonal swale and seasonal emergent wetland. The minimum wetland compensation ratio to ensure no net loss of wetland functions and values for seasonal wetland/seasonal swale and seasonal emergent wetland habitats will be 1:1 (1 acre of wetland habitat credit for every 1 acre of permanent impact). Final compensatory ratios will be determined during the permitting process. Caltrans will compensate for permanent loss of seasonal wetland/seasonal swale and seasonal emergent wetland through one or more of the following mitigation options:

- Purchase compensatory credits for the affected wetland habitat types at a USACE-approved mitigation bank, such as Sycamore Creek Conservation Bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.
- Pay into the Butte County In-Lieu Fee program, if it is in place at the time of project permitting.
- Temporarily disturbed wetlands will be returned to pre-construction condition following construction. Caltrans also will implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

Mitigation Measure BIO-4: Compensate for the Placement of Permanent Fill into Ephemeral Drainages

Caltrans will compensate for the permanent fill of other waters of the United States/waters of the State (a direct impact associated with roadway construction) in ephemeral drainages. The minimum ephemeral drainage compensation ratio will be 1:1 (1 acre of ephemeral drainage habitat credit for every 1 acre of permanent impact) to ensure no net loss of habitat functions and values. The final compensatory ratio will be determined during the permitting process. Caltrans will compensate for permanent loss of ephemeral drainage through one or more of the following mitigation options:

- Purchase compensatory credits at a USACE-approved mitigation bank. Mitigation banks with service areas for Butte County currently include Porter Ranch Mitigation Bank and Sycamore Creek Conservation Bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.
- Pay into the Butte County In-Lieu Fee program, if it is in place at the time of project permitting.

Temporarily disturbed ephemeral drainages will be returned to preconstruction condition following construction. All additional conditions and requirements of state and federal permits that will be obtained for the proposed project will also be implemented.

Mitigation Measure BIO-5: Conduct Floristic Surveys for Special-Status Plants during Appropriate Identification Periods and Implement Protective Measures as Feasible

Caltrans will retain a qualified botanist to survey the BSA to document the presence or absence of special-status plants before project construction. The botanist will conduct a floristic survey that follows the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field

surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the blooming period. To account for special-status plant identification periods, a field survey will be conducted prior to any project construction and in the months of April and June or July. The botanist will photograph and map locations of all special-status plants identified during the surveys, document the location and extent of the special-status plant population on a CNDDB Survey Form, and submit the completed Survey Form to the CNDDB.

Wherever feasible, avoidance and minimization measures will be implemented to reduce direct impacts on special-status plants found in or adjacent to the construction area by creating a 100-foot buffer around the plants and by installing and maintaining exclusion fencing, as described in the project BMPs. The buffer size may be reduced if site-specific conditions indicate that the hydrology where the plants are located would not be affected by construction and if CDFW or USFWS (for federally listed species) concur. BCAG will redesign or modify the proposed project wherever feasible in order to avoid indirect or direct effects on special-status plants identified within the project construction area during the surveys. Any special-status plants in the proposed staging areas will be avoided.

Mitigation Measure BIO-6: Compensate for Permanent Impacts on Special-Status Plants

If complete avoidance of special-status plants is not feasible, Caltrans will compensate for unavoidable permanent direct effects on special-status plants through protection of suitable habitat that is of equal or greater function than the impacted habitat at a 2:1 ratio (habitat preserved: habitat impacted), or as agreed upon through coordination with CDFW (for state-listed or CNPS-ranked species) or USFWS (for federally listed species). The final compensation acreage will be based on the results of the preconstruction surveys of the selected project alternative.

Suitable habitat for affected special-status plant species will be purchased within a conservation area, preserved, and managed in perpetuity. Detailed information will be provided to CDFW and USFWS, if necessary, on the location and quality of the preservation area, the feasibility of protecting and managing the area in perpetuity, and the responsible parties involved. Other pertinent information will also be provided, to be determined through future coordination with CDFW and USFWS, if necessary. Alternatively, credits for affected special-status plant species may be purchased at a mitigation bank, if available.

Mitigation Measure BIO-7: Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work

To avoid potential injury or mortality of western pond turtles, Caltrans will retain a qualified wildlife biologist to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. The biologist will survey the aquatic habitat and adjacent marsh and grassland habitat within the construction area. If in-water work does not start immediately, the biologist will return to the construction site immediately prior to the start of in-water work to conduct another preconstruction survey. The biologist will remain on site until initial in-water work is complete. If a turtle becomes trapped during initial in-water work, a biologist who is CDFW-approved to capture and relocate turtles during construction of the project, will relocate the individual to suitable aquatic habitat upstream or downstream of the construction area. For the remainder of construction, the CDFW-approved biologist will remain on-call in case a turtle is discovered. The construction crew will be instructed to notify the crew foreman who will contact the biologist if a turtle is found trapped within the construction area. Work in the area where the turtle

is trapped will stop until the biologist arrives and removes and relocates the turtle. The biologist will report their activities to Caltrans and the CDFW within 1 day of relocating any turtle.

Mitigation Measure BIO-8: Avoid and Minimize Potential Effects on Vernal Pool Branchiopods

The following steps will be taken to avoid or minimize potential effects on vernal pool branchiopods.

- Ground disturbance within 250 feet of suitable habitat will be avoided during the rainy season (approximately October 15 through May 15).
- Partial fill of vernal pools/vernal swales and seasonal wetlands/seasonal swales (i.e., permanent impacts) will only occur when vernal pools/vernal swales and seasonal wetlands/seasonal swales are completely dry.
- If requested by USFWS, the top 3-4 inches of soil in pools that would be destroyed or completely filled would be removed and stored in the project area until ready for placement in vernal pool habitat to be restored. The topsoil will be kept covered with tarps or other appropriate material until restored pools are ready to be inoculated. Orange construction barrier fencing will be installed around the covered topsoil. The biological monitor will be onsite to monitor the removal of the topsoil and will check to make sure that the soil is properly covered during periodic monitoring visits to the project site. When restored pools are completed, the stored topsoil would be spread over the bottom of restored pools prior to the start of the winter rainy season.

Mitigation Measure 9: Compensate for Loss of Vernal Pool Branchiopod Habitat

Compensatory mitigation for direct and indirect effects on habitat for vernal pool branchiopods will be mitigated through the purchase of mitigation credits at a USFWS-approved conservation bank. Habitat that is directly or indirectly impacted will be mitigated by preserving habitat at a 2:1 ratio (habitat preserved: habitat impacted) and creating habitat at a 1:1 ratio (habitat created: habitat impacted) at the USFWS-approved mitigation bank. Table 2.3.5-5 summarizes acreages of compensation required by alternative for direct and indirect effects on vernal pool branchiopod habitat.

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Contents

Tables

Figures

Except where indicated, figures follow the chapter/section in which they are referenced.

Acronyms and Abbreviations

2012 Staff Report	CDFW's 2012 Staff Report on Burrowing Owl Mitigation
95% UCL	95% upper confidence limit
AADT	Annual Average Daily Traffic
AB 1493	Assembly Bill 1493
AB 32	Assembly Bill 32
ADA	1990 Americans with Disabilities Act
ADL	aerially deposited lead
ALUCP	Airport Land Use Compatibility Plan
AMSL	above mean sea level
APE	Area of Potential Effects
APNs	assessor parcel numbers
APS	Advance Planning Study
ARB	California Air Resources Board
ASR	Archaeological Survey Report
BAU	business-as-usual
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
BMPs	best management practices
BRCP	Butte County Regional Conservation Plan
BRWL	blue-rich white light lamps
BSA	biological study area
Cal/EPA	California Environmental Protection Agency
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CAZs	Conservation Acquisition Zones
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDP	Census Designated Place
CEHC	California Essential Habitat Connectivity
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CIH	Certified Industrial Hygienist
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide

CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CO-CAT	Coastal Ocean Climate Action Team
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CTP	California Transportation Plan
CWA	Clean Water Act
dBA	A-weighted decibels
difluoroethane	HFC-152a
DP-30	Caltrans Director's Policy 30
DPM	diesel particulate matter
DSA	Disturbed Soil Area
DTSC Agreement	Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils
ECAs	Essential Connectivity Areas
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRMs	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Plan
FTIPs	Federal Transportation Improvement Programs
GHG	greenhouse gas
Guidelines	Section 404(b)(1) Guidelines
H_2S	hydrogen sulfide
HDM	*Highway Design Manual*
HFC-134a	1, 1, 1, 2-tetrafluoroethane
HPSR	Historical Properties Survey Report
HRER	Historical Resources Evaluation Report
ICRG	Interagency Consultation Review Group
IIP	Interregional Improvement Program
IPCC	Intergovernmental Panel on Climate Change
IRRS	Interregional Road System
ITS	Intelligent Transportation Systems
ITSP	Interregional Transportation Strategic Plan

LEDPA	least environmentally damaging practicable alternative
$L_{eq}(h)$	hourly equivalent sound level
LOS	level of service
mg/kg	milligrams per kilograms
mg/l	milligrams per liter
MLD	Most Likely Descendent
mph	miles per hour
MPO	Metropolitan Planning Organization
MRZ	mineral resource zone
MS4s	municipal separate storm sewer systems
MSATs	Mobile source air toxics
MTP	Metropolitan Transportation Plan
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NAHC	Native American Heritage Commission
NEIC	Northeast Information Center
NEPA	National Environmental Policy Act
NEPA Assignment MOU	Memorandum of Understanding pursuant to 23 USC 327
NES	*Draft Natural Environment Study*
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries Service	National Oceanic and Atmospheric Administration's National Marine Fisheries Service
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OHWM	ordinary high water mark
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Act
OSTP	Office of Science and Technology Policy
PA	Programmatic Agreement
Pb	lead
PEAR	preliminary environmental analysis report
PER	Paleontological Evaluation Report
Pilot Program	Surface Transportation Project Delivery Pilot Program

PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
PMP	Paleontological Mitigation Plan
POAQCs	Projects of Air Quality Concern
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PRC	Public Resources Code
proposed project	State Route 70 Corridor Improvements Project
Q100	100-year flood
Q50	50-year flood
RAP	Relocation Assistance Program
RCEM	Road Construction Emissions Model
RCRA	Resource Conservation and Recovery Act of 1976
Resources Agency	California Natural Resources Agency
RIP	Regional Improvement Program
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RTPs	Regional Transportation Plans
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SB 375	Senate Bill 375
SB 391	Senate Bill 391
SB 97	Senate Bill 97
SCS	Sustainable Communities Strategy
SDC	Seismic Design Criteria
SF_6	sulfur hexafluoride
SHOPP	State Highway Operation and Protection Program
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SR	State Route
SR 70	State Route 70
STIP	State Transportation Improvement Program
STLC	Soluble Threshold Limit Concentration
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE's	Temporary Construction Easements
TCR	Transportation Corridor Concept Report

TMDLs	Total Maximum Daily Loads
TOR	Traffic Operations Report
TPZ	timber production zones
TSAS	Traffic Accident Surveillance and Analysis System
TSCA	Toxic Substances Control Act
TSN	Transportation Systems Network
TTLC	Total Threshold Limit Concentration
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VIA	*Visual Impact Assessment*
VMT	vehicle miles traveled
WDRs	Waste Discharge Requirements
WET	Soluble Waste Extraction Test
WPCP	Water Pollution Control Plan
WSE50	50-year floodwater surface elevation
Yuba-Sutter NCCP/HCP	Yuba-Sutter Natural Communities Conservation Plan/ Habitat Conservation Plan

Chapter 1
Proposed Project

1.1 NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 United States Code (USC) 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with the Federal Highway Administration (FHWA). The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016 for a term of five years. In summary, the Department continues to assume FHWA responsibilities under the National Environmental Policy Act (NEPA) and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the U.S. Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

1.2 Introduction

The California Department of Transportation (Caltrans), in cooperation with the Butte County Association of Governments (BCAG), proposes to widen a 6.1-mile portion of State Route 70 (SR 70) in Butte County south of the city of Oroville. The State Route 70 Corridor Improvements Project (proposed project) would provide continuous passing opportunities between Marysville and Oroville, thereby increasing safety and decreasing travel times between those cities.

The proposed project is subject to state and federal environmental review requirements because of the proposed use of federal funds from FHWA. Accordingly, project documentation is being prepared in compliance with NEPA and the California Environmental Quality Act (CEQA). Caltrans is the lead agency under NEPA and BCAG is the lead agency under CEQA. The proposed project is included in the BCAG 2012 Metropolitan Transportation Plan/Sustainable Communities Strategy and the 2015 cost-constrained Federal Transportation Improvement Plan (FTIP), Amendment 7. The proposed project is also referenced in BCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy, adopted in December 2016.

SR70 was originally comprised of Route 232, Route 87, and Route 21. The segment between Marysville and Oroville (Route 87) was added to the State Highway System in 1933. SR70, in its entirety, was adopted into the Freeway and Expressway System in 1959.

SR 70 is one of two primary north-south transportation corridors through Yuba and Butte Counties. Along with SR 99, it provides a link between the major population centers in Sacramento, northern

Placer County, Yuba City, Marysville, and Oroville. SR 70 is a 4-lane facility between the SR 99 and SR 65 junctions south of Marysville, and between Ophir Road and the SR 149 junction north of Oroville.

The concept for a new expressway or freeway alignment east of SR 70 has been previously studied. However, this concept has no funding and is not a viable project in the foreseeable future. The 2014 Transportation Corridor Concept Report (TCR) has identified widening this segment of SR 70 to 4-lanes to reflect the concept facility proposed in the PSR (PDS) in 2014.

SR 70 is identified as 1 of 34 High Emphasis Routes that are of particular importance from a statewide perspective. As a subset of High Emphasis Routes, SR 70 is further designated as 1 of 10 Focus Routes in California. A Focus Route designation represents the Interregional Road System (IRRS) corridors that are of the highest priority to be upgraded to freeway or expressway standard during the 20-year planning horizon of the Interregional Transportation Strategic Plan (ITSP). Focus Routes serve as a grid network of north-south and east-west state highways that connect all of California's major urban areas and regions. The ITSP identifies specific projects, such as this project, which are necessary to bring the Focus Route up to concept standard.

1.2.1 Project Funding and Cost

For funding purposes, the project has been separated into two segments. Segment 1 is from 0.16 miles south of Palermo Road (PM 8.84) to 0.3 miles north of Ophir Road. Segment 2 is from 0.3 miles north of Cox Lane to 0.16 miles south of Palermo Road. Both segments of will be improved to a conventional 4-lane highway with a 14-foot paved median with left turn lanes. SR 70 is one of two primary north-south transportation corridors through Butte County and provides a link between the major population centers in Sacramento, northern Placer County, Marysville, and Oroville. SR 70 is one of 34 High Emphasis Routes that are of importance from a statewide perspective. Project funding is expected to come from state and federal funds. This project is being combined with a State SHOPP project, which proposes widening SR 70 to include a 14-foot center median and standard shoulders. The project will be combined with two State Highway Operation and Protection Program (SHOPP) projects (EA 3H720 and 3H721) at Ready to List. The SHOPP project description includes widening for a two-way left turn lane and standard shoulders, and providing roadway clear recovery zone.

It has been determined this project is eligible for Federal-aid funding. According to the BCAG 2012 Metropolitan Transportation Plan (MTP) Segments 1 & 2 will be funded by both the Regional Improvement Program (RIP) and the Interregional Improvement Program (IIP) funds of the State Transportation Improvement Program (STIP) fund split equally amongst the two funding sources. The Sacramento Area Council of Governments (SACOG) 2035 Metropolitan Transportation Plan/Sustainable Communities Strategy has the SR 70 improvements included in their list of projects with $30 million in 2010 dollars inflated to $37.46 million with the project being completed by 2035.

The Segment 1 preliminary cost estimate is $49,300,000 for current total project cost and $52,700,000 for escalated total project cost. The Segment 2 costs vary as follows for the three different alternatives: $35,450,000 for current total project cost and $38,400,000 for escalated total project cost for Alternative 1; $38,450,000 for current total project cost and $41,750,000 for escalated total project cost for Alternative 2; and $39,800,000 for current total project cost and $42,500,000 for escalated total project cost for Alternative 3. These cost differences are mostly due to the alignment configurations and variations in the earthwork and pavement quantities.

1.3 Purpose and Need

1.3.1 Project Purpose

The purpose of the proposed project is to address safety concerns along the corridor, and provide continuous passing opportunities between Marysville and Oroville. The project will also provide additional capacity that will support approved and planned development in Butte County, and will support the growing economic sectors along the SR70 Corridor. Improved travel times along the corridor will result in greater reliability and efficiencies for goods movements, provide better connectivity between Butte County and the Sacramento Valley, and will support the overall economic viability of the Butte County region. The project will improve traffic operations and safety in these segments of the highway.

An improved facility will decrease travel times between Oroville and Marysville, and provide greater reliability for regional and local users. Improved reliability along SR 70 will improve the connectivity between Butte County and greater Sacramento Valley, and support the growing economic sectors in Oroville and the surrounding areas. This project will help sustain the economic growth in Oroville and will improve the overall economic viability of the Butte County region.

1.3.2 Project Need

The project is needed because there are operational and safety concerns along the corridor. The existing condition of SR 70 does not provide formal passing opportunities for a majority of the corridor, which results in operational and safety issues. Portions of the corridor show higher than average accident rates, and higher accident densities have been observed at major intersections. A majority of the accidents can be attributed to the lack of passing lanes throughout the 24-mile corridor. Although the highway is currently operating at an acceptable Level of Service; forecasted population growth and development along the corridor (based on local general plans) is anticipated to increase traffic levels, which will further degrade the operations and safety along SR70.

The tables below summarize traffic collision data on SR 70 through the limits of the proposed project. The data was obtained from the Traffic Accident Surveillance and Analysis System (TASAS)–Transportation Systems Network (TSN) database maintained by Caltrans. The data shown is for the three-year period between July 1, 2012 and June 30, 2015.

Table 1-1. Butte County/State Route 70/PM 5.6-11.8

Dates: 07/01/2012 to 06/30/2015		Actual Rates (Collisions/million vehicles)			Average Rates (Collisions/million vehicles)		
Location (Post Miles)	Total Collisions	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
SR 70 (PM 5.6 – 8.8)	21	**0.053**	0.29	0.56	0.018	0.35	0.83
SR 70 (PM 8.8 – 11.8)	29	**0.049**	0.27	**0.71**	0.008	0.27	0.65

Note: Bold and underline font indicate actual accident rates that are higher than the statewide average for similar facilities.

Table 1-2. Butte County/State Route 70/PM 5.6-11.8

	Type of Collision							
Primary Collision Factor	Head On	Sideswipe	Rear End	Broadside	Hit Object	Over Turn	Other	Not Stated
Influence of Alcohol		2	3		2			
Failure to Yield		2		3				
Improper Turn	1	1		1	5	2		
Speeding			15	1			1	
Other Violation	2	1		3				
Other than Driver	1				1		2	1
Total	4	6	18	8	8	2	3	1

Rear end collision accounted for 18 of the 50 accidents on the SR 70 corridor. Most rear end collisions are due to speeding. The next most frequent are sideswipe collision followed hit object collisions. Out of the 50 accidents, there was 35 multi car collisions, 18 injuries and 4 fatalities. The Ophir Road signalized intersection is associated with a high number of sideswipe, rear end, and broadside collisions. The accident rates for the SR 70 study locations show a higher than state wide average for the severity (i.e. fatality rate) and combination of severity plus injured (i.e. fatal + injured) are approaching the state average for a 2-lane freeway facility in the State of California.

The need for highway improvements along this segment of SR 70 has been known for several years, and numerous studies have been prepared to address that need. These studies include the *State Routes 70 and 99 Corridor Study (1990),* the *State Routes 70 and 99 Major Investment Study (1995),* the *Marysville By-pass Value Analysis Study (2001),* and the *Marysville By-pass to Oroville Freeway Project (PSR – 1993).* Several alternatives have been considered through the course of these studies, including highway widening, highway realignment, and new freeway construction.

While the various studies mentioned above considered various ways to improve SR 70 between Marysville and Oroville, the generally accepted vision was to construct a 4-lane "Marysville By-Pass to Oroville Freeway" beginning at the SR65/SR70 split and extending to the southern limit of Oroville. This freeway was to provide regional connectivity between Sacramento, Marysville, Oroville, and Chico. Due to lack of funding and significant environmental impacts, the proposed by-pass and freeway was determined to be unviable and was not carried forward into the final stages of project development.

The growth in traffic volume along the SR 70 corridor is predominately influenced by the assumed growth within Butte County and Yuba County. According to BCAG, population and employment is expected to increase in Butte County by 50 and 57 percent, respectively, between 2010 and 2035. Specifically, the Rio d' Oro Specific Plan, located in the southwest of Oroville and adjacent to SR 70, is expected to generate a significant number of daily trips that will trigger unacceptable traffic conditions.

An additional project need is based upon economics and goods movements along the corridor. The largest industries in the Oroville area are "highway dependent," and require reliable access to and from SR70. It has been observed that goods movements within the regional and local supply chain can be heavily affected by the highway conditions. Improved reliability of the SR70 corridor is needed to prevent lost revenues of local industries due to accidents or operational deficiencies.

Furthermore, improved travel times are needed to improve regional connectivity and the overall economic viability of the Butte County region.

1.4 Project Location

The proposed project is located within Butte County on State Route 70 (SR 70) from 0.3 miles north of Cox Lane (PM 5.7) to 0.3 miles north of Ophir Road (PM 11.8) (Figure 1-1). This segment of SR 70 is a 2-lane rural highway. SR 70 is a conventional highway from the southerly limit to Palermo Road, and is an access controlled expressway from Palermo Road to the northerly project limit. North of the project, SR 70 converts to a 4-lane freeway.

1.5 Project Description

SR 70 serves both regional and local traffic, and connects Butte County to the greater Sacramento Valley. In general, the highway is 2-lanes with left turn pockets provided for public roads. All existing intersections are at-grade and are generally side-street stop controlled. Ophir Road is the only signalized intersection.

The project will widen SR 70 from two lanes to four lanes with a paved center median for approximately 6.1 miles. In Segment 1, no uncontrolled left turn will be allowed. In Segment 2, the median will serve as a two-way-left-turn lane. SR 70 is owned and maintained by Caltrans, and the improvements to the highway are required to comply with the Caltrans Highway Design Manual (HDM).

Several driveways exist along the highway, which serve residential, industrial and agricultural properties. A majority of the land use along this segment of SR 70 consists of agricultural uses. Dingerville USA is a small golf course located just north of Palermo Road, and represents the only recreational use along the corridor. The project currently doesn't fall within any incorporated Cities. However, Oroville has plans to annex in the area between Ophir Road and Palermo Road.

The existing condition of SR 70 does not provide formal passing opportunities for a majority of the corridor, which results in operational and safety issues. Caltrans recently completed construction of a project near the intersection of East Gridley Road that provides passing lanes in both directions within the limits of that project. (PM 3.8 to 5.7) Two-way left turn lanes are provided for approximately 3,000-feet south of Palermo Road.

The terrain within the project limits is very flat, and portions of the project fall within the 100-year floodplain. Drainage from the highway sheet flows into adjacent properties, or is collected in roadside toe-gutters. Run-off collected in toe-gutters is not discharged into any water body. SR 70 only crosses one water way, at Oak Knob Draw.

The project is adjacent to the driveway access for the Oroville Wildlife Preservation area, and is the only Section 4(f) property located within the project.

1.5.1 Logical Termini and Independent Utility

Federal Highway Administration regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
- Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Consideration of the concepts of logical termini and independent utility avoid segmenting of projects and unevaluated impacts on resources. Segmenting of a project occurs when the transportation need extends past the study boundaries, requiring additional improvements which may result in impacts that are not addressed in the environmental analysis.

The project alternatives will function and address the purpose and need even without additional improvements, therefore the project has independent utility. The project also connects logical termini, in that the area studied encompasses a broad enough area to fully address environmental issues.

1.5.2 Build Alternatives

Three build alternatives are proposed, all of which widen SR 70 from two to four lanes (Figure 1-2).

1.5.2.1 No-Build Alternative

This alternative would maintain the existing lane configurations and no work would be provided to improve operational conditions within the project limits.

1.5.2.2 Alternative 1

This alternative retains the easterly edge of pavement in its current location and widens to the west. New pavement construction would occur primarily on the west side of the existing lanes, and therefore, a majority of environmental and right of way impacts would occur on this side. Within segment 2, the roadside will be regraded to provide the standard hinge points, side slopes and clear recovery areas. Therefore, right of way acquisitions would be required on both sides of SR 70. In Segment 1, the existing slope conditions on the east side will be retained.

1.5.2.3 Alternative 2

This alternative retains the westerly edge of pavement and widens to the east. New pavement construction would occur primarily on the east side of the existing lanes, and therefore, a majority of environmental and right of way impacts would occur on this side. Within segment 2, the roadside will be regraded to provide the standard hinge points, side slopes and clear recovery areas. Therefore, right of way acquisitions would be required on both sides of SR 70.

1.5.2.4 Alternative 3

This alternative widens symmetrically on both sides of SR 70. Right of way and environmental impacts would be similar along both sides. The roadsides will be regraded to provide the standard hinge points, side slopes and clear recovery areas.

1.5.3 Common Design Features of the Build Alternatives

1.5.3.1 Segment 1 Widening

Within Segment 1 (Palermo Road to northerly terminus), the project will maintain the easterly lanes and widen to the west. The project would widen the existing highway from 2-lanes to 4-lanes with a 22-foot paved median. Existing pavement will be overlaid to correct the crown and a new pavement section will be constructed for the southbound lanes. The proposed widening will generally stay within the existing right of way. Walls are proposed on areas where cut/fill extend beyond the existing right-of-way lines, and where environmentally sensitive areas are to be avoided.

The existing condition within Segment 1 lends itself to westerly widening (as described under "Alternative 1" above). The existing 2-lane highway was constructed with a constant 2% cross-slope (sloping east) indicating that it was set up in advance for future widening to the west. Furthermore, the right of way within Segment 1 is asymmetrical to the existing highway, and more right of way is available on the west side. With this in mind, the project team has agreed to use the westerly widening strategy within this segment. Easterly widening and symmetrical widening as described in Alternatives 2 and 3 respectively are not being considered for use with Segment 1.

The geometric cross-section will be designed to Freeway/Expressway Standards, and will include four 12-foot lanes, 10-foot outside shoulders, and a 22-foot paved median. The side slopes will be 6:1 or flatter where feasible, and 4:1 or flatter where right of way acquisitions need to be minimized. Before the Ophir Road/Pacific Heights Road intersection, the highway will be widened into a hill where 2:1 cut slopes will be used to accommodate the wider highway cross-sectional geometrics. A retaining wall is proposed at this location to minimize excavation and eliminate Right of Way acquisitions.

New right of way within Segment 1 will be access controlled. Existing access breaks will be perpetuated.

1.5.3.2 Ophir Road Intersection

The skew angle for Ophir Road/Pacific Heights Road and Route 70 is 75 degrees. The westerly frontage road intersection will be realigned 745-feet from the center of SR 70. Two reversing curves with a 194.41-foot tangent between them will allow Pacific Heights Road to conform back to the existing westbound road. The Pacific Heights Road frontage realignment allows for California-legal truck movements and improves stopping sight distance by increasing distance between the intersections. The frontage road will conform to the existing alignment 1615.46-feet from the center of the Pacific Height Road intersection. On the frontage road realignment, the driveway access for business Franklin Construction, Inc. will be realigned to meet the frontage road with a 90 degree intersection which is an improvement from the original intersection skew.

1.5.3.3 Segment 2 Widening

Segment 2 will be designed to Conventional Highway Standards, and will include four 12-foot lanes, 10-foot outside shoulders, and a 14-foot paved median/ two-way left turn lane.

The project would maintain existing two-way-left-turn lanes present in the high driveway density areas. Driveway access points would be eliminated or consolidated where feasible to reduce the number of conflict points. The number of driveways that may be eliminated will not be known until the right of way phase is underway.

The project will conform to the previous project completed by Caltrans District 3, East Gridley project. Segment 2 will conform at PM 5.67. The proposed project will conform to the existing pavement, which is on a 2500-foot radius horizontal curve that has a 5% superelevation. The twelve-foot width median cross-section geometrics will be carried through the curve at the beginning of segment 2 ending at the end of the horizontal curve.

The horizontal curve at the start of Segment 2 is designed to meet the 75 MPH design speed, per Caltrans standards.

1.5.3.4 Public Road Intersections

Public roads will be reestablished to meet the HDM geometric standards for intersections. The following intersections are proposed to be reestablished to conform to the final SR 70 corridor:

- Julie Ann Court located at station PM 6.9
- Power House Hill Road located at station PM 7.7
- Oakwood Lane located at station PM 8.5
- Grover Lane located at station PM 8.7

Power House Hill Road intersection improvements will add acceleration lanes to the northbound and southbound SR 70 directions. The northbound acceleration lane will be a twelve-foot, 350-foot long, lane with a 900-foot lane taper. The southbound acceleration lane will be a fourteen-foot, 300-foot long, lane with a 1050-foot lane taper.

Segment 2 ends and Segment 1 begins at station 397+00.00, approximately 800-feet south of the Palermo Road/Welsh Road intersection. This intersection will meet the California legal truck turning radii. On Palermo Road, the single westbound lane would be widened to two westbound lanes and conform 462-feet from the center of SR 70. This improvement will provide a dedicated westbound left-turn lane. On Welsh Road, the single eastbound lane would be widened to two eastbound lanes and conform 561.08-feet from the center of SR 70. This improvement will provide a dedicated eastbound left-turn lane. The frontage road intersection at Welsh Road and Pacific Heights Road will be relocated to meet the HDM stopping sight distance between SR 70 and Pacific Heights Roads. This realignment will also incorporate turn radii that will accommodate for California legal truck turning radius standards. The frontage road realignment will conform 1027.47’ from the center of Welsh Road. The Pacific Height Road frontage has two reversing curves with a tangent between them.

1.5.3.5 Structure/Box Culvert Design

The project corridor includes a bridge crossing of Oak Knob Draw (Bridge Number BR-12-61) north of Power House Hill Road and South of Oakwood Lane. Bridge BR-12-61 is a single span concrete box culvert bridge that is approximately 20-feet long and 44-feet wide. The project will lengthen the culvert to match the widened highway. This work will require an extension of the existing culvert only, so an Advance Planning Study (APS) will not be required.

Existing box culverts will need to be extended at various locations to accommodate the proposed widening along the corridor. The box culverts to be extended include:

- Double 5'x3' RCB between Cox Lane and La Fever Lane (Sta 240+20)
- Double 6'x3' RCB between Cox Lane and La Fever Lane (Sta 254+80)
- Double 9'x4' RCB between Power House Hill Road and Oakwood Lane (Sta 367+85)

1.5.3.6 Utilities

The project will require relocation of various utilities such as sewer, electrical, communications, and telephone along the proposed project. Overhead electric facilities along SR 70 may need to be relocated to accommodate the proposed widening improvements. A sewer line crosses Route 70 north of Ophir Road and will need to be relocated or protected on the east frontage road portion.

The following utility companies have facilities within the right of way that may need to be relocated due to the proposed project:

- Pacific Gas & Electric
- Comcast – Cable Television
- AT&T
- Sewerage Commission-Oroville Region (SC-OR)
- South Feather Water and Power

Within Segment 2, existing utility pole encroachments will be relocated within the proposed right of way. Segment 1 has utilities that would have to be relocated outside of the new State right of way as the new classification of the corridor will be an expressway. Underground utilities along the frontage roads will be relocated to the realigned frontage roads. The existing frontage road would require right of way acquisition to provide adequate utility corridor for overhead utilities.

1.5.3.7 Hazardous Materials

An Environmental Site Assessment has been prepared, and there were no properties found with the potential for hazardous materials on site. The project has the potential for aerially deposited lead (ADL) to be present along the shoulders.

1.5.3.8 Right-of-Way

The project will require sliver right-of-way acquisitions from the properties fronting SR 70. The number of properties requiring acquisition and the magnitude of the acquisition will depend on the widening alternative selected. In addition to the right-of-way, Temporary Construction Easements (TCE's) will be required.

1.5.4 Construction Information

1.5.4.1 Extent of Ground-Disturbing Activities

The excavation activities will include grading for pavement and side slopes, placement of culverts, and placement of relocated utilities. Generally, the excavation will range from 2 to 4 feet in depth. Just south of Palermo Road, a cut slope is needed to widen SR 70 into the existing hillside and construct a retaining wall. The maximum depth of excavation anticipated at this location is 20 feet.

1.5.4.2 Equipment Storage/Vehicle Storage/Staging Areas

No specific arrangements or agreements have been made with adjacent land owners regarding the use of private properties for staging areas. However, there are several locations along the corridor that may serve as potential staging areas. These areas are included in the project area and may be temporarily disturbed.

1.5.4.3 Traffic Handling and Night Work

All three widening alternatives can be staged to provide one lane of travel in each direction at all times. Generally, the work will be completed in three phases: 1) Construct new pavement; 2) Shift traffic to new pavement and overlay the existing pavement; 3) Place final lift across entire highway. It is anticipate that some night work will be required. If highway closures are required, available detour routes are available along Cox Lane, Palermo Road, Pacific Heights Road, Power House Hill Road, Ophir Road, Georgia Pacific Way and Feather River Road. SR 162 could also provide a detour route to and from SR 99.

1.5.4.4 Construction Schedule

BCAG and Caltrans are in the process of programming funding for segments 1 & 2. The project segments would be constructed consecutively with construction of Segment 1 starting in the spring of 2019 and construction of Segment 2 starting in the spring of 2021. Construction of each segment would take approximately 18 months.

1.5.5 Alternatives and Design Options Considered but Withdrawn

1.5.5.1 Widens Westerly Holding Easterly Right of Way Alternative

This alternative retains the existing right of way and widens the proposed geometric configuration to the east side of the existing right of way. This alternative would not utilize the existing highway pavement and would result in higher project costs.

This alternative was reviewed and rejected because of the unbalanced right of way impacts to one side of SR 70.

1.5.5.2 Widens Easterly Holding Westerly Right of Way Alternative

This alternative retains the existing right of way and widens the proposed geometric configuration to the west side of the existing right of way. This alternative would not utilize the existing highway pavement and would result in higher project costs.

This alternative was reviewed and rejected because of the unbalanced right of way impacts to one side of SR 70.

1.5.5.3 Freeway By-Pass Alternative

This alternative would propose a 4-lane by-pass from Marysville to Oroville to provide regional connectivity.

This alternative was reviewed and rejected due to the lack of funding, and significant new environmental impacts. Because it would involve a new right-of-way, the environmental impacts will be greater than the proposed project and this alternative would not substantially reduce any significant impacts of the proposed project.

1.6 Best Management Practices

The following best management practices (BMPs) would be implemented as part of the proposed project and are common to all alternatives.

Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources

Caltrans and/or their contractor will install orange construction fencing between the construction area and adjacent sensitive biological resource areas. Sensitive biological resources that occur adjacent to the construction area that could be directly affected by the project include natural communities of special concern; vernal pool branchiopods, valley elderberry longhorn beetle, western spadefoot, and western pond turtle habitats; nest sites of northern harrier, Swainson's hawk, white-tailed kite, western burrowing owl, loggerhead shrike, tricolored blackbird, and other migratory birds; roosting bats; and protected trees to be avoided.

Barrier fencing around sensitive areas will be installed as one of the first orders of work and prior to equipment staging. Before construction begins, the construction contractor will work with the project engineer and a resource specialist to identify the locations for the orange construction fencing, and will place stakes around the sensitive resource sites to indicate these locations. The protected areas will be designated as environmentally sensitive areas and clearly identified on the construction plans and described in the specifications. To minimize the potential for snakes and other ground-dwelling animals from being caught in the orange construction fencing, the fencing will be placed with at least a 1-foot gap between the ground and the bottom of the orange construction fencing. Orange construction fencing will be installed before construction activities are initiated, maintained throughout the construction period, and removed after completion of construction.

Avoid and Minimize Potential Disturbance of Woody Vegetation

Caltrans will require the contractor to minimize the potential for long-term loss of woody vegetation by trimming vegetation rather than removing entire trees or shrubs in areas where complete removal is not required. Trees or shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone.

Remove Vegetation during the Nonbreeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds

To the maximum extent feasible, vegetation removal (including grassland or ruderal vegetation) will occur during the non-breeding season for most migratory birds (generally between October 1 and January 31). This timing is highly preferred because if an active nest is found in a tree (or other vegetation) to be removed during preconstruction nest surveys (described below), the tree cannot be removed until the end of the nesting season, which could delay construction. If trees cannot be removed between October 1 and January 31, the area where vegetation will be removed must be surveyed for nesting birds, as discussed below.

If construction activities are expected to begin during the nesting season for birds (generally February 1 through September 30), Caltrans will retain a qualified wildlife biologist with knowledge of the relevant species to conduct a nesting survey before the start of construction. The survey will be conducted prior to construction and during the nesting season (from February 1 to September 30). The surveys will include a search of grassland and ruderal vegetation, and all trees and shrubs that provide suitable nesting habitat in the project area. In addition, a 500-foot area around the project area will be surveyed for nesting raptors. If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 30) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with USFWS and CDFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

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

Caltrans will require its contractor to avoid and minimize the introduction of new invasive plants and the spread of invasive plants previously documented in the BSA. Two or more of the BMPs listed below will be written into the construction specifications and implemented during project construction.

- Retain all fill material onsite to prevent the spread of invasive plants to uninfested areas.
- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1 percent weed seed).
- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).

- Use sterile wheatgrass seed and native plant stock during revegetation.
- Revegetate or mulch disturbed soils within 30 days of completion of ground-disturbing activities to reduce the likelihood of invasive plant establishment.

The goal for implementation of two or more of these BMPs is to minimize the disturbance and transport of soil and vegetation to the greatest extent feasible to complete the work. Detailed information about implementing these BMPs is available in the Cal-IPC publication *Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors* (California Invasive Plant Council 2012).

Restore Temporarily Disturbed Grassland

Upon project completion, Caltrans will require the contractor to restore all temporarily disturbed grassland to pre-project or better conditions. To the extent feasible, native grasses and forbs will be used to reseed disturbed areas.

1.7 Permits and Approvals Needed

Table 1-3 lists the permits and coordination that would likely be required for the project.

Table 1-3. Permits and Approvals Needed

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Section 404 authorization for fill of waters of the United States	Not yet initiated
U.S. Fish and Wildlife Service	Coordination and Section 7 consultation regarding threatened and endangered species	Not yet initiated
Central Valley Regional Water Quality Control Board	Section 401 Water Quality Certification and coverage under the existing Caltrans National Pollutant Discharge Elimination System Permit (Order No. 00-06-DWQ)	Not yet initiated
Butte County Air Quality Management District	Formal notification prior to construction	Not yet initiated

1.8 References Cited

Butte County Association of Governments et al. 1990. *State Routes 70 and 99 Corridor Study.* Available: http://www.dot.ca.gov/hq/transprog/ctcbooks/2007/1207/51_2.3a.pdf. Accessed: January 21, 2016.

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Value Management Strategies, Inc. 2001. *Marysville By-Pass Value Analysis Study.* Available: http://www.bcag.org/documents/RFP%20IFB/SR%2070%20PID/Msvl%20Bypass%20to%20Oroville%20Freeway%20Value%20Analysis.pdf. Accessed: January 21, 2016.

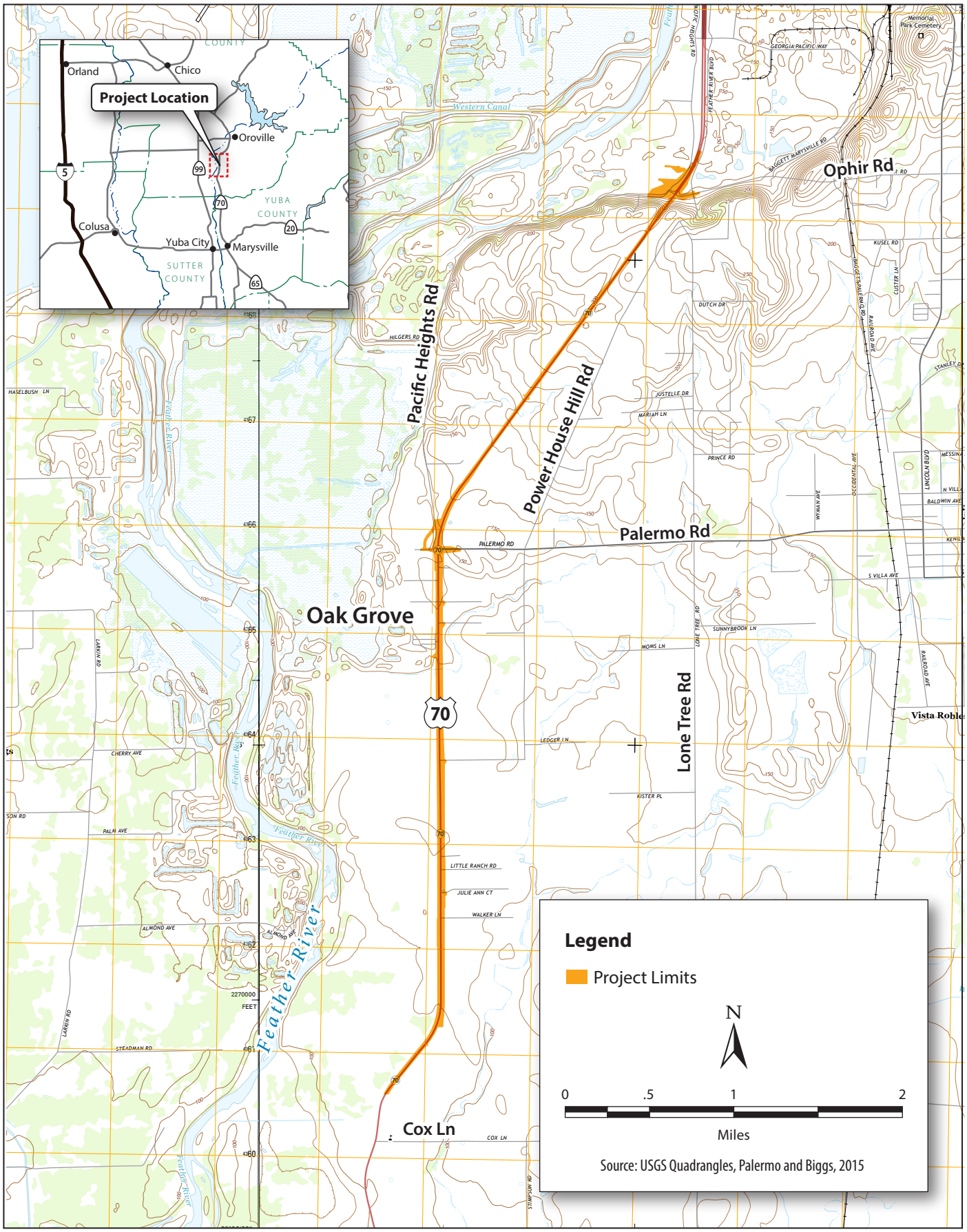

Figure 1-1 – Project Location
State Route 70 Corridor Improvements
03-BUT-70-PM 5.7/11.8 (EA 03-3F280/E-FIS 0312000155)

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Figure 1-2
Project Alternatives - Segment 1
Sheet 1 of 3

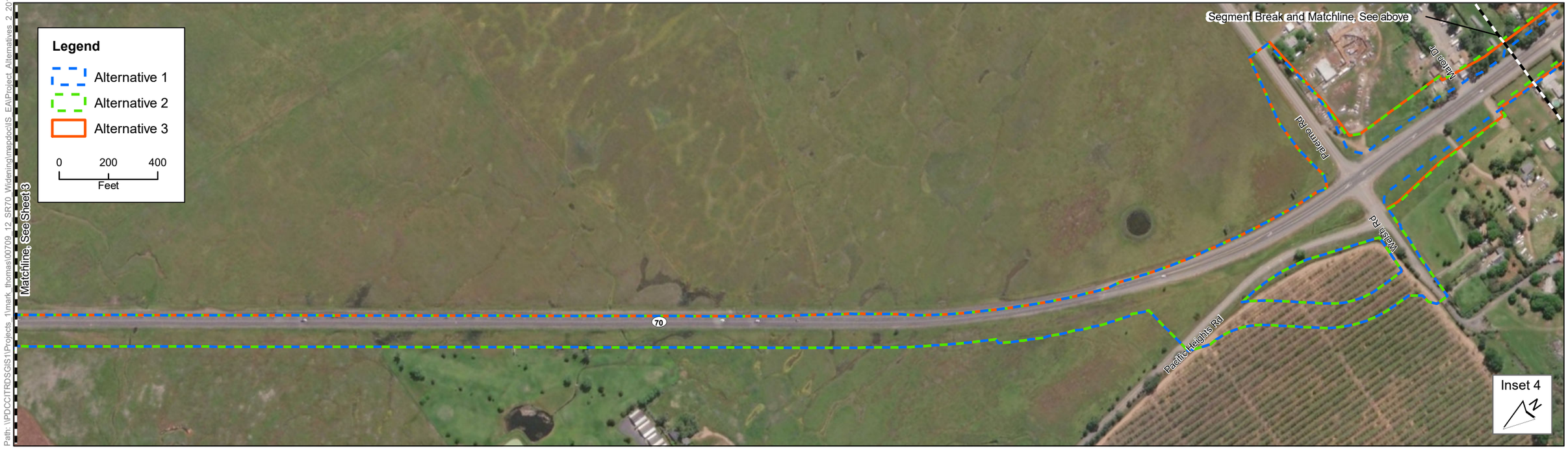

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Figure 1-2
Project Alternatives - Segments 1 and 2
Sheet 2 of 3

Path: \\PDCCITRDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Project Alternatives_3_20180716.mxd; User: 19016; Date: 7/17/2018

Figure 1-2
Project Alternatives - Segment 2
Sheet 3 of 3

Chapter 2
Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Caltrans prepared a variety of technical studies and evaluated the potential effects of the proposed project on environmental factors. A list of technical studies is located in Appendix H.

Resources That Would Not Be Affected by the Project

As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

- **Timberland.** There is no land designated as timberland or timber production zones (TPZ) in the project vicinity.
- **Coastal Zone.** This project is outside the coastal zone and not subject to the regulations of any coastal program.
- **Wild & Scenic Rivers.** No nationally or state-designated wild and scenic rivers are within project limits or would be affected by the project.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

A Community Impact Assessment (CIA) was prepared for the project in December 2016 and included an analysis of existing and future land use. The proposed project site is located within the central part of Butte County, in an unincorporated area from 0.3 mile north of Cox Lane to 0.3 mile north of Ophir Road. The major land uses in the project's area of unincorporated Butte County are mainly agricultural, rural residential, and recreational.

Most of the study area contains large parcels, many of which are used for agricultural purposes. The central portion of the proposed alignment is surrounded by smaller parcels ranging in size from 0.5 acre to 1.5 acre, most of which are developed for single-family residences. The Golden Oaks Mobile Home Park is present in the central portion of the study area. The northern portion of the study area appears vacant and undeveloped with the exception of the Dingerville USA Golf Club and RV Resort and the Bamford Tire Company commercial tire retailer. Access to each developed parcel is provided either directly from SR 70 or via private roadways between property lines. Figure 2-2 shows the locations of existing land uses within the study area as well as reasonably foreseeable and planned land uses within the study area.

In addition to the proposed project, the Rio d'Oro Specific Plan is proposed to be developed adjacent to SR 70, between Palermo Road to the south and Ophir Road to the north. The Rio d'Oro Specific Plan (approved May 19, 2015) is located on undeveloped land and is approximately 689 acres in size. The overall development project would include residential, commercial, public facility, park and open space, and environmental conservation uses within five villages. It includes up to 2,700 residential units at a range of densities from low-density single-family residences (from 3 units/acre) to high-density multi-family development (up to 30 units/acre), and 248,000 square feet of commercial development. Full buildout of the Specific Plan is expected to be complete by 2035, with construction expected to begin in late-2018 or early 2019.

Although the plan includes a road that would parallel a portion of SR-70, no direct access to SR-70 is proposed as part of the Rio d'Oro Specific Plan. An existing intersection with SR-70 would be removed. Traffic generated by this development would access SR-70 at Ophir Road and Palermo Road. A "Highway Services" commercial area is planned for the northeast quadrant of the SR-70/Palermo Road intersection. The specific plan's primary commercial area will be located just south of the of the SR-70/Ophir Road intersection.

With the exception of the proposed project and the Rio d'Oro Specific Plan, there are no other planned or reasonably foreseeable projects in the study area.

Environmental Consequences

Build Alternatives

Implementation of the proposed project would widen SR 70 through the project limits, which would involve the conversion of private land not currently used for transportation purposes to transportation right-of-way. Each of the three build alternatives would require acquisition of narrow areas of rights-of-way from adjacent properties in order to accommodate the expanded roadway. Some of these acquisitions would require relocation of the residents and businesses currently situated on these properties. For more details on the impacts related to acquisitions and relocations, see Section 2.1.4.2, *Relocations and Real Property Acquisition*.

Within the northern portion of the project limits (Segment 1), which would be widened to the west, SR 70 would be an access-controlled expressway. Changes in access to roadside tire, equipment, and lumber businesses at APN 025-360-035 would occur, but access to the site would be maintained via Power House Hill Road. No other direct access within Segment 1 would be either created or eliminated at this time.

Within the southern portion of the project limits (Segment 2), SR 70 would be a conventional highway, and direct driveway access points would be eliminated or consolidated where feasible to reduce the number of conflict points. The number of driveways that may be eliminated will not be known until the right-of-way phase is underway. For additional detail related to the acquisitions and relocations, see Section 4.4, *Relocations*.

No-Build Alternative

No change in land uses would occur under the No-Build Alternative, as no project improvements would be undertaken.

Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.1.2 Consistency with State, Regional and Local Plans and Programs

Affected Environment

The project limits are located fully within the unincorporated portion of Butte County. As such, the project area is under the jurisdiction of the Butte County General Plan. The following plans, policies, and regulations are pertinent to project implementation.

Butte County General Plan

The Butte County General Plan was adopted in October 2010 and became effective in November 2010. It serves as the basic planning document and is the vehicle through which the County addresses and contains the following elements relevant to the project.

Land Use Element

Goal LU-1: Continue to uphold and respect the planning principles on which the County's land use map is based.

LU-P1.1: The County shall protect and conserve land that is used for agricultural purposes, including cropland and grazing land.

Circulation Element

Goal CIR-6: Support a balanced and integrated road and highway network that maximizes the mobility of people and goods in a safe, efficient manner.

Goal CIR-7: Develop a transportation system that is consistent with and will support existing and proposed patterns and densities of land use and that encourages efficient land utilization.

Conservation and Open Space Element

Goal COS-18: Protect and enhance scenic areas adjacent to and visible from highways for enjoyment by residents and visitors.

Agricultural Element

Goal AG-2: Protect Butte County's agricultural lands from conversion to non-agricultural uses.

Goal AG-6: Provide adequate infrastructure and services to support agriculture.

AG-P6.3: The County supports the provision of transportation infrastructure to transport agricultural goods to markets and ports.

Rio d'Oro Specific Plan

The Rio d'Oro Specific Plan does not contain any policies applicable to SR-70. The approval of the Specific Plan incorporates a number of mitigation measures from that project's EIR that are pertinent to SR-70. The Board of Supervisors Resolution #15-077 approving the Specific Plan requires that the developer contribute their fair share of the cost of future road improvements per the following:

Mitigation Measure T-1: a traffic signal at the SR-70/Welsh Road/Palermo Road intersection (to be required when signal warrants are reached)

Mitigation Measure T-2(a): a grade-separated interchange or overcrossing at the SR-70/Georgia Pacific Way intersection

Mitigation Measure T-2(b): a grade-separated interchange at the SR-70/Ophir Road intersection and realignment of Pacific Heights Road.

Mitigation Measure T-2(d): a traffic signal and auxiliary turn lanes at the SR-70/Welsh Road/Palermo Road intersection (to be required when signal warrants are reached).

Butte County Association of Governments

The Butte County Association of Governments (BCAG), one of the proponents of the proposed project, is responsible for the preparation of transportation planning within Butte County, with participation from jurisdictions. The proposed project is included in the 2012 Metropolitan Transportation Plan/Sustainable Communities Strategy and 2015 Federal Transportation Improvement Program, where it is listed under two separate project descriptions: "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd" and "Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln."

Caltrans Interregional Transportation Strategic Plan

SR 70 is identified as one of 34 High Emphasis Routes that are of particular importance from a statewide perspective. SR 70 is further designated as one of 10 Focus Routes in California. A subset of High Emphasis Routes, Focus Routes are the Interregional Road System corridors that are of the highest priority to be upgraded to freeway or expressway standard during the 20-year planning horizon of the Interregional Transportation Strategic Plan.

Environmental Consequences

Table 2.1.1-1 addresses the proposed project's consistency with relevant state, regional, and local plans and programs.

Table 2.1.1-1. Consistency with State, Regional, and Local Plans and Programs

Plan/Element/Goal/Objective/ Policy/Guiding Principle	Build Alternatives	No-Build Alternative
Butte County General Plan		
Land Use Element		
Goal LU-1: Continue to uphold and respect the planning principles on which the County's land use map is based.	*No conflict.* Each of the build alternatives would require the acquisition of portions of properties, but are not expected to limit the use of the remaining portion of the property. Thus, they would not conflict with the planning principles on which the County's land use map is based.	*No conflict.* The No-Build Alternative would not require the acquisition of any properties and would not conflict with the planning principles on which the County's land use map is based.
LU-P1.1: The County shall protect and conserve land that is used for agricultural purposes, including cropland and grazing.	*No conflict.* Each of the build alternatives would require the acquisition of portions of properties that are used for agricultural purposes, but would not preclude agricultural uses on the portions of agricultural properties that would not be acquired.	*No conflict.* The No-Build Alternative would not require the acquisition of any properties used for agricultural purposes and would not preclude agricultural uses on any properties.
Circulation Element		
Goal CIR-6: Support a balanced and integrated road and highway network that maximizes the mobility of people and goods in a safe, efficient manner.	*No conflict.* The build alternatives would result in safety improvements, which would support the mobility of people and goods in a safe, efficient manner.	*In conflict.* Under the No-Build Alternative, no changes to the existing roadways would occur in the project area. This alternative would not provide a roadway network that maximizes the mobility of people and goods in a safe, efficient manner.
Goal CIR-7: Develop a transportation system that is consistent with and will support existing and proposed patterns and densities of land use and that encourages efficient land utilization	*No conflict.* The build alternatives would contribute to the development of a transportation system that is consistent with proposed patterns and densities of land use.	*In conflict.* Under the No-Build Alternative, the transportation system would not be consistent with existing or proposed patterns and densities of land use.

Plan/Element/Goal/Objective/ Policy/Guiding Principle	Build Alternatives	No-Build Alternative
Conservation and Open Space Element		
Goal COS-18: Protect and enhance scenic areas adjacent to and visible from highways for enjoyment by residents and visitors.	*No conflict.* The build alternatives would require the acquisition of portions of properties immediately adjacent to the existing right-of-way, but would not hinder efforts to protect and enhance scenic areas adjacent to and visible from highways.	*No conflict.* The No-Build Alternative would not require the acquisition of portions of properties immediately adjacent to the existing right-of-way and would not hinder efforts to protect and enhance scenic areas adjacent to and visible from highways.
Agricultural Element		
Goal AG-2: Protect Butte County's agricultural lands from conversion to non-agricultural uses.	*Partial conflict.* Under the build alternatives, portions of parcels dedicated to agricultural uses would be acquired and converted to transportation uses. The Build Alternatives would not preclude agricultural uses on the portions of agricultural properties that would not be acquired.	*No conflict.* Under the No-Build Alternative, no portions of any parcels would be acquired and converted to transportation uses, and the alternative would not preclude agriculture uses on those properties.
Goal AG-6: Provide adequate infrastructure and services to support agriculture.	*No conflict.* The build alternatives would provide adequate infrastructure and services to support agriculture.	*In conflict.* The No-Build Alternative would not provide adequate infrastructure and services to support agriculture.
AG-6.3: The County supports the provision of transportation infrastructure to transport agricultural goods to markets and ports.	*No conflict.* The build alternatives would improve infrastructure to transport agricultural goods to markets and ports.	*In conflict.* Under the No-Build Alternative, no changes to the transportation infrastructure would occur in the project area, and there would be no provision of transportation infrastructure to transport agricultural goods to markets and ports.
Butte County Association of Governments		
2012 Metropolitan Transportation Plan/ Sustainable Communities Strategy	*No conflict.* The build alternatives are accurately described under two separate project descriptions: "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd" and "Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln."	*In conflict.* Under the No-Build Alternative, projects described as "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo RD" and "Widen @R 70 from 2 to 4 lanes from Palermo Rd to Cox Ln" would not occur.
2015 Federal Transportation Improvement Program	*No conflict.* The build alternatives are accurately described under two separate project descriptions: "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd" and "Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln."	*In conflict.* Under the No-Build Alternative, projects described as "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo RD" and "Widen @R 70 from 2 to 4 lanes from Palermo Rd to Cox Ln" would not occur.

Plan/Element/Goal/Objective/ Policy/Guiding Principle	Build Alternatives	No-Build Alternative
Caltrans		
Interregional Transportation Strategic Plan	*No conflict.* SR 70 is identified as one of 34 High Emphasis Routes that are of particular importance from a statewide perspective.	*In conflict.* Under the No-Build Alternative, SR 70 would remain in its current configuration despite identification as a High Emphasis Route of particular importance from a statewide perspective.

Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.1.3 Parks and Recreational Facilities

Affected Environment

With the exception of the Dingerville USA golf course, there are no other local, state, or federally designated parks or recreational areas within a 0.5-mile radius of the project site. Butte County does not have a formal or organized system of trails; however, some are maintained by federal and state agencies. These include the Pacific Crest National Scenic Trail, the Feather Falls National Recreation Trail, the Loafer Creek and Freeman Trail, and the Chico Recreation and Park District. The Lake Oroville State Recreation Area, northeast of the project area, offers outdoor activities such as camping, horseback riding, hiking, boating, fishing, and swimming. To the west of the project area is the Feather River. Although not within the bounds of the project area, the river provides a place for residents to fish and enjoy other recreational activities.

The project is adjacent to a driveway access for the California Department of Fish and Wildlife's (CDFW's) Oroville Wildlife Area. The driveway is on SR 70 approximately 0.6 mile north of Power House Hill Road. The majority of the 11,800-acre Oroville Wildlife Area is not within the study area. Visitors are permitted to hunt deer, quail, turkey, and waterfowl. Fishing is also permitted, with salmon, steelhead, shad, and striped bass found in the Feather River. Dingerville USA is a small resort with a private golf course, mobile home park, and RV resort area, located just north of Palermo Road. Dingerville USA is the only recreational land use adjacent to the project corridor. The golf course is closed to the public, and the recreational areas within the resort are set aside for use by the resort residents.

Environmental Consequences

All three build alternatives require sliver right-of-way acquisitions from the properties fronting SR 70, including Oroville Wildlife Area. Temporary construction easements (TCEs) would also be required with up to an additional 10 feet beyond the right-of-way acquisition. The project would temporarily affect a small of strip of land (less than 0.2 acre) west of SR 70 during construction and permanently incorporate 0.21 to 1.12 acres of land into the SR 70 right-of-way. The Oroville Wildlife Area facilities and related activities are primarily located west of the Feather River or occur at a distance from the proposed project, not adjacent to the area proposed for widening. Furthermore, the improvements associated with widening SR 70 would not interfere with Oroville Wildlife Area's

function to preserve wildlife values and habitat, and would be coordinated with CDFW. In addition, implementation of the measures listed below would reduce potential effects.

Avoidance, Minimization, and Mitigation Measures

REC-1: Minimize Harm to the Oroville Wildlife Area Property.

- Access to Oroville Wildlife Area from SR 70 will be maintained at all times and will be coordinated with CDFW. If access is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular and pedestrian access around the construction area or provide signs directing vehicles to the Pacific Heights Road access point. Pedestrian access around the construction zone will be maintained at all times.
- In the event that any inadvertent damage occurs to the lands or entrance signs, the property will be restored to the condition that existed prior to the construction activities or better.
- Caltrans' Division of Right of Way and Land Surveys will coordinate with CDFW to provide the compensation required under the Park Preservation Act.

2.1.1.4 References Cited

Butte County. 2015. Rio d'Oro Specific Plan. Available: http://www.buttecounty.net/Portals/10/Docs/SpecificPlans/Rio%20d'%20Oro/Rio_dOro_Specific_Plan.pdf. Accessed: May 15, 2018.

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———. 2015. Butte County Development Services. Available: http://gismaps.buttecounty.net/public/dsdatasearch/. Accessed: November 15, 2017.

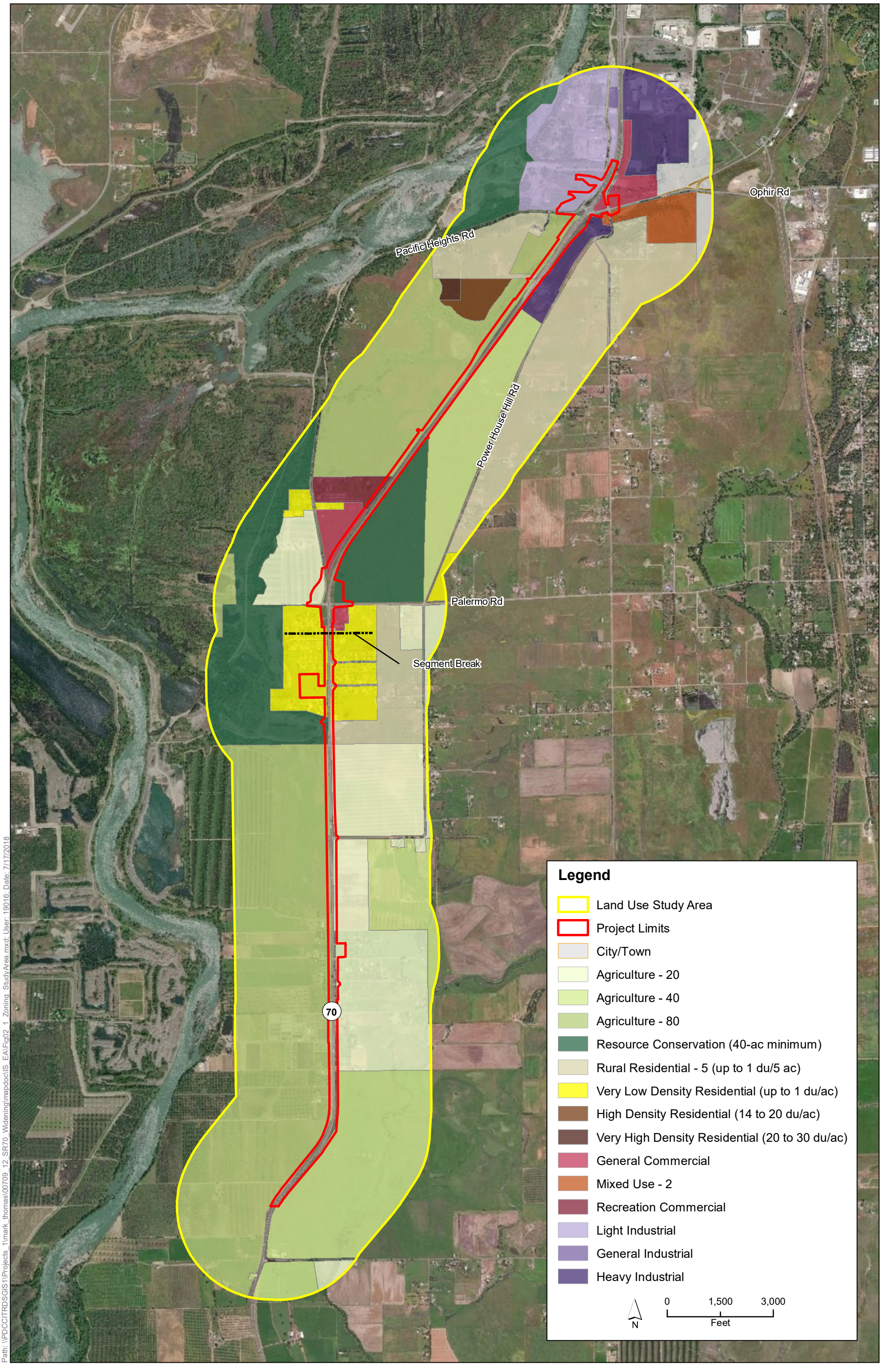

Figure 2-1
Zoning Designations within Study Area

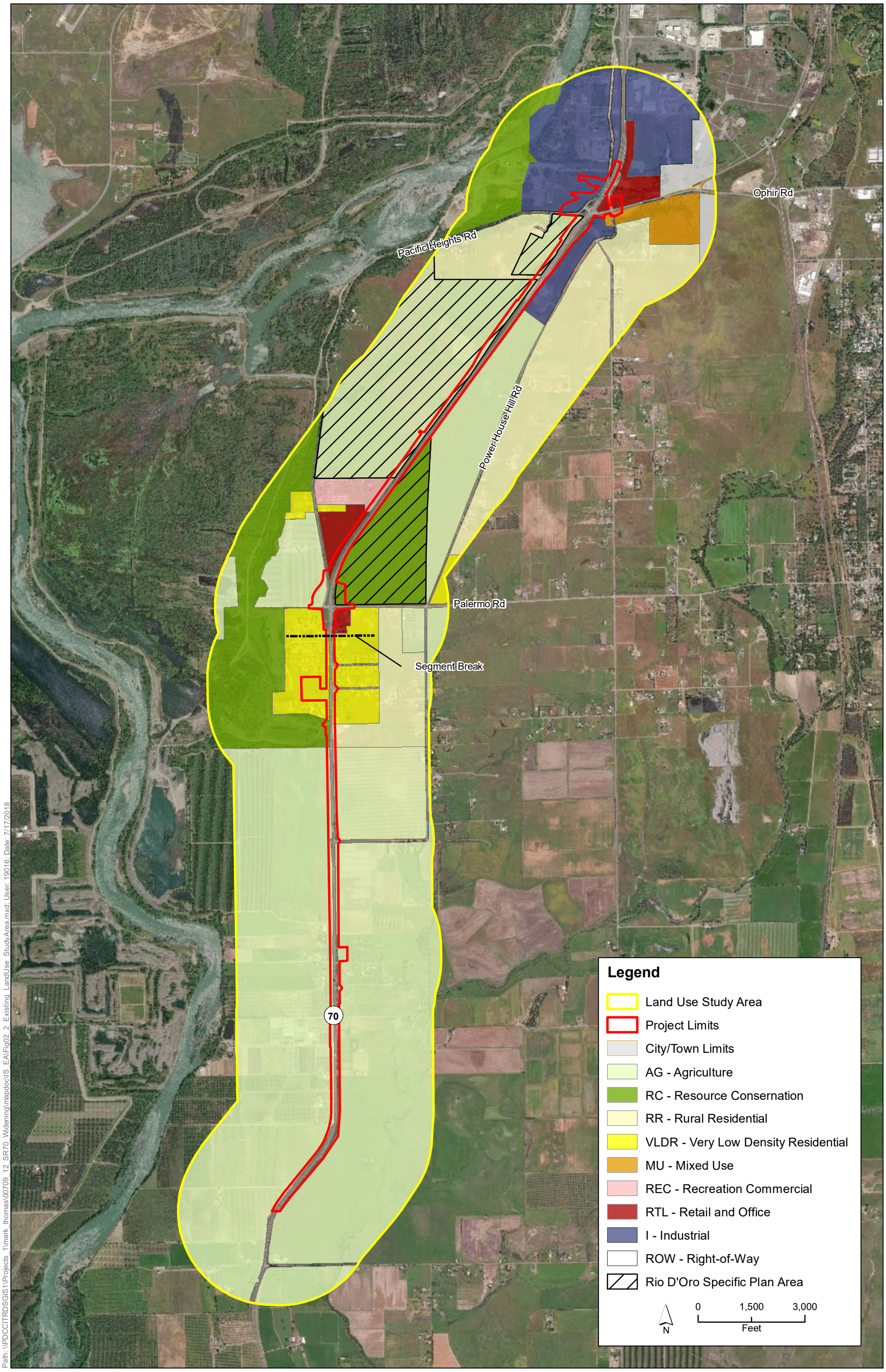

Figure 2-2
Existing Land Use within Study Area

2.1.2 Growth

Factors that influence land use and development in an area may include population and economic growth, desirability of locations, cost and availability of developable land, physical and regulatory constraints, transportation, and cost of sewer, water, and other utility services.

Transportation agencies play a role in land use changes by providing infrastructure that can improve mobility and/or open up access to new locations. New development generates travel to and from that location, and this additional travel creates demand for new transportation facilities. The relationship between transportation and land use and the degree to which one influences the other is a topic of ongoing debate. This section addresses the growth in the study area and larger region and the extent to which the proposed project would contribute to that growth.

Different transportation projects will influence growth to different degrees and in different ways, and a two-phase approach to the evaluation of growth-related impacts is used below. The first phase, called a "first-cut screening," is designed to help analysts figure out the likely growth potential effect and whether further analysis of the issue is necessary. The second phase involves additional analysis of growth. The second phase is conducted in the event that the first-cut screening analysis suggests that growth impacts would occur.

2.1.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA guidelines (Section 15126.2[d]) require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

2.1.2.2 Affected Environment

According to the November 2014 *Butte County Long-Term Regional Growth Forecasts 2014–2040* prepared by the Butte County Association of Governments slight growth is expected to occur in Butte County. A low, medium, and high scenario was developed for each forecast of housing, population, and growth for the document to provide flexibility when utilizing the forecast for long-term planning and to alleviate some inherent uncertainty in long-range projections. Population forecasts for the County for 2014–2040 show a 1.2 percent, 1.4 percent, and 1.6 percent increase in population per year for the low, medium, and high scenarios, respectively. This compound annual growth rate for 2014–2040 will result in the population increasing 36 percent, 44 percent, and 51 percent countywide in the low, medium, and high scenarios, respectively. In addition to the population growth anticipated to occur by 2040, Butte County and the areas surrounding the project

site are expected to experience employment growth. Employment is projected to rise by 39 percent, 46 percent, and 54 percent by 2040 in the low, medium, and high scenarios, respectively (Butte County Association of Governments 2014).

2.1.2.3 Environmental Consequences

The analysis of growth-related indirect impacts follows the first-cut screening guidelines provided in the California Department of Transportation's *Guidelines for Preparers of Growth-Related Indirect Impact Analysis* (California Department of Transportation 2006). The first-cut screening analysis focused on addressing the following considerations:

- *How, if at all, does the project potentially change accessibility?*
- *How, if at all, do the project type, project location, and growth-pressure potentially influence growth? Some transportation projects may have very little influence on future growth, while others may have a great influence. Some geographic locations are more conducive to influencing growth, while others are highly constrained. These differences may result from physical constraints, planning and zoning factors, or local political considerations.*
- *Determine whether project-related growth is "reasonably foreseeable." Under NEPA and CEQA, indirect impacts need only be evaluated if they are "reasonably foreseeable" as opposed to remote and speculative.*
- *If there is project-related growth, how, if at all, will that impact resources of concern? Identify which resources of concern are likely to be affected by the foreseeable future growth. If a project is likely to influence future growth, but no resources of concern will be affected, then state that here and indicate that no further growth analysis is necessary.*

The potential for project implementation to influence growth is based on the first-cut screening analysis.

First-Cut Screening Analysis

How, if at all, does the project potentially change accessibility?

Each of the build alternatives would involve the conversion of the existing SR 70 facility from a two-lane roadway to a four-lane expressway. Because Segment 1 would be access-controlled, the build alternatives would remove direct access to properties from SR 70 in this segment. However, these properties would continue to be accessible from roadways that connect with the proposed Palermo Road and Ophir Road interchanges.

Implementation of the build alternatives would not directly result in increased accessibility to new areas that are currently inaccessible or undeveloped. However, each of the build alternatives would increase the capacity of SR 70 through the project limits, which would reduce travel times on SR 70. The reductions in travel times could result in indirect increases in accessibility, as trip times contribute to business or residential locational decisions; such reductions could make locating businesses or residents farther from existing development more likely. However, the change in travel times is a single component of locational decisions, and the marginal decrease in travel times as a result of project implementation is not expected to contribute substantially to changes in accessibility.

Because the segment of SR 70 within the project limits is an existing highway serving as a link between the Marysville area and the Oroville area, the project would not provide new access to undeveloped areas. Rather, it would involve widening the existing facility. Therefore, accessibility to employment, residential, shopping, or other destinations is not expected to change drastically.

How, if at all, do the project type, project location, and growth-pressure potentially influence growth?

The build alternatives would convert the existing two-lane highway to a four-lane expressway, which would be access-controlled in Segment 1 (northerly portion of the alignment). Given that the area is primarily rural and agricultural with pockets of residential development, there are locations available for commercial and residential development, as evidenced by the Rio d'Oro Specific Plan that has been prepared and approved to guide development of the northwest portion of the study area. As discussed above, none of the build alternatives would change land uses surrounding the project alignment such that increases in development would occur as a direct result of project implementation. The increased operational efficiency and reduced travel times on SR 70 that would occur as a result of project implementation could contribute to growth in the region, but that contribution is expected to be minor and indirect.

Is project-related growth "reasonably foreseeable?"

Growth in the project vicinity is reasonably foreseeable, as the Rio d'Oro Specific Plan, which was approved in May 2015 by the Butte County Board of Supervisors, would involve the construction of as many as 2,700 residential units on 413 acres within proximity of the proposed project. Although growth is reasonably foreseeable, this growth is not considered project-related. Implementation of the build alternatives would not include residential units, commercial development, or other trip-generating uses such that growth would occur as a direct result. In addition, the project would not create new access to undeveloped areas, and the project would not change surrounding land uses in a manner that would increase the development potential of the area. Indirectly, however, the proposed project would serve the transportation needs of projects that are part of the Rio d'Oro Specific Plan, as well as the transportation needs of the existing population and future regional growth. The proposed project is consistent the project descriptions within the *2015 Federal Transportation Improvement Program for Butte County*, which lists the project under CTIPS ID 102-0000-0176 (Segment 1) and 102-0000-0177 (Segment 2). Thus, the build alternatives are consistent with planned regional growth.

If there is project-related growth, how, if at all, will that impact resources of concern?

As discussed above, the growth that is expected to occur in the project vicinity is not project-related. The project would serve such growth, and in this way, its contribution to growth would be indirect and not substantial.

Based on the first-cut screening analysis, additional analysis related to growth is not required.

2.1.2.4 References Cited

Butte County Association of Governments. 2014. Butte County Long-Term Regional Growth Forecasts 2014-2040. Available: http://www.bcag.org/documents/demographics/pop_emp_projections/Growth_Forecasts_2014-2040_draft.pdf. Accessed November 15, 2017.

2.1.3 Farmlands

2.1.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act (CEQA) requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

2.1.3.2 Affected Environment

A Community Impact Assessment (CIA) was prepared for the project in December 2016 and included an analysis of farmland. According to the *Butte County 2015 Agricultural Crop & Livestock Report* (Butte County 2015) the gross crop value for Butte County was $772,653,396. The fruit and nut crop were the leading crop in Butte County with a total value of $532,653,396.

In 2014, Butte County contained 115,923 acres of prime farmland and 100,257 acres of nonprime farmland under the Williamson/Land Conservation Act (Department of Conservation 2015a). According to maps produced by the Department of Conservation, no farmland under Williamson Act contract are present within the study area (Department of Conservation 2015b). The Williamson Act has been the state's premier agricultural land protection program since its enactment in 1965. Land placed under a Williamson Act contract is restricted to agricultural uses. The Williamson Act is a non-mandated state policy providing for a preferential assessment of agricultural and open space lands that meet local size and use criteria.

The Department of Conservation Farmland Mapping and Monitoring Program produces maps and statistical data used for analyzing impacts on California's agricultural resources. Within the project study area, four important farmland category types are classified:

- *Grazing Land (G)* – Land on which the existing vegetation is suited to the grazing of livestock.
- *Unique Farmland (U)* – Land of lesser quality soils used for the production of the state's leading agricultural crops.
- *Prime Farmland (P)* – Land with the best combination of physical and chemical features able to sustain long-term agricultural production.
- *Farmland of Statewide Importance (S)* – Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.

Farmlands mapped as part of the Farmland Mapping and Monitoring Program in the project study area are shown in Figure 2-3.

The study area contains farmland that is designated by the California State Department of Conservation Farmland Mapping and Monitoring Program (FMMP) as grazing land, farmland of statewide importance, unique farmland, and urban and built-up land (California Department of Conservation 2016).

2.1.3.3 Environmental Consequences

The build alternatives entail improving safety in the SR 70 corridor. Overall changes in land use patterns, including farmland, would not occur. Some minor land use acquisitions could occur and would vary by alternative. Table 2.1.3-1 below shows the amount of farmland that would be acquired by alternative.

Table 2.1.3-1. Farmland Conversion by Alternative

Type of Farmland	Alternative 1 TCE/Permanent	Alternative 2 TCE/Permanent	Alternative 3 TCE/Permanent
Farmland of Statewide Importance	1.93/5.88	2.06/7.73	2.09/7.45
Grazing Land	4.95/69.83	7.50/72.05	7.24/72.71
Other Land	4.88/37.24	5.26/38.87	5.24/38.56
Unique Farmland	0.06/2.17	0.23/1.08	0.25/1.83
Urban and Built-Up Land	1.30/12.96	1.48/15.69	1.45/15.52

As discussed above, implementation of the proposed project would involve the conversion of private land not currently used for transportation purposes to transportation right-of-way, which would require easements. Proposed project improvements requiring temporary construction disturbance, temporary easements, and permanent easements would affect lands within the project area that are mapped as both Grazing Land (G), Unique Farmland (U) and Farmland of Statewide Importance (S) by the California Department of Conservation Farmland Mapping and Monitoring Program. As shown in Table 2.1.3-1 and Figure 2-3, small portions of land adjacent to the roadway would be acquired, which would not preclude the parcel from farming. Alternative 1 would require the least amount of farmland conversion.

No farmlands under Williamson Act contract are present within the project area, and therefore no acquisition of land under Williamson Act is required.

2.1.3.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.3.5 References Cited

Butte County. 2015. Butte County 2015 Agricultural Crop & Livestock Report. Available: *https://www.buttecounty.net/agriculturalcommissioner/Documents/CropReports.aspx*. Accessed: November 16, 2017.

California Department of Conservation. 2015a. The California Land Conservation Act 2014 Status Report, The Williamson Act. Available: http://www.conservation.ca.gov/dlrp/lca/stats_reports/Documents/2014%20LCA%20Status%20Report_March_2015.pdf. Accessed: February 1, 2016.

———. 2015b. Butte County Williamson Act FY 2015/2016 Map. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/butte_15_16_WA.pdf. Accessed: February 1, 2016.

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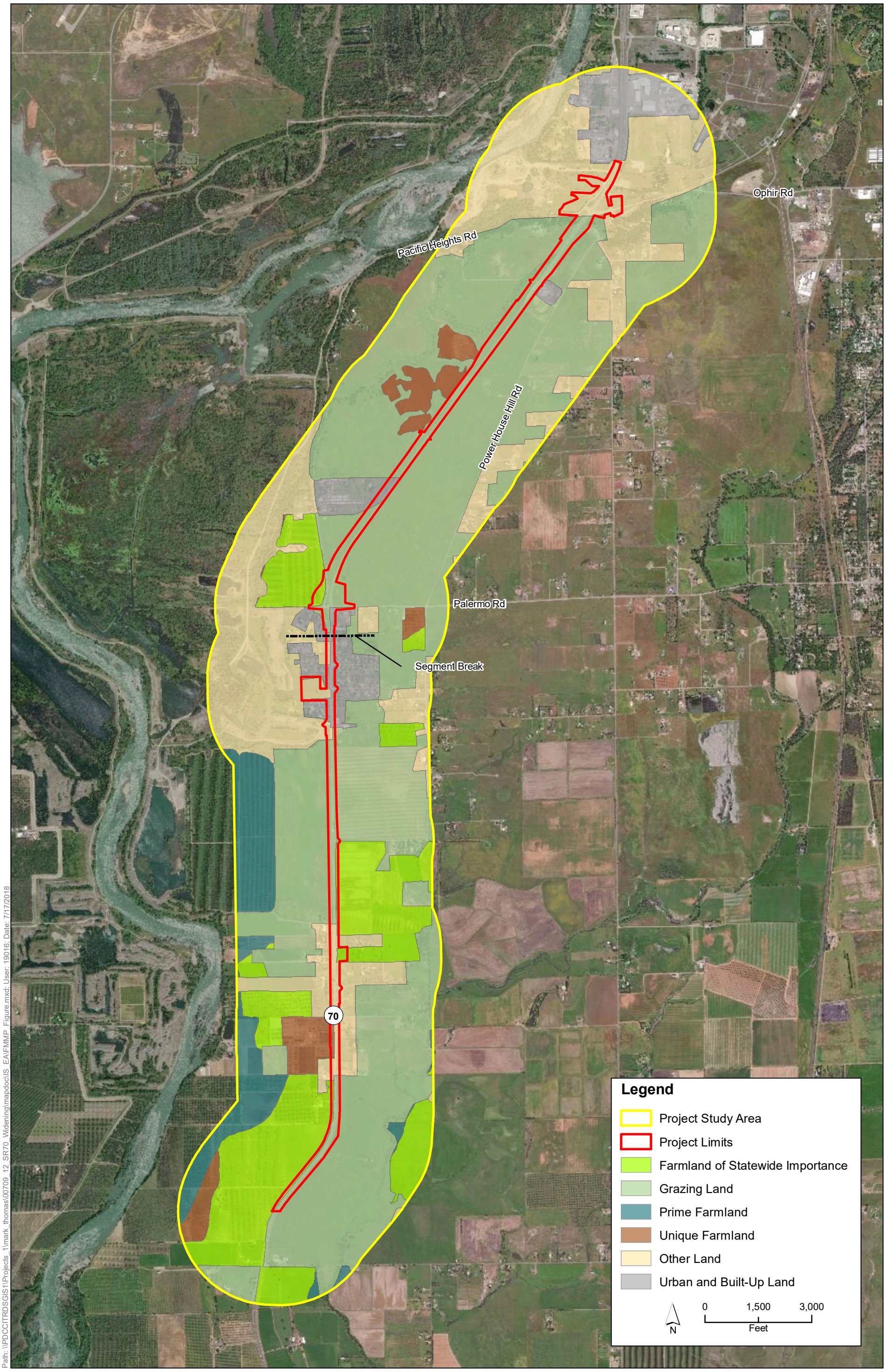

Figure 2-3
FMMP in the Project Study Area
SR 70 Widening Project

2.1.4 Community Impacts

This section describes the demographic profile and community characteristics of the project area, and includes the evaluation of potential demographic and community impacts that may result from the proposed project in the following areas: population and housing, economic conditions, community facilities and services, relocations, and environmental justice. The community profile has been prepared in accordance with Caltrans' *Standard Environmental Reference, Environmental Handbook Volume 4–Community Impact Assessment* (2016).

Unless otherwise noted, the study area for the purposes of this section is Census Tract 33, which includes the unincorporated communities of Honcut and Bangor, and portions of the unincorporated community of Palermo. Of these areas, only Palermo is within 0.5-mile of the project location; Honcut is 4 miles to the southeast and Bangor is 9 miles to the east. The study area was selected on the basis of both data availability and a conservatively large area in which impacts, if identified, would occur. The entire study area is located within the boundaries of Butte County, and countywide demographic information is included below for context. In addition, demographic data for the Palermo Census Designated Place (CDP) have been included, as this is the closest populated area to the project alignment.

2.1.4.1 Regulatory Setting

The National Environmental Policy Act of 1969 (NEPA), as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The Federal Highway Administration in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act (CEQA), an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Because this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

2.1.4.2 Community Character and Cohesion

Affected Environment

A Community Impact Assessment was completed for the project in December 2016 (ICF International 2016a). The study area was a 0.5-mile area around the project footprint. In some cases, a different study area was defined to account for the nature of the topic and the availability of data; where the 0.5-mile radius is not used, the study area is appropriately noted.

Regional Population Characteristics

The project is situated in south-central Butte County between the City of Marysville and the City of Oroville. According to the 2010–2014 American Community Survey 5-year estimates, the total population in Butte County is 220,542. Non-Hispanic Whites make up the largest racial/ethnic group, representing 85.5 percent of the population. Hispanic/Latinos of any race make up the next largest group, accounting for approximately 14.5 percent of the population. Those of Asian descent and those with mixed-race ancestry make up approximately 4 percent of the County's population. The population is also composed of, in order of descending prevalence, Black or African American, Native American, and Native Hawaiian/Pacific Islander groups (see Table 2.1.4-1).

As shown in Table 2.1.4-1, the study area is sparsely populated with a residential population of just under 10,000. Similar to the overall County, the ethnic/racial make-up of the study area is approximately 70 percent non-Hispanic White. Palermo is 23 percent Hispanic/Latino, higher than the County (14.9 percent) and Census Tract 33 (13.2). Mixed-race individuals make up the next largest group at 8.2 percent of the population for Census Tract 33 and 4.1 percent for Palermo. Those of Asian ancestry make up 2.2 percent of the Census Tract 33 population and 0.3 percent of Palermo population, both less than the County proportion. Those with American Indian and Alaska Native ancestry make up 2.7 and 1.1 percent of the populations of Census Tract 33 and Palermo, respectively.

Table 2.1.4-1. Existing Regional and Local Population Characteristics—Race/Ethnicity

				Not Hispanic or Latino											
Area	Total	Hispanic or Latino (of any race)	%	White	%	Black or African American	%	American Indian and Alaska Native	%	Asian	%	Native Hawaiian/ Pacific Islander	%	Other Race	%	Two or More Races	%
Butte County	221,578	32,968	14.9	164,509	74.2	2,996	1.4	1,649	0.7	9,298	4.2	338	0.2	120	0.1	9,700	4.4
Census Tract 33	4,511	595	13.2	3,173	70.3	149	3.3	121	2.7	101	2.2	–	0.0	2	0.0	370	8.2
Palermo CDP	5,419	1,250	23.1	3,756	69.3	116	2.1	59	1.1	17	0.3	–	0.0	–	0.0	221	4.1

Source: U.S. Census Bureau, 2010–2014 American Community Survey, Table B03002 (2015).

Of those residing within Butte County, 20.5 percent of the population is under 18 years of age according to the American Community Survey, while 16.1 percent of is 65 years of age and over. Similarly, approximately 20 percent of the study area's population is under 18 years of age and 18 percent is over 65 years of age (see Table 2.1.4-2).

Table 2.1.4-2. Existing Regional and Local Housing Characteristics—Age

Area	Total Population	Age			
		Under 18	Percentage	65 and Over	Percentage
Butte County	221,578	45,530	20.5%	35,710	16.1%
Census Tract 33	4,511	977	21.7%	878	19.5%
Palermo CDP	5,419	1,217	22.5%	979	18.1%

Source: U.S. Census Bureau, 2010–2014 American Community Survey, Table B01001 (2015).

Neighborhoods/Communities

Within a 0.5-mile distance of the project alignment, the area is primarily agricultural, with residences interspersed on either side of the highway. In the central portion of the study area, there is a concentration of single-family homes on smaller lots in addition to the Golden Oaks Mobile Home Park. With the exception of a small number of retail establishments, such as a mini-mart, the central portion of the study area is almost entirely residential. Given the close distances between residences relative to the surrounding areas and that the neighborhoods seem well-established, it is reasonable to assume that a sense of community is fostered in the area. The only other conglomeration of development along the project alignment is the Dingerville USA Golf Club and RV Resort to the north of the central study area neighborhood. Dingerville USA consists of manufactured homes, RV parking stalls, and a small number of single-family residences close to a golf course.

Housing

As shown in Table 2.1.4-3, 88.1 percent of housing units in Butte County are occupied. Comparatively, 80.9 percent of housing units are occupied in Census Tract 33, and 96.1 percent in Palermo. Owner-occupied units represent the majority of housing in the County and the study area, accounting for 60 percent of units in the County and 66 percent of units in the study area (see Table 2.1.4-4). The remaining occupied units are inhabited by renters. The number of persons per household varies between Butte County and the study area. The County has an average of 2.49 people per owner-occupied unit and 2.6 persons per renter-occupied unit, whereas the Census Tract 33 area has an owner-occupied average occupancy of 2.64 persons per unit and a renter-occupied average of 3.4 persons per unit, and Palermo has an owner-occupied average occupancy of 2.84 persons per unit and a renter-occupied average of 3.04 persons per unit.

Table 2.1.4-3. Existing Regional and Local Housing Characteristics—Occupancy (2014)

Area	Total Units	Occupied Units	Percentage of Occupied Units	Vacant Units	Percentage of Vacant Units	Persons per Household (Owner-Occupied)	Persons per Household (Renter-Occupied)
Butte County	96,700	85,215	88.1	11,485	11.9%	2.49	2.6
Census Tract 33	1,970	1,594	80.9	376	19.1%	2.64	3.4
Palermo CDP	1,947	1,871	96.1	76	3.9%	2.84	3.04

Source: U.S. Census Bureau, 2010–2014 American Community Survey, Table DP04 (2015).

Table 2.1.4-4. Existing Regional and Local Housing Characteristics—Tenure (2014)

Area	Total Units	Occupied Units	Owner Occupied-Units	Percentage of Owner-Occupied Units	Renter-Occupied Units	Percentage of Renter-Occupied Units
Butte County	96,700	85,215	50,593	59.4%	34,622	40.6%
Census Tract 33	1,970	1,594	1,201	75.3%	393	24.7%
Palermo CDP	1,947	1,871	1,376	73.5%	495	26.5%

Source: U.S. Census Bureau, 2010–2014 American Community Survey, Table DP04 (2015).

Environmental Consequences

Regional Population Characteristics

The proposed project would involve the widening of an existing roadway. As discussed in Section 2.1.2, Growth, the project would not change land uses surrounding alignments of the build alternatives and would not provide new access to areas that are currently inaccessible via SR 70. However, the build alternatives would indirectly contribute to growth by increasing the efficiency with which vehicles are able to move through the project vicinity. Growth in the project vicinity is reasonably foreseeable, and the project would serve the transportation needs of such growth. However, the proposed project would not permanently remove housing, so no displacement would occur, as discussed in Section 2.1.4.3, Relocations and Real Property Acquisition. Therefore, the project would not contribute to changes in the demographic characteristics of the region and study area.

Neighborhoods/Communities

The project would convert the existing two-lane SR 70 highway to a four-lane expressway with access control in Segment 1. The increase in the width of the SR 70 facility could result in an urbanizing appearance to an otherwise rural and agricultural area. However, as discussed in Section 2.1.1, Land Use, because the build alternatives would not change land use or zoning designations in the surrounding area and no residents would be displaced, the build alternatives would not result in a direct change to neighborhoods/communities. Furthermore, there would be no changes in direct access to residential properties and streets in the project vicinity, as the build alternatives would not be access-controlled in Segment 2 (southerly portion of the alignment).

Indirectly, each of the build alternatives would reduce travel times on SR 70 through the project vicinity, thereby contributing to a higher likelihood of businesses or residents locating further from existing development, although it is uncertain where such development would occur. The project area is expected to change in the future through the implementation of the Rio d'Oro Specific Plan as well as ongoing regional growth. Increases in traffic from Rio d'Oro and regional growth would be served by the proposed project; any increase in traffic that could occur as a result of project implementation would be minor and indirect.

Housing

No housing would be displaced as a result of project implementation. Indirectly, the build alternatives would contribute to changes in the housing market of the study area, as each build alternative would serve the growth in housing that would occur under the Rio d'Oro Specific Plan as well as other growth likely to occur in the region. The marginal improvements in the efficiency of the transportation corridor could affect the locational decisions for businesses in residents, but changes are not expected to be substantial such that they would induce development elsewhere in the corridor. Consequently, changes to the local housing market as a result of project implementation would be minor.

Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.4.3 Relocations and Real Property Acquisition

Regulatory Setting

Caltrans' Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix A for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Please see Appendix B for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

Figure 2-3 summarizes the existing land uses found within the study area, most of which are single-family residences.

Environmental Consequences

The proposed roadway widening would require acquisition of narrow strips of right-of-way for the roadway, drainage culverts, and possible utilities. It is assumed that an additional 10 feet beyond the right-of-way would be acquired as a temporary easement for construction staging. All acquisitions would be partial (i.e., not the entire parcel) and consist only of the area required to accommodate the widened highway facility. The number of properties requiring acquisition and the magnitude of

the acquisition will depend on the alternative selected. Table 2.1.4-5 lists the assessor parcel numbers (APNs) that contain structures that are within the acquisition impact area under each alternative, and Table 2.1.4-6 provides the APNs that contain structures within the assumed construction easement area and thus may require relocation to allow construction work to take place unimpeded. Table 2.1.4-7 provides the total permanent and temporary acquisition by acre under each alternative. Because some structures, including residences and businesses, are located within the area needed for the expanded right-of-way, it is assumed that these structures would require relocation. Final design of the project would make every effort to avoid acquisitions that would potentially displace any structures. Given the size of the affected properties, those structures that cannot be avoided can be relocated within the same property. The project would not require any new relocation resources, and property owners would be compensated for any loss of property and would be provided relocation assistance in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act.

Table 2.1.4-5. Assessor Parcel Numbers with Structures Impacted by Permanent Acquisition

Assessor Parcel Numbers (APN) Impacted		
Alternative 1	Alternative 2	Alternative 3
025-160-125-000	025-160-112-000	025-030-069-000
025-020-004-000	025-310-023-000	025-030-068-000
025-020-003-000	025-310-022-000	025-030-070-000
025-030-070-000	025-030-069-000	025-020-006-000/025-020-017-000
	025-030-068-000	025-020-004-000
	025-030-070-000	025-020-003-000
	025-030-071-000	025-020-017-000
	025-020-006-000/025-020-017-000	025-310-022-000
	025-020-004-000	025-160-112-000
	025-020-003-000	025-160-119-000
		025-160-117-000
		025-160-125-000

Table 2.1.4-6. Assessor Parcel Numbers with Structures Impacted by Temporary Construction Easements

Assessor Parcel Numbers (APN) Impacted		
Alternative 1	Alternative 2	Alternative 3
025-160-117-000	025-160-119-000	025-230-107-000
025-160-112-000		025-030-071-000
025-020-006-000/025-020-017-000		025-310-023-000
		025-160-117-000
		025-160-125-000

Table 2.1.4-7. Acquisition Area in Acres by Alternative

Acquisition Area in Acres by Alternative			
	Alternative 1	Alternative 2	Alternative 3
Permanent Easement (acres)	38.608	66.6	51.59
Temporary Construction Easement (acres)	15.05	16.18	10.13

Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures are required. Final design of the project would make every effort to avoid acquisitions that would potentially displace any structures.

2.1.4.4 Environmental Justice

This project has been developed in accordance with Title VI of the Civil Rights Act of 1964, as amended, and Executive Order(EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Title VI states that "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Executive Order 12898 requires each federal agency (or its designee) to take the appropriate and necessary steps to identify and address "disproportionately high and adverse" effects of federal or federally funded projects on minority and low-income populations.

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2017, this was $24,600 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

Affected Environment

The study area for the purposes of demographic data is composed of Census Tract 33.

No part of Census Tract 33 coincides with any incorporated area. The proportion of the population composed of non-Whites in the study area is approximately 30 percent, similar to that of the County (see Table 2.1.4-1). Although there are no discernible concentrations of minority residents in the study area relative to the County overall based on census tract-level American Community Survey data, there may be such concentrations at smaller units of geography.

Both the study area census tract and Palermo have median household incomes significantly higher than the Census-defined poverty level for a household of four, and slightly lower (Palermo) or higher (Census Tract 33) medians than Butte County. The median, though helpful as an indicator of the general economic health of an area, gives little indication of the distribution of that income, and data from Palermo indicate that the percentage of individuals living below the poverty threshold is higher than for the County at large. Similar to the County, both the census tract and Palermo have more than two in five people residing in renter-occupied housing, which can indicate lower levels of economic security.

Based on census tract–level poverty data, there is evidence that low-income populations reside within the study area.

Environmental Consequences

Economic indicators suggest low-income populations are present within the study area; therefore, environmental justice populations are considered to be present.

Potential effects of a proposed project are typically most likely to be experienced in the area adjacent to and immediately surrounding the location of the project (i.e., for this proposed project, immediately adjacent to or in proximity to SR 70). As such, residents in the Palermo portion of the study area would experience some adverse effects associated with construction and operation of the proposed expanded highway facility. However, the Palermo portion of the study area is already oriented around SR 70, and though construction impacts would be disruptive to adjacent and nearby neighbors, once the project is completed, impacts on the Palermo community would be consistent with and similar to existing conditions along SR 70, but with improved safety and circulation for local and regional motorists. The potential for the proposed project to impact the community is considered to be minimal. During construction, it is possible that there will be intermittent disruptions to the existing highway, but these disruptions would not preclude travel along SR 70 for extended durations. Any required road closures would be communicated in advance through outreach to residents and through the use of portable message signs, as specified in Avoidance, Minimization, and Mitigation Measures below.

A range of technical studies have been completed to evaluate the potential impacts of the proposed project in the study area. The impacts identified in these technical reports related to the human environment, and the measures to avoid or reduce them are summarized below.

Air Quality

As discussed in the April 2016 Air Quality Study Report prepared for the proposed project, portions of Butte County, including the project area, are classified as marginal nonattainment for the federal 8-hour ozone standard. The Chico Urbanized Area is also designated as a moderate maintenance for the federal carbon monoxide standard, but the rest of the County and project area is in attainment. The U.S. Environmental Protection Agency has classified all of Butte County as a nonattainment area for the federal standard for particulate matter less than 2.5 microns in diameter (PM2.5) and an attainment area for the federal standard for particulate matter less than 10 microns in diameter (PM10). Agricultural land uses surround the project, with no hospitals, parks, or places of worship within 1,000 feet. However, several driveways exist along the highway that serve residential properties, with the closest approximately 50 feet from the project corridor. Additionally, the Feather River Adventist School is located at the southern terminus of the project at the intersection

of SR 70 and Cox Lane. The project would not result in violations of PM2.5 National Ambient Air Quality Standards or California Ambient Air Quality Standards.

Implementation of the build alternatives would reduce vehicle delay and congestions at some study intersections, improving level of service under a.m. and p.m. conditions. No appreciable difference in vehicle miles traveled or mobile source air toxic emissions would occur under the build alternatives, compared to the No-Build Alternative. According to the Air Quality Study Report emission analysis, operation of the project under design year (2040) conditions would increase PM10 and PM2.5 emissions and decrease reactive organic gas, nitrogen oxides, and carbon monoxide emissions, due to factors that are primarily external to the project. Faster travel speeds provided by the roadway widening may result in a slight increase in greenhouse gas emissions relative to the No-Build Alternative.

Minor increases in regional air pollution from project-generated reactive organic gas and nitrogen oxides would have nominal or negligible impacts on human health. The project would not expose sensitive populations to substantial pollutant concentrations. Minor odors would be present during construction; however, odors would be temporary and would disperse rapidly with distance from the source.

Neither construction nor operation of the proposed project would result in disproportionately high and adverse effects on environmental justice communities.

Noise

The March 2016 Noise Study Report presented findings pertaining to a noise analysis conducted for the proposed project, which evaluated both construction-related and operational noise. Construction noise at the project site, which would include both noise from construction activities and noise associated with commuting workers, would be short-term and intermittent over the two 18-month construction periods (one 18-month period per segment). No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with applicable local noise standards and Caltrans' provisions in Section 14-8.02, Noise Control of the Caltrans Standard Specifications (ICF International 2016b).

Forecasted operational traffic noise levels would increase at some noise-sensitive receivers under the build alternative compared to the No-Build Alternative. Noise abatement for the project would not be feasible due to driveway access requirements to residences along the entire corridor, all of which would be preserved and improved as part of the project.

No substantial adverse noise impacts would occur as a result of construction, and any increase in noise during operation and construction would be experienced by all demographic groups similarly in the vicinity of noise sources.

Visual Quality

The proposed project would consist of widening an existing highway and lengthening an existing culvert to match the new highway. According to the May 2016 Visual Impact Assessment, the proposed project would not have a substantial effect on visual quality in the project vicinity. The most noticeable visual change would affect roadway neighbors at the Ophir Road intersection, though impacts would not be so great that they would alter the existing visual character of lands adjacent to the project corridor or views of these areas from the project corridor.

Because no substantial adverse impacts related to visual quality would occur as a result of construction and operation of proposed project, and the same changes to the visual setting would be experienced by all populations within the study area irrespective of race, ethnicity, or income under either alternative, there would not be a disproportionately high and adverse impact on environmental justice populations.

Traffic/Transportation

As discussed in Chapter 2.1.6, Traffic and Transportation/Pedestrian and Bicycle Facilities, the proposed project would widen the existing two-lane highway to a four-lane highway. Such improvements are anticipated to increase safety and make roadway operations more efficient. Benefits of the project would be experienced by all segments of the area's population, irrespective of race, ethnicity, or income under any alternative. The proposed project would increase the distance that pedestrians would need to travel to cross SR 70 in the Oak Grove community, but medians would be present to allow for a midway stopping point. Pedestrian activity in the study area is low. According to the Traffic Operations Report (TOR) prepared for the project, approximately 0–3 pedestrians were observed during weekday AM and PM peak hours (Fehr & Peers 2015). Bus Line 30 runs through the area, and bus stop B498 is located near the intersection of SR 70 and Palermo Rd. Current ridership at this stop is one person, who does not use the stop daily, but approximately 2-3 times per week. Upgrades of pedestrian, bicycle, and transit facilities in the study area are not currently warranted due to low pedestrian and transit activity (Newsum pers. comm.).

During the construction period, one lane of travel in each direction would be provided at all times, and would not preclude travel along the corridor for extended durations. If highway closures are required, detour routes would be available along Cox Lane, Palermo Road, Pacific Heights Road, Power House Hill Road, Ophir Road, Georgia Pacific Way, and Feather River Road. SR 162 could also provide a detour route to and from SR 99. Any required road closures would be communicated in advance through outreach to residents and through the use of portable message signs, as specified Chapter 2.1.6, *Traffic and Transportation/Pedestrian and Bicycle Facilities*.

Potential Disproportionately High and Adverse Effects

The benefits of the proposed project would accrue to all roadway users, including local residents. Implementation of the build alternatives would improve the safety and efficiency of the roadway for all users of the transportation system, regardless of race, ethnicity, or income. Although substantial adverse impacts were not identified, minor impacts associated with construction-period delays, noise, and air quality would not be borne disproportionately by low-income and/or minority populations. As stated above, some structures are located within the assumed construction easement area, and thus may require relocation to allow construction work to take place. Final design of the project would make every effort to avoid acquisitions that would displace any structures. All property acquired, including residences, would be acquired and relocated within the surplus property area in a similar location and in accordance with the Uniform Relocation Act of 1970. Residents, including minority and low-income residents, that would be displaced as a result of the project would be displaced only temporarily and would be adequately compensated.

Based on the discussion and analysis above, neither the build alternatives nor the No-Build Alternative would result in disproportionately high and adverse effects on any minority or low-income populations in accordance with EO 12898.

Avoidance, Minimization, and Mitigation Measures

No avoidance, minimization, or mitigation measures are required to address impacts on low-income and/or minority populations. During the public circulation of this Draft Initial Study/Environmental Assessment, outreach efforts to reach minority and low-income individuals will be undertaken. Such efforts could include publication of meeting notices in non-English newspapers, direct mailers, and having translators available at public meetings as appropriate.

Based on the above discussion and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898 No further environmental justice analysis is required.

2.1.4.5 References Cited

Fehr & Peers. 2015. Traffic Operations Report for the State Route 70 (SR 70) Improvement Project in Butte County, CA.

ICF International. 2016a. Community Impact Assessment for the State Route 70 Corridor Improvements Project. December 2016.

———. 2016b. Noise Study Report for the State Route 70 Corridor Improvements Project. March 2016.

Newsum, Andy. Deputy Director. Butte County Association of Governments. Email to Lindsay Christensen on May 16, 2018.

United States Bureau of the Census. 2016. 2010–2014 American Community Survey. Table B03002, Table B01001, Table DP04, Table S1903, S1701. Available: https://www.census.gov/acs/www/data/data-tables-and-tools/subject-tables/. Accessed: June 7, 2016.

2.1.5 Utilities/Emergency Services

2.1.5.1 Affected Environment

Emergency Services

Police services in the study area are provided by the Butte County Sheriff's Department, and fire protection services are provided by the Butte County Fire Department, the Palermo Fire Department, the El Medio Fire Department, and the Gridley Fire Department. Table 2.1.5-1 shows the locations of emergency service provider facilities in the project vicinity, none of which are within a 0.5-mile radius of the project site.

Table 2.1.5-1. Emergency Service Providers in the Vicinity of the Project Site

Facility	Address	Location Relative to Project Site	Linear Distance from Proposed Project (miles)
Fire Protection			
Palermo Fire Station #72	2290 Palermo Road Tustin, CA 92782	Southeast of project site	3.2
El Medio Fire Department	3515 Myers Street Oroville, CA 95966	Northeast of project site	2.7
Gridley Fire Department	47 E Gridley Road Gridley, CA 95948	Southwest of project site	4.1
Butte County Fire	176 Nelson Avenue Oroville, CA 95965	Northwest of project site	9.9
Police Services			
Butte County Sheriff's Office	33 County Center Drive Oroville, CA 95965	North of project site	3.6

Sources: Butte County Sheriff-Coroner 2016; Butte County Fire Department 2016; El Medio Fire District 2016; Gridley Fire Department 2016; CAL FIRE 2016. Google Earth Pro.

Utilities

The study area contains telecommunications for AT&T, Comcast, South Feather Water and Power, and PG&E. Sewer utilities for Sewerage Commission-Oroville Region are also located along the project alignment. Overhead electric facilities may need to be relocated to accommodate the proposed improvements. Existing utility poles in Segment 2 would be relocated within the proposed right-of-way. Segment 1 has utilities that would have to be relocated outside the new state right-of-way as the classification of this segment of the corridor would be changed to an expressway. Underground utilities along the affected frontage roads would be relocated to the realigned frontage roads. The existing frontage road would require right-of-way acquisition to provide adequate utility corridor for overhead utilities. Utilities would be relocated prior to construction.

2.1.5.2 Environmental Consequences

Build Alternatives

Emergency Services

There may be temporary disruptions to the existing highway during the construction period, but detour routes would be available along Cox Lane, Palermo Road, Pacific Heights Road, Power House Hill Road, Ophir Road, Georgia Pacific Way, and Feather River Road. SR 162 could also provide a detour route to and from SR 99. Any required closures would be coordinated with emergency service providers so as not to hinder emergency responses, as specified in Section 2.1.5.3, *Avoidance, Minimization, and Mitigation Measures*. Project operation would improve traffic congestion and allow for formal passing opportunities. This would be safer, more reliable, and more efficient for emergency service providers and would be a benefit to those served by these providers.

Utilities

Existing utility pole encroachments in Segment 2 would be relocated within the proposed right-of-way. Segment 1 has utilities that would have to be relocated outside the new state right-of-way as the classification of the corridor will be changed to an expressway. Underground utilities along the frontage roads would be relocated to the realigned frontage roads. The existing frontage road would require right-of-way acquisition to provide adequate utility corridor for overhead utilities. Any required utility coordination and service disruptions would be minimized to the extent feasible and would be communicated with customers in advance of any disruption to allow for alternative service arrangements.

No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no relocation of utilities or impacts on community facilities or emergency services. However, in the long term, emergency response times may increase as traffic increases and levels of service decline.

2.1.5.3 Avoidance, Minimization, and/or Mitigation Measures

The following measure would minimize effects on emergency services during the construction period.

TRA-1: Prepare a Traffic Control Plan

The California Department of Transportation (Caltrans), in cooperation with the Butte County Association of Governments (BCAG), will prepare and implement a traffic control plan as part of the overall construction management plan. Contractor compliance with the traffic control plan will be required as part of the construction contracts and will be used throughout the course of project construction. The traffic control plan is described in Section 2.1.6.

2.1.5.4 References Cited

Butte County Fire Department. 2016. Butte County Fire North Division Home Page. Available: https://www.buttecounty.net/fire/Operations/North. Accessed: February 2, 2016.

Butte County Sheriff-Coroner. 2016. Butte County Sheriff-Coroner Home Page. Available: https://www.buttecounty.net/sheriffcoroner/Home.aspx. Accessed: February 2, 2016

CAL FIRE. 2016. CAL FIRE Contacts for Station #72 (Palermo). Available: http://www.calfire.ca.gov/contacts/station?SID=679. Accessed: February 2, 2016.

El Medio Fire District. 2016. El Medio Fire District Home Page. Available: http://www.elmediofire.com/. Accessed: February 2, 2016.

Gridely Fire Department. 2016. Gridely Fire Department Home Page. Available: http://www.gridley.ca.us/city-departments/fire-department. Accessed: February 2, 2016.

2.1.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.1.6.1 Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicycles during the development of federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). FWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

2.1.6.2 Affected Environment

Traffic

A Draft Traffic Operations Report was completed in September, 2015 (Fehr & Peers, 2015). The study area focuses on SR 70 from East 24th Street in Marysville to Ophir Road in Oroville. SR 70 is a north-south two-lane conventional highway that serves as a transportation corridor for the eastern Sacramento Valley. Key roadways and intersections in the study area are:

- SR 70 and Ophir Road
- SR 70 and Palermo Road
- SR 70 and Power House Hill Road
- SR 70 and Cox Lane

To measure the operational status of the local roadway network, transportation engineers and planners use a grading system called level of service (LOS). Level of service is a description of the quality of operation of a roadway segment or intersection, ranging from LOS A (for free-flowing traffic with little to no delay) to LOS F (where traffic in excess of capacity introduces significant delays). Level of service policies vary within the study area. Caltrans has established route concept LOS thresholds of LOS D for SR 70 from East 24th Street to the Butte/Yuba County line and LOS E for SR 70 from the Butte/Yuba County line to 0.6 miles south of SR 162.

Under existing conditions, the signalized intersection of SR 70/Ophir Road operates within acceptable LOS D conditions during both morning and evening peak hours. In addition, the unsignalized side-street stop controlled intersections at Palermo Road, Power House Hill Road, and Cox Lane would operate at LOS C conditions or better for the entire intersection and minor street critical movements. Table 2.1.6-1 summarizes the existing LOS conditions at key intersections

Table 2.1.6-1. Existing Intersection Conditions

		AM Peak Hour			PM Peak Hour		
Intersection	Control	Approach	Delay (sec/veh)	LOS	Approach	Delay (sec/veh)	LOS
SR 70 and Ophir Road	Traffic signal	Intersection	41.1	D	Intersection	30.5	C
SR 70 and Palermo Road	Side-street stop	EB LT/TH	15.9	C	EB RT	14.8	B
		WB LT/TH	18.5	C	WB LT/TH	20.6	C
		NB LT	10.3	B	NB LT	8.7	A
		SB LT	8.9	A	SB LT	9.0	A
		Entire	2.7	A	Entire	2.1	A
SR 70 and Power House Hill Road	Side-street stop	WB LT/RT	15.8	C	WB LT/RT	29.6	D
		SB LT	0.0	A	SB LT	0.0	A
		Entire	0.2	A	Entire	0.1	A
SR 70 and Cox Lane	Side-street stop	EB LT/RT	0.0	A	EB LT/RT	0.0	A
		WB LT/RT	12.6	B	WB LT/RT	12.2	B
		NB LT	0.2	A	NB LT	0.0	A
		SB LT	8.5	A	SB LT	9.1	A
		Entire	0.5	A	Entire	0.2	A

Note: Shaded cells indicate approaches with unacceptable LOS.

The queueing analysis shows that traffic at the SR 70/Ophir Road intersection exceeds available storage for the eastbound and westbound left-turn lanes during both the morning and evening peak hours. The eastbound left-turn lane has 60 feet of available storage but queue lengths of 346 feet during the morning peak hour and 231 feet during the evening peak hour. The westbound left-turn lane has 100 feet of available storage with queue lengths of 120 feet during the morning peak hour and 158 during the evening peak hour. Table 2.1.6-2 summarizes the intersection queueing under existing conditions.

Table 2.1.6-2. Existing Intersection Queueing

Intersection	Movement	Available Storage (feet)	AM Peak Hour Max. Queue (feet)	PM Peak Hour Max. Queue (feet)
SR 70 and Ophir Road	EB LT	60	346	231
	EB TH	125	80	81
	WB LT	100	120	158
	WB TH	325	196	187
	NB LT	410	0	19
	NB TH	2,400	481	494
	NB RT	410	32	40
	SB LT	465	251	281
	SB TH	5,000	110	264
SR 70 and Palermo Road	EB TH	125	12	10
	WB TH	2,600	31	28
	NB LT	285	3	2
	SB LT	405	1	2
SR 70 and Power House Hill Road	WB LT/RT	2,600	2	3
	SB LT	435	0	0
SR 70 and Cox Lane	EB LT/RT	1,100	0	0
	WB LT/RT	4,650	5	2
	NB LT	270	0	0
	SB LT	270	1	0

Without the project, in construction year 2020, the SR 70/Ophir Road intersection would operate at an unacceptable level of service during the morning peak hour. At the intersection of SR 70 and Palermo Road, the westbound left-turn and through lanes would operate at LOS F during the evening peak hour. Table 2.1.6-3 summarizes the levels of service projected for each intersection with and without the project.

Table 2.1.6-3. Construction Year (2020) Intersection Conditions

		Without Project					With Project				
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
Intersection	Approach	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR 70 and Ophir Road	All	Traffic signal	82.4	F	52.5	D	Traffic signal	26.1	C	23.4	C
SR 70 and Palermo Road	EB	Side-street stop	21.2	C	24.3	C	Traffic signal	13.7	B	12.0	B
	WB		36.1	E	74.	F					
	NB		10.7	B	9.5	A					
	SB		9.4	A	9.6	A					
	Entire		5.9	A	7.9	A					
SR 70 and Power House Hill Road	NB	Side-street stop	–	–	–	–	Side-street stop	16.1	C	27.3	D
	WB		20.2	C	44.8	E		0.0		0.0	
	SB		9.0	A	9.8	A		9.0	A	9.9	A
	Entire		0.4	A	0.4	A		0.3	A	0.3	A
SR 70 and Cox Lane	EB	Side-street stop	12.9	B	14.7	B	Side-street stop	12.9	B	14.6	B
	WB		14.2	B	15.4	C		14.2	B	15.4	C
	NB		8.8	A	0.0	A		8.8	A	0.0	A
	SB		9.0	A	9.8	A		9.0	A	9.8	A
	Entire		0.6	A	0.3	A		0.6	A	0.3	A

Note: Shaded cells indicate approaches with unacceptable LOS.

The queuing analysis shows that traffic at the SR 70/Ophir Road intersection would exceed available storage for both the eastbound and westbound directions. The eastbound left-turn lane has 60 feet of available storage but would have queue lengths of 699 feet during the morning peak hour and 441 during the evening peak hour. The eastbound through and right-turn lane has 125 feet of available storage but would have queue lengths of 156 feet during the morning peak hour and 174 feet during the evening peak hour. The westbound left-turn lane has 100 feet of available storage but would have queue lengths of 127 feet during the morning peak hour and 213 feet during the evening peak hour. The westbound through and right-turn lane has 325 feet of available storage but would have queue lengths of 506 feet during the morning peak hour and 496 feet during the evening peak hour. Table 2.1.6-4 summarizes projected intersection queueing with and without the project.

Table 2.1.6-4. Construction Year (2020) Intersection Queueing

		Without Project			With Project		
Intersection	Movement	Available Storage (feet)	AM Peak Hour Max. Queue (feet)	PM Peak Hour Max. Queue (feet)	Available Storage (feet)	AM Peak Hour Max. Queue (feet)	PM Peak Hour Max. Queue (feet)
SR 70 and Ophir Road	EB LT	60	699	441	210	232	136
	EB TH	125	156	174	320	104	117
	EB RT				25	0	0
	WB LT	100	127	213	160	60	93
	WB TH	325	506	496	325	112	128
	WB RT				600	62	58
	NB LT	410	20	33	410	19	30
	NB TH	2,400	551	642	2,400	249	268
	NB RT	410	44	44	410	50	48
	SB LT	465	387	422	465	152	453
	SB TH	5,000	160	401	5,000	145	277
	SB RT	–	–	–	465	51	65
SR 70 and Palermo Road	EB LT	125	33	45	100	16	9
	EB TH				1,000	42	42
	EB RT	–	–	–	25	0	0
	WB LT	2,600	93	142	200	84	63
	WB TH				2,600	34	42
	WB RT				25	0	0
	NB LT	285	7	7	285	66	76
	NB TH	–	–	–	975	170	206
	NB RT	–	–	–	285	24	29
	SB LT	405	1	2	405	22	33
	SB RT	–	–	–	5,600	174	221
SR 70 and Power House Hill Road	WB LT/RT	2,600	7	14	2,600	5	8
	SB LT	435	0	1	435	0	1
SR 70 and Cox Lane	EB LT/RT	1,100	2	2	1,100	2	2
	WB LT/RT	4,650	6	5	4,650	6	5
	NB LT	270	1	0	270	1	0
	SB LT	270	1	1	270	1	1

Note: Shaded cells indicate movements with queue lengths exceeding storage capacity.

Without the project, in horizon year 2040, one signalized intersection would operate entirely at an unacceptable level of service during both the morning and evening peak hours. In addition, two side-street stop controlled intersections would operate at an unacceptable level of service for some movements during both the morning and evening peak hours. The SR 70/Ophir Road intersection would operate at LOS F. The SR 70/Palermo Road intersection would operate at LOS F for eastbound and westbound traffic during both the morning and evening peak hours. The SR 70/Power House Hill Road intersection would operate at LOS F for westbound traffic during both the morning and evening peak hours. Table 2.1.6-5 summarizes the levels of service projected for each intersection with and without the project.

Table 2.1.6-5. Horizon Year (2040) Intersection Conditions

		Without Project					With Project				
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
Intersection	Approach	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR 70 and Ophir Road	All	Traffic signal	>160	F	150.7	F	Traffic signal	33.6	C	33.0	C
SR 70 and Palermo Road	EB	Side-street stop	75.7	F	>150	F	Traffic signal	22.1	C	22.0	C
	WB		>150	F	>150	F					
	NB		13.0	B	13.7	B					
	SB		11.5	B	12.2	B					
	Entire		127.2	F	>150	F					
SR 70 and Power House Hill Road	WB	Side-street stop	56.5	F	>150	F	Side-street stop	34.0	D	138.2	F
	SB		11.3	B	14.1	B		11.3	B	14.1	B
	Entire		0.7	A	4.2	A		0.4	A	1.0	A
SR 70 and Cox Lane	EB	Side-street stop	16.2	C	25.2	D	Side-street stop	16.2	C	25.1	D
	WB		21.2	C	25.8	D		21.2	C	25.8	D
	NB		0.4	A	0.7	A		9.9	A	12.6	B
	SB		10.7	B	13.4	B		10.7	B	13.4	B
	Entire		0.6	A	0.6	A		0.6	A	0.5	A

Note: Shaded cells indicate approaches with unacceptable LOS.

The queuing analysis shows that traffic at the SR 70/Ophir Road intersection would exceed available storage for some southbound movements and for all eastbound and westbound movements. In addition, traffic at the SR 70/Palermo Road intersection would exceed available storage for both eastbound and westbound traffic during the evening peak hour. At SR 70/Ophir Road, the eastbound left-turn lane has 60 feet of available storage but would have queue lengths of 827 feet during the morning peak hour and 561during the evening peak hour. The eastbound through and right-turn lane has 125 feet of available storage but would have queue lengths of 160 feet during the morning peak hour and 174 feet during the evening peak hour. The westbound left-turn lane has 100 feet of available storage but would have queue lengths of 127 feet during the morning peak hour and 521 feet during the evening peak hour. The westbound through and right-turn lane has 325 feet of available storage but would have queue lengths of 746 feet during the morning peak hour and 857 feet during the evening peak hour. At SR 70/Palermo Road, the eastbound left-turn and through lane has 125 feet of available storage but would have a queue length of 196 feet during the evening peak hour. The westbound left-turn and right-turn lane has 2,600 feet of available storage but would have a queue length greater than 2,600 feet. Table 2.1.6-6 summarizes projected intersection queueing with and without the project.

Table 2.1.6-6. Horizon Year (2040) Intersection Queueing

		Without Project			With Project		
Intersection	Movement	Available Storage (feet)	AM Peak Hour Max. Queue (feet)	PM Peak Hour Max. Queue (feet)	Available Storage (feet)	AM Peak Hour Max. Queue (feet)	PM Peak Hour Max. Queue (feet)
SR 70 and Ophir Road	EB LT	60	827	561	210	248	140
	EB TH	125	160	174	320	111	126
	EB RT				25	0	0
	WB LT	100	127	521	160	61	175
	WB TH	325	746	857	325	119	134
	WB RT				600	278	305
	NB LT	410	33	33	410	31	31
	NB TH	2,400	774	1,209	2,400	325	428
	NB RT	410	58	92	410	68	63
	SB LT	465	781	741	465	281	234
	SB TH	5,000	202	598	5,000	184	421
	SB RT				465	50	64
SR 70 and Palermo Road	EB LT	125	104	196	100	16	9
	EB TH				1,000	42	43
	EB RT				25	0	0
	WB LT	2,600	712	>2,600	200	178	151
	WB TH				2,600	33	43
	WB RT				25	0	0
	NB LT	285	30	35	285	189	190
	NB TH	–	–	–	975	261	344
	NB RT	–	–	–	285	36	43
	SB LT	405	2	3	405	22	33
	SB TH	–	–	–	5,600	228	483
SR 70 and Power House Hill Road	WB LT/RT	2,600	22	81	2,600	13	45
	SB LT	435	1	2	435	1	2
SR 70 and Cox Lane	EB LT/RT	1,100	3	4	1,100	3	4
	WB LT/RT	4,650	11	14	4,650	11	14
	NB LT	270	1	2	270	1	2
	SB LT	270	1	2	270	1	2

Note: Shaded cells indicate movements with queue lengths exceeding storage capacity.

Transit Service and Bicycle/Pedestrian Facilities

Bicycle traffic is not prohibited on SR 70 through the project area. There is no designated bicycle facility on the corridor and no parallel facility present. Given the rural location of the project, the large distances between destination points, and the lack of formal facilities such as sidewalks and bike lanes, bicycle and pedestrian travel is not a common mode of transportation in the study area except for the approximately 0.6 mile stretch of SR 70 that runs through a small portion of Palermo. In this area, some limited local pedestrian travel occurs along the shoulder of, and across, SR 70.

B-Line Butte Regional Transit operates one bus line within the study area, the 30 bus line, which travels from Biggs to the southwest of the study area to Oroville to the north of the study area. Within the study area, the Route 30 bus travels on SR 70 from the southern project limits to Palermo Road, before bearing eastbound on Palermo Road. The only bus stops in the study area are located on either side of SR 70 approximately 200 feet south of Palermo Road. As stated in Chapter 2.1.4, Community Impacts, transit activity in the study area is low. Bus Line 30 runs through the area, and bus stop B498 is located near the intersection of SR 70 and Palermo Rd. Current ridership at this stop is one person, who does not use the stop daily, but approximately 2-3 times per week. Upgrades of pedestrian, bicycle, and transit facilities in the study area are not currently warranted due to low pedestrian and transit activity (Newsum pers. comm.).

2.1.6.3 Environmental Consequences

Effects of the Build Alternatives

With the project, in construction year 2020, all study intersections would operate at acceptable levels of service during both the morning and evening peak hours. The queueing analysis also shows that only one movement would have a queue length greater than available storage. At SR 70/Ophir Road, the eastbound left-turn lane would have 210 feet of available storage but would have queue lengths of 232 feet during the morning peak hour.

As compared to conditions without the project in the construction year, SR 70/Ophir Road would improve to LOS C. SR 70/Palermo Road would operate at LOS B overall with a new signalized intersection, and two other intersections would remain at LOS A. Available storage would be sufficient for 7 additional intersection movements and the excess queue length for the SR 70/Ophir Road eastbound left-turn movement during the morning peak hour would be reduced from 669 feet to 22 feet.

With the project, in horizon year 2040, all study intersections would operate at acceptable levels of service during both the morning and evening peak hours. The queueing analysis also shows that two movements would have a queue length greater than available storage. At SR 70/Ophir Road, the eastbound left-turn late would have 210 feet of available storage but would have a queue length of 248 feet during the morning peak hour and the westbound left-turn lane would have available storage of 160 feet but would have a queue length of 175 feet during the evening peak hour.

As compared to conditions without the project in the horizon year, SR 70/Ophir Road and SR 70/Palermo Road would both improve to LOS C, while two other intersections would remain at LOS A. Available storage would be sufficient for 10 additional intersection movements. At SR 70/Ophir Road, the excess queue length for the eastbound left-turn movement during the morning peak hour would be reduced from 767 feet to 38 feet and the queue length for the westbound left-turn movement during the evening peak hour would be reduced from 421 feet to 15 feet.

Temporary Construction Impacts

During construction, accessibility for vehicles may be affected. Travel lane and sidewalk closures may occur during various phases of construction, resulting in detours and temporary traffic delays associated with the construction period. Local streets and State Route 70 would be temporarily affected during construction to allow contractor access and construction tasks. The project includes traffic control plan measures to ensure access during construction, this impact would be minimized.

Transit and Bicycle/Pedestrian Facilities

The proposed project provides no new pedestrian or bicycle facilities. Bicycle traffic would continue to be permitted on SR 70 and local roadways.

Effects of the No-Build Alternative

The effects under the No-Build Alternative are discussed in existing conditions. Under the No-Build Alternative, traffic patterns would not change and roadway capacity would not accommodate future traffic levels. In 2020, the westbound left-turn movement at SR 70/Ophir Road would operate at an unacceptable level of service. In 2040, three intersections would operate in whole or in part at an unacceptable level of service.

Construction-related traffic effects would not occur.

2.1.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will reduce potential impacts on traffic during construction. The Traffic Control Plan prepared and implemented under TRA-1 will provide controlled access through the work site during construction. Although traffic will be slowed during construction, continuous access will be provided. This will avoid significant effects that could result from traffic stoppage, such as interruption of emergency access or access to residences and commercial businesses. Measure TRA-2 will ensure that bicycle and pedestrian traffic, although low in volume, will have safe access through the work site. This will avoid significant effects to pedestrians or cyclists that will use SR-70 during the construction period.

TRA-1: Prepare a Traffic Control Plan

Caltrans, in cooperation with the Butte County Association of Governments, will prepare and implement a traffic control plan as part of the overall construction management plan. Contractor compliance with the traffic control plan will be required as part of the construction contracts and will be used throughout the course of project construction. The traffic control plan will include, but will not be limited to, the following elements:

- Advance notice will be provided to transit operators, emergency service providers, businesses, and residences of construction work, any anticipated delays, and temporary road closures.
- When traffic control measures occur, advance notice will be provided to local fire and police departments to ensure that alternate evacuation and emergency routes are designed to maintain response times.
- Vehicular access to driveways and private roads will be maintained to the extent possible and compensation will be afforded by Caltrans and BCAG for loss of access.
- Existing non-motorized access or detours and warning signs will be maintained at all times.
- Parked construction-related vehicles will not disrupt automobile, bicycle, or pedestrian traffic.
- Traffic controls will be used in the construction area if the normal traffic flow is affected by construction activities. Such controls may include flag persons wearing safety gear consistent with current codes of safe practices using a “Stop/Slow” paddle to control oncoming traffic.

- Traffic controls will be used at haul route crossings. Controls may include flag persons wearing safety gear consistent with current codes of safe practices using a "Stop/Slow" paddle to control oncoming traffic.
- Signs giving advance notice of upcoming construction activities will be posted at least 1 week in advance to that motorists, if they choose, can avoid traveling through the project area during these times.
- Construction warning signs will be posted in accordance with local standards or those set forth in the Manual on Uniform Traffic Control in advance of the construction area and at any intersection that provides access to the construction area.
- Written notification will be provided to contractors regarding appropriate routes to and from the construction site, plus the weight and speed limits on local roads used to access the construction site.

TRA-2: Provide Pedestrian and Bicycle Access during Construction

All detours or roadways that permit bicycle and pedestrian modes of travel will include provisions for pedestrian and bicycle access during construction. Bicycle or pedestrian detour routes may deviate from traffic detour routes where a more appropriate route is available.

2.1.6.5 References Cited

Fehr & Peers. 2015. Traffic Operations Report for the State Route 70 (SR 70) Improvement Project in Butte County, CA.

Newsum, Andy. Deputy Director. Butte County Association of Governments. Email to Lindsay Christensen on May 16, 2018.

2.1.7 Visual/Aesthetics

2.1.7.1 Regulatory Setting

Federal and State

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest, taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (California Public Resources Code [PRC] Section 21001[b]).

There are no roadways within or near the project area that are designated in federal or state plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds (California Department of Transportation 2016a). No other federal or state regulations apply to visual resources within the project area.

Regional and Local

Butte County General Plan

Area and Neighborhood Plan Element

The Butte County General Plan, Area and Neighborhood Plan Element (Butte County 2010) contains the following goal and policy relevant to the project and aesthetics.

- **Goal D2N-5:** Protect and maintain areas of native vegetation which include riparian forest, valley freshwater marsh, valley oak woodland, vernal pools, annual grasslands and designated natural areas. Such areas deserve protection as part of the heritage of the communities, for the way such areas add to the aesthetic environment, and as important examples of the diversity of habitats and the wildlife they support within the Planning Area and the State.
- **D2N-P9.4:** Provide for the protection of visually appealing features of the community that enhance the residents' perception of the local environment and evoke community pride.

Conservation and Open Space Element

The Butte County General Plan, Conservation and Open Space Element (Butte County 2010) contains the following goals and policies relevant to the project and aesthetics.

- **COS-A7.4:** Seek funding to conduct a study to develop an approach to protecting significant specimen trees and tree groves.
- **Goal COS-8:** Maintain and promote native vegetation

- **COS-P8.1:** Native plant species shall be protected and planting and regeneration of native plant species shall be encouraged, wherever possible, in undisturbed portions of development sites.
- **COS-P8.2:** New landscaping shall promote the use of xeriscape and native tree and plant species, including those valued for traditional Native American cultural uses.
- **COS-P8.3:** Native plants shall be used wherever possible on County owned and controlled property.
- **COS-P8.5:** Introduction or spread of invasive plant species during construction of development projects shall be avoided by minimizing surface disturbance; seeding and mulching disturbed areas with certified weed-free native mixes; and using native, noninvasive species in erosion control plantings.
- **COS-A16.2:** Compile an inventory of specific viewsheds of cultural importance to Native Americans.
- **COS-A16.3:** Consult with local tribes on species to be included in a list of native tree and plant species for use in required landscaping for new development projects.
- **Goal COS-17:** Maintain and enhance the quality of Butte County's scenic and visual resources.
- **COS-P17.1:** Views of Butte County's scenic resources, including water features, unique geologic features and wildlife habitat areas, shall be maintained.
- **COS-P17.2:** Ridgeline development near scenic resources shall be limited via the adoption of specific development guidelines in order to minimize visual impacts.
- **Goal COS-18:** Protect and enhance scenic areas adjacent to and visible from highways for enjoyment by residents and visitors.
- **COS-P18.1:** The County shall designate scenic corridors based on careful consideration of the following factors:
    - Relationship to the scenic highway system, including proximity to urban population centers, gateways, integration with other highways and scenic highways and access to major recreation areas.
    - Safety characteristics, including road surface and alignment, shoulder width, traffic levels, number of intersections, access points, turnouts and rest areas.
    - Scenic characteristics, including vista points, geologic resources, native plant and animal species, waterways, historic resources and agricultural, timber and recreation uses.
    - Government policies, including public lands, eligibility for State scenic highway designation, and consistency with other Butte County General Plan 2030 elements.
    - Economic impacts on properties affected by a scenic highway designation.
- **COS-P18.2:** To enhance safety on scenic highways, the County shall limit access, using existing access where feasible, and limit encroachment permits.
- **COS-P18.3:** The County shall require utility companies to choose the least conspicuous locations for distribution lines, so as to avoid impacts to scenic corridors where there is reasonable choice.

Circulation Element

The Butte County General Plan, Circulation Element (Butte County 2010) contains the following policies relevant to the project and aesthetics.

- **CIR-P6.3:** Project approval shall be conditioned on the provision of roadway improvements to meet the level of service standards in policies CIR-P6.1 and CIR-P6.2. Exceptions to satisfying the level of service standards and/or constructing transportation facilities to the County's design standards may be allowed on a case-by-case basis where reducing level of service or not constructing a transportation facility to County standards would result in a clear public benefit. Such circumstances may include, but are not limited to the following:
    - Conserving agricultural or open space land.
    - Enhance the agricultural economy.
    - Protect scenic roadways or highways.
    - Preserve downtown community environments.
- **CIR-P3.10:** Trees located along urban streets shall be protected. If maintenance or upgrading requires tree removal, the trees shall be replaced.

2.1.7.2 Affected Environment

This section was prepared using information from the *Visual Impact Assessment* (VIA) technical report prepared for the project (ICF International 2016a). The VIA assesses potential visual impacts of the proposed project based on guidance outlined in the *Visual Impact Assessment for Highway Projects* published by the FHWA (1988). The following key terms describe visual resources in a project area. The terms are used as descriptors and as part of a rating system to assess a landscape's visual quality.

- *Visual character* includes attributes such as form, line, color, and texture and is used to describe, not evaluate visual resources.
- *Visual quality* is evaluated by identifying the vividness, intactness, and unity present in the project area.
- *Vividness* is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- *Intactness* is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- *Unity* is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

Resource change is one of the two major variables that determine visual impacts. Resource change refers to the evaluation of the visual character and the visual quality of the visual resources that comprise the project corridor before and after construction of a proposed project. The other major variable is *viewer response*, the response of viewers to changes in their visual environment.

Project Setting

The project setting provides the context for determining the type and severity of changes to the existing visual environment. The proposed project is located on SR 70, generally between Cox Lane and Ophir Road, just south of Oroville, in Butte County, California. The project is in northern Sierra Nevada Foothills biogeographic province, just east of the transition from the northern Sacramento Valley. The landscape is characterized by grassy pastures and open space lands, orchards, and rural landscaping over terrain that varies from flat to very gently rolling. The land uses within the project corridor are primarily open space; pastures, orchards, and associated buildings; mostly single-family rural residences; several commercial businesses (e.g., Western Tree & Feather River Wholesale Nurseries and Falling Rock Mini Mart & R.V. Park); and SR 70, adjoining local roadways, and associated signage.

The project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance. The project vicinity consists of pastures and open space lands that abut much of the project corridor, which are intermixed with orchards and groupings of low-density, rural development at the town of Oak Grove, and is in proximity to Western Tree & Feather River Wholesale Nurseries. The Butte County General Plan Conservation and Open Space Element recognizes that flowering orchards are a seasonal scenic resource (Butte County 2010:262). The majority of the roadway is flat until approximately post mile 11.25, where it slopes down toward Ophir Road. Pasture lands allow for scenic vista views out and over these open lands in the foreground toward background views of Table Mountain to the north, the Sierra Nevada Mountains to the east, and the Sutter Buttes to the southwest. In addition, limited scenic vista views of the Coast Ranges are available to the west. Where present, orchards, mature trees, and buildings may partially or fully limit such views.

Much of this segment of SR 70 does not have street lighting except at the SR 70 intersection with Ophir Road, which is signalized and lit. Views from the Feather River toward the project site do not exist due to intervening vegetation and development. Driveway access for the Oroville Wildlife Area, a Section 4(f) property, is located off of SR 70 within the project area. However, views from the Oroville Wildlife Area toward the project site are only available where the entry drive meets SR 70, and views from the interior of the preservation area do not exist due to intervening vegetation and development. There are no roadways within or near the project area that are designated in federal, state, or local plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds (California Department of Transportation 2016a). Therefore, implementation of the proposed project would not damage scenic resources, such as trees, rock outcroppings, and historic buildings along a scenic highway.

Viewers

Neighbors (people with views *to* the road) and *highway users* (people with views *from* the road) would be affected by the proposed project. Neighbors consist of rural residents, employees and patrons at nearby businesses, and agricultural workers who are located on or work the lands immediately bordering the project corridor. Neighbors also include roadway users connecting to the project corridor from local roadways. Residents and business occupants are considered to have high visual sensitivity because while they are accustomed to views of the existing roadway and passing traffic, they generally view the project site for an extended period, are likely to have a high sense of ownership over local views, and are more likely to be affected by changes in the views from their homes or businesses than business patrons or agricultural workers. Business patrons and

agricultural workers are likely to have moderately low visual sensitivity due to their intermittent and limited views of the corridor, seen while generally more focused on working agricultural lands or visiting a business. Highway users include local commuters traveling to and from work, shoppers, recreational travelers, agricultural transporters, and haulers in vehicles on SR 70 that travel at speeds ranging from a stop to approaching 65 miles per hour (the posted speed limit is 55 miles per hour). Depending on speed, drivers and passengers are able to take in brief to longer views of the scenery around them. Sections of the roadway are more open and provide scenic vista views of the surrounding area. Therefore, highway users are considered to have moderately high visual sensitivity. It is anticipated that the average response of all viewer groups would be moderately high.

2.1.7.3 Environmental Consequences

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. As discussed in Project Setting above, there are no officially designated scenic roadways within or near the project corridor. Therefore, implementation of the proposed project would not damage scenic resources, such as trees, rock outcroppings, and historic buildings along a scenic highway.

No-Build Alternative

This document considers the potential impacts of a No-Build Alternative. Under the No-Build Alternative, the project would not be constructed and there would be no visual impacts on the existing visual character, visual quality, or affected viewer groups.

Build Alternatives

The proposed project and its alternatives comprise two segments, which, once built, would seamlessly blend and be one continuous roadway corridor. As described in Chapter 1, Project Description, the three build alternatives have the same footprint and are visually the same for Segment 1. Segment 2 would have the same type of roadway profile and look the same under all alternatives, once built. The primary difference between the alternatives is where the widening would occur. In Segment 2, Alternative 1 holds the easterly edge of pavement and widens to the west, Alternative 2 holds the westerly edge of pavement and widens to the east, and Alternative 3 widens symmetrically on both sides of SR 70. Widening would result in similar impacts on agricultural lands under all alternatives in Segment 2. Therefore, the primary visual difference in Segment 2 would be visual impacts during construction on properties that are developed with landscaping, structures, fences, and other built features alongside the existing right-of-way and that would be affected under the different alternatives. Because the alternatives would be visually similar, once built, operational impacts are discussed together below. Similar visual impacts that would result from construction occurring in Segments 1 and 2 for all alternatives are also discussed together. However, the visual impacts that differ from construction in the segments and under the various alternatives are grouped or separated out and discussed accordingly.

Visual Character and Visual Quality, including Scenic Vistas

Construction

Segments 1 and 2—All Alternatives

Construction equipment would include graders, excavators, drilling rigs, cranes, pavers, compactors, and various types of construction vehicles. General construction activities, construction staging/stockpiling, the storage of road-widening/building materials, the presence of construction equipment, and temporary traffic barricades would result in temporary construction impacts by altering the composition of the view available from and to the project corridor. Residences would have construction occurring close by, with some having construction activities occurring directly in front of their homes. These residents would experience disruptive construction activities that may evoke a sense of invaded privacy. Construction of Segment 1 would start in the spring of 2018, and construction of Segment 2 would follow in the spring of 2020, with each segment taking approximately 18 months. Therefore, construction of the segments would appear to be two separate projects happening shortly one after the other, with an approximate 6-month break between. Because each segment would take less than 2 years to construct, the visual presence of construction activities is considered temporary.

The active construction and staging areas would be on undeveloped grassland, and, for the most part, no trees would be affected except for those on the staging area proposed on the west side of SR 70, opposite Oakwood Lane. Proposed Avoidance and Minimization Measures would avoid and protect trees in staging areas during construction. Temporary visual changes from construction signaling, signage, and lighting would occur, though they are not considered to be adverse.

Roadside grading, including cut and fill, would require erosion control measures to vegetate exposed soils. As described in Chapter 1, Project Description, the improvements to the highway are required to comply with the California Department of Transportation's (Caltrans') *Highway Design Manual* (HDM), which utilizes Context Sensitive Solutions consistent with Director's Policy DP-22 (California Department of Transportation 2016b). This includes implementing Design Standards 304.1, *Side Slope Standards*; 304.4, *Contour Grading and Slope Rounding*; and 902.1, *Design Considerations, Aesthetics* from the HDM. These design standards require that slopes be graded to 4:1 or flatter; gentle, smooth, and well transitioned with slope rounding and topsoil replacement; have flowing contours that tie gracefully into the existing adjacent roadside and landforms; rock cut slopes be irregular where possible for a natural appearance, with rounding of the tops and ends of cut slopes; and that steep, obvious cuts and fills be avoided to improve project aesthetics associated with roadside slopes. In addition, these design standards require that replanting reflect adjacent communities and natural surroundings, serve as a visual buffer for objectionable views of the highway facility for adjacent land uses, soften visual impacts associated with graded slopes and large structures; and act to frame or enhance good views (California Department of Transportation 2016c). Consistent with these standards, the proposed project would have side slopes that would be 6:1 or flatter in most locations except where right-of-way acquisitions need to be minimized and the slopes will be 4:1 or flatter. In addition, as also described in Chapter 1, a design exception may be requested to keep side slopes (less than 4:1) in place along the east side of SR 70 within Segment 1. Compliance with these HDM design standards would aid in minimizing visual impacts associated with roadside grading and slopes. Avoidance and Minimization Measures would provide visual interest and enhance roadside aesthetics by adding wildflowers to erosion control seed mix that would be applied to disturbed areas. In addition, as described in the *Draft Natural Environment*

Study (NES), construction would require the removal of oak trees and valley foothill riparian vegetation, and compensatory mitigation in Section 2.3.3 specifies that replacement may occur on site.

The proposed project involves widening SR 70 from two to four lanes, and construction would require the acquisition of lands for construction, to accommodate the widened roadway and right-of-way, which would remove formal and informal landscaping, orchards, fencing, and mailboxes, and alter entry drives at the affected properties. These visual features contribute to providing an attractive appearance along SR 70, especially where vegetation provides seasonal interest such as in the spring when orchards are blooming. These impacts are discussed in more detail below by segment. However, Avoidance and Minimization Measures would lessen impacts to affected properties to the degree possible.

Culvert widening and utility relocations would appear similar under all alternatives and would only result in minor visual changes as the modifications are occurring. Scenic vista views would not be affected during construction.

Segment 1—All Alternatives

In Segment 1, all alternatives would require tree and shrub removal during construction at the following locations.

- In proximity to the Ophir Road intersection, along Pacific Heights Road, between Feather River Boulevard and SR 70, and south of Ophir Road.
- West of SR 70, growing in the tailings.
- West of SR 70, on the Dingerville USA property.
- Northwest of the Pacific Heights Road and Welsh Road intersection.

Construction activities would remove mature trees, which are considered to be an attractive visual resource. Avoidance and minimization measures specified in Section 2.3.3 would avoid and minimize potential disturbance of woody vegetation, compensate for the permanent loss of oak woodland, and compensate for the permanent loss of valley foothill riparian. Some of these replacement plantings may be planted on site, helping to improve project aesthetics. However, plantings may also occur at offsite locations.

Pacific Heights Road would be realigned to construct the intersections at Ophir Road and Welsh Road. Near Ophir Road, the realignment would affect the driveway access for the property just northwest of the intersection and would only affect a small number of trees. Near Welsh Road, the relocation would cut through the orchard for a short distance before it conforms back to the existing alignment. The orchard would be removed within the right-of-way to accommodate the realignment at this location. In addition, four drive entrances would be set back slightly between Ophir Road and Welsh Road, resulting in only very minor visual changes during construction. The remainder of the corridor widening would only affect open space grassland areas. No residential or business relocations would be required along Segment 1 under all alternatives. Avoidance and Minimization Measures would provide visual interest and enhance roadside aesthetics by adding wildflowers to the erosion control seed mix that would be applied to disturbed areas, and Avoidance and Minimization Measures would reduce impacts on affected properties to the degree possible.

Segment 2—All Alternatives

Most of Segment 2 consists of pasture lands and a small amount of orchard production. The exception is two areas of rural development that occur between Stations 260+00 and 316+00 and within Oak Grove between Stations 370+00 and 400+00. Therefore, construction along much of Segment 2 would only affect open space grassland areas and small portions of orchards under all alternatives. Also, a narrow hedgerow of trees that is located on the east side of SR 70 between Stations 319+50 and 335+00 and south of Power House Hill Road would need to be removed under Alternatives 2 and 3. Several drive entrances accessing pastures and orchards would need to be set back slightly between the southern project terminus and Station 260+00 and also between Stations 316+00 and 370+00, and would result in only very minor visual changes during construction.

Developed properties occurring between Stations 260+00 and 316+00 and within Oak Grove would be permanently affected under all alternatives. At a minimum, most properties fronting SR 70 would have mature trees and shrubs removed along the front of their properties. For many of these properties, this landscaping provides a visual buffer between SR 70 and their homes. In addition, many of these properties have some form of fencing (e.g., chain link, post and wire) that would need to be relocated.

Between Stations 260+00 and 316+00, developed properties on the west side of SR 70 would be the least affected under Alternatives 1 and 3 because although they would have vegetation removal and fence relocations, only one steel beam structure would be affected (assessor parcel number [APN] 025-160-125-000). This structure would not be affected under Alternative 2. Properties on the east side of SR 70 would be impacted to a greater degree than the west side under Alternatives 2 and 3, because three houses (one on APN 025-160-117-000 and two on APN 025-160-112-000) would be permanently affected under Alternative 2, and two of the same houses would be affected under Alternative 3 (one on APN 025-160-117-000 and one on APN 025-160-112-000). None of these structures would be affected under Alternative 1. Under Alternative 2, one trailer (APN 025-160-119-000) would be temporarily affected under Alternative 2 but would remain on the parcel. In addition, Western Tree & Feather River Wholesale Nurseries would be affected to a greater degree under Alternatives 1 and 3 compared to Alternative 2, because Alternatives 1 and 3 would cut into their plant staging areas. Alternative 2 would not affect the plant staging areas but would affect the dirt road surrounding the plant staging areas.

Between Stations 370+00 and 410+00 within Oak Grove, properties on the west side of SR 70 would be the least affected under all alternatives because, although they would have vegetation removal and fence relocations, only one property (APN 025-230-107-000) would have a residential structure that would be temporarily impacted under Alternatives 1 and 3; however, the house would remain on the parcel. This structure would not be temporarily or permanently impacted under Alternative 2. Properties on the east side of SR 70 would be impacted to a greater degree than the west side, under all alternatives, because more structures would be permanently affected. Table 2.1.7-1 lists the parcels on the east side of SR 70 that would have structures permanently affected in this area, by alternative.

As listed in Table 2.1.7-1, Alternative 1 would affect fewer structures on the east side of SR 70 than Alternatives 2 and 3. While Alternative 2 would affect more structures on the east side of SR 70 than Alternative 3, the number of affected structures is similar enough to constitute similar visual impacts during construction between the two alternatives. In addition, a barn on APM 025-310-023-000 and house on 025-030-071-000 would be temporarily affected under Alternative 3. Also within this area, the entrance of the Oroville Wildlife Area would be slightly modified under all alternatives

to provide a wider turning radius for safer entry to and exit from SR 70. Also, a small amount of vegetation would be removed from the Oroville Wildlife Area entry that would not alter the entry experience during construction.

Table 2.1.7-1. Permanent Impacts on Structures on the East Side of SR 70 between Stations 370+00 and 410+00

Alternative	Assessor Parcel Numbers (APN)	Structure Type
Alternative 1	025-030-070-000	Shed
	025-020-004-000	Business
	025-020-003-000	House
Alternative 2	025-310-023-000	Barn
	025-310-022-000	House and storage building
	025-030-069-000	House
	025-030-068-000	House
	025-030-070-000	House and shed
	025-030-071-000	House
	025-020-006-000/025-020-017-000	Trailer
	025-020-004-000	Business and house
	025-020-003-000	House
Alternative 3	025-310-022-000	House and storage building
	025-030-069-000	House
	025-030-068-000	House
	025-030-070-000	House and shed
	025-020-006-000/025-020-017-000	Trailer
	025-020-004-000	Business
	025-020-003-000	House

Alternatives Summary

All alternatives would have similar construction impacts within both segments. Avoidance and Minimization Measures would provide visual interest and enhance roadside aesthetics by adding wildflowers to erosion control seed mix that would be applied to disturbed areas. Avoidance and Minimization Measures would reduce impacts on affected properties to the degree possible by relocating or replacing residences, structures, landscaping, fencing, and other landscape features to the degree possible. However, the permanent impacts on structures cannot be mitigated in some cases because there is not enough room to rebuild or relocate the structure or feature on site.

Operation

There are no scenic roadways in or near the project area, so there would be no effect on such resources. Scenic vista views would not be adversely affected during operation because the proposed project and its alternatives would not introduce features that would block or alter such views. Minor visual changes would result from operation of the proposed project and its alternatives. Utilities within Segment 1 would be relocated outside the new state right-of-way and existing utility pole encroachments in Segment 2 would be relocated within the proposed right-of-way. The presence of utilities would be consistent with existing conditions, because they are already an existing visual element within the project corridor. Therefore, their relocation would not alter the visual character of views to and from the project corridor. Underground utilities along the frontage roads would be relocated to the realigned frontage roads and would not be seen because they would

be placed underground, consistent with existing conditions. Culvert widening would only result in minor visual changes, once built, to slightly widen existing culverts under all alternatives. Such changes would be barely noticeable when seen in conjunction with the widened roadway corridor. In addition, the modified Oroville Wildlife Area entrance would be slightly wider under all alternatives but would not alter the entry experience; visual resources within the wildlife area would not be affected during operation. Agricultural driveway entrances that are set back would be visually consistent with existing conditions. Roadway realignments would result in slight alterations to the visual character at those locations, but the changes would be largely consistent with the existing visual character by maintaining the same roadway widths and conforming to the existing alignment over a fairly short distance.

The roadway widening would increase the roadway surface area from a two-lane rural roadway to a four-lane roadway and associated turn lanes that is more suburban in nature. The majority of the project and its alternatives would widen into pasture lands and orchards. The proposed project would be in compliance with Director's Policy DP-22 and Caltrans' HDM Design Standards 304.1, 304.4, and 902.1, and would mostly utilize Context Sensitive Solutions so that slopes would be gentle, smooth, and well transitioned into the existing adjacent roadside and landforms, avoiding obvious cuts and fills, and improving project aesthetics associated with roadside slopes. The design exception along the east side of SR 70 within Segment 1 would retain the visual conditions associated with the existing side slopes. Therefore, widening would not greatly alter the visual character of these areas because the lands outside the right-of-way would retain their visual character, new roadside slopes would appear compatible with the existing visual character, and views from the expanded roadway corridor, that are seen by roadway users, would be consistent with existing conditions. A grassy median would also be present to separate traffic and would provide some visual relief compared to a continuous swath of pavement. In addition, seasonal wildflowers would improve roadside and median aesthetics through implementation of Avoidance and Minimization Measures.

The most noticeable visual changes would be the intersection at Ophir Road and impacts on private properties under all alternatives. The intersection at Ophir Road would be widened to accommodate the median, through lanes, and turn lanes and would be more consistent with a major suburban intersection than a major rural intersection. Impacts on private properties would occur because residential and commercial properties would lose frontage along SR 70, as described under Construction, affecting landscape features such as structures, vegetation, fencing, and mailboxes. All alternatives would have similar operational impacts. The widening would bring the right-of-way closer to residents and businesses under all alternatives. This may create a sense of visual encroachment for properties with structures located close to the new right-of-way or where landscaping would be removed so that views to and from SR 70 would be available where views were once screened. While Avoidance and Minimization Measures would relocate or replace landscaping, fencing, and other landscape features to the degree possible, this measure would not be able to reverse the adverse effects experienced by impacted roadway neighbors through the loss of such landscape features and alterations in their views of the project corridor. This measure would also not reduce the effects associated with structures that would be permanently displaced through implementation of the alternatives. However, many properties within the developed portions of the corridor that are along and just outside the right-of-way would not be affected or would only be slightly affected by the project. Therefore, the removal of structures on impacted properties and changes to landscaping, fencing, and other landscape features would not be so great that they would

alter the existing visual character of lands adjacent to the project corridor or views of these areas from the project corridor.

Lastly, the proposed project and its alternatives would tie into existing roadways that have undergone recent widening so that this portion of SR 70 would conform to the existing visual conditions located just outside of the project corridor. This would create a visually consistent roadway corridor throughout the project vicinity.

Conclusions

Once built, the two segments of the proposed project and its alternatives would be perceived as one continuous roadway corridor. Alternative 1 would generally result in the least impact on structures in Segment 2, Alternative 2 would result in the greatest impact on structures, and Alternative 3 would impact slightly fewer structures than Alternative 2. However, the number of affected structures under Alternatives 2 and 3 are similar enough to constitute similar visual impacts during construction between the two alternatives. The majority of the project and its alternatives would widen into pasture lands and orchards and would not greatly alter the visual character of these areas. A grassy median would provide some visual relief compared to a continuous swath of pavement. Widening would affect landscape features, such as landscaping and fencing, in a similar manner under all alternatives and would bring the right-of-way closer to residents and businesses under all alternatives, creating negative impacts for high visual sensitivity views. Avoidance and minimization measures specified in the NES for vegetation protection and replacement would help to improve project aesthetics. Avoidance and minimization measures would protect trees in staging areas, provide seasonal wildflower interest, and reduce impacts on landscape features. Overall, views to and from the project corridor would experience a slight reduction in overall visual quality, resulting from a change in appearance from a more rural-looking, two-lane roadway to a wider suburbanized, four-lane roadway. However, widening this portion of SR 70 would conform to the existing visual conditions located just outside of the project corridor, where other segments of SR 70 have already undergone recent widening. As a result, resource change (changes to visual resources as measured by changes in visual character and visual quality) would be moderately low. Therefore, the changes from construction and operation would not result in adverse visual effects under any of the build alternatives with implementation of the recommended avoidance, minimization, and mitigation measures.

Light and Glare

Nighttime construction would likely occur, and some nighttime lighting at the construction site would be required and could result in nuisance light if not properly designed. Avoidance and Minimization Measures would ensure that lighting used for construction would be directed downward, and that spill light would be minimized to the greatest extent possible.

The proposed project would result in a nominal increase in daytime glare by increasing the paved area and by removing some of the roadside vegetation that provides shade. However, the pavement would be dark, which would greatly reduce glare, and roadside vegetation would still be present along the right-of-way to provide some shade. Therefore, the proposed project would not create a new source of substantial glare that would adversely affect daytime or nighttime views in the area. The SR 70 intersection with Ophir Road is signalized and lit, and the signal and lighting would need to be modified to accommodate the new, larger intersection. There would be a very slight increase in lighting to accommodate the wider roads leading to the intersection, which would only incrementally increase the amount of lighting in the area. In addition, the SR 70 intersection with

Welsh and Palermo Roads would be signalized and lit. Lighting at this intersection could negatively affect nearby roadway neighbors if not properly designed. In particular, intersection lighting could include LED lighting for security and safety purposes. LED lights can negatively affect humans by increasing nuisance light and glare, in addition to increasing ambient light glow, if shielding is not provided and blue-rich white light lamps (BRWL) are used (International Dark-Sky Association 2010a, 2010b, 2015). This would result in a substantial source of nighttime light and glare that could adversely affect nighttime views in the area. Avoidance and Minimization Measures would reduce adverse effects associated with lighting.

Light and glare affects would likely be minimal. Avoidance and minimization measures would reduce the effects of nighttime construction and light and glare impacts from lighted intersections. Therefore, these changes would not result in adverse visual effects under any of the build alternatives with implementation of the recommended avoidance, minimization, and mitigation measures.

2.1.7.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures have been identified and can lessen visual impacts caused by the project. Also, the inclusion of aesthetic features in the project design previously discussed can help generate public acceptance of a project. This section describes additional avoidance and minimization measures to address specific visual impacts. These measures will be designed and implemented with concurrence of the District Landscape Architect. The following measures to avoid or minimize visual impacts will be incorporated into the project.

AES-1: Avoid and Protect Trees in Staging Areas during Construction

Trees that are located within staging areas will be avoided and protected during construction. Tree protection zones for all trees will be the dripline radius plus 1 foot. The fencing will remain in place throughout the course of the project. Tree protection fencing must be a minimum 6-foot-tall chain link or substitute fencing. The location of the fencing will be indicated on the project design engineer's grading plans. The fencing will be erected before demolition, grading, or any other construction activity begins. Fencing should not be placed on private property without written authorization from property owners. The following activities are prohibited throughout the course of the project within the tree protection zone:

- Storage or parking of vehicles, building materials, refuse, or excavated soil material.
- Use, access, or parking of heavy equipment, such as backhoes, tractors, and other heavy vehicles and equipment.
- Dumping of poisonous chemicals or materials, or chemicals or materials with unknown properties that potentially could be deleterious to tree health, such as paint, petroleum products, concrete or stucco mix, or dirty water.
- The use of tree trunks for winch support, anchorage, power pole, sign post, or any other function.
- Drainage changes, grade changes, soil disturbance.

AES-2: Minimize Fugitive Light from Portable Sources Used for Construction

At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights will be operated at the lowest allowable wattage and height and will be raised to a height no greater than 20 feet. All lights will be screened and directed downward toward work activities and away from the night sky and highway users and highway neighbors, particularly residential areas, to the maximum extent possible. The number of nighttime lights used will be minimized to the greatest extent possible.

AES-3: Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix

The project proponent will require construction contractors to incorporate native grass and wildflower seed in standard seed mixes, which may be non-native, for erosion control measures that will be applied to all exposed slopes and within the medians. Wildflowers will provide seasonal visual interest to areas where trees and shrubs are removed and grasslands are disturbed. Only wildflower and grass species that are native will be incorporated into the seed mix, and under no circumstances will any invasive grass or wildflower plant species be used as any component in any erosion control measures. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. If not appropriate to the surrounding habitat, wildflowers should not be included in the seed mix.

AES-4: Replace or Relocate Site Features and Landscaping Affected by the Project

Where appropriate and to the degree possible, landscaping and related appurtenances, such as fencing, privacy walls, and other similar features, removed from private properties as a result of construction will be relocated, replaced, or restored in place and in kind to mitigate for visual impacts. In addition, to the degree possible, buildings and structures, such as residences, barns, sheds, and other similar features, removed from private properties as a result of construction will be relocated or rebuilt on the affected parcel to mitigate for visual impacts. If the site cannot accommodate this relocation or replacement, then Caltrans will compensate parcel owners for features that would be removed or damaged as a result of the project. Replacement would be of value at least equal to that of existing features. To determine compensation for trees, an arborist certified in appraising a tree for the value it adds to that property will be used to determine monetary compensation for tree removal. Similarly, a person(s) qualified in evaluating buildings, structures, and landscape features other than trees, such as fencing, privacy walls, or similar features, will be used to determine compensation values for the loss of those features at such locations. The County or its contractor will coordinate these appraisals. In the event that a parcel owner deems the appraised value unfair, the parcel owner may hire an independent appraisal at their own expense. Negotiations to settle upon a fair appraisal value can take place between the County or its contractor and the parcel owner in question. If a fair appraisal value cannot be agreed upon, then an independent mediator will be used to resolve negotiations in a manner that is fair to all parties involved. The results of the assessment of private-property tree and landscape features will be used to determine the budget needed to implement this avoidance and minimization measure and will be included in the costs to construct it as part of the project. Before final project acceptance (i.e., prior to final acceptance of design plans and specifications that will be released for

construction contract advertisement and award), funding source(s) for replacement of these features will be in place.

AES-5: Apply Minimum Lighting Standards

All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using Illuminating Engineering Society's design guidelines and in compliance with International Dark-Sky Association–approved fixtures. All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, and the number of nighttime lights needed to light an area will be minimized. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing. LED lighting will avoid the use of BRWL lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the International Dark-Sky Association's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

2.1.7.5 References Cited

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2.1.8 Cultural and Tribal Cultural Resources

2.1.8.1 Regulatory Setting

This section describes the regulatory and environmental setting for cultural and tribal cultural resources in the project corridor. It also describes and analyzes the impacts on cultural and tribal cultural resources that would result from implementation of the proposed project. Mitigation measures are provided for any potentially significant impacts, where feasible and appropriate.

The term "cultural resources" as used in this document refers to all "built environment" resources (buildings, structures, bridges, railroads, water conveyance systems, etc.), places of traditional or culturally importance, and archaeological resources (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including "historic properties," "historic sites," "historical resources," and "tribal cultural resources." Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the AC HP [36 Code of Federal Regulations (CFR) 800]. On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and the California Department of Transportation (Caltrans) went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.
PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Procedures for compliance with PRC Section 5024

are outlined in a Memorandum of Understanding (MOU)[1] between the Department and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

2.1.8.2 Affected Environment

This section of the EA is based on the studies performed to identify and evaluate the potential for the Project effects on cultural resources, including the Historical Properties Survey Report (HPSR) (ICF 2017a), Archaeological Survey Report (ASR) (ICF 2017b), and the Historical Resources Evaluation Report (HRER) (ICF 2017c) prepared for the SR 70 Project. No historic properties are present in the APE, therefore, Caltrans, pursuant to Section 106 Programmatic Agreement Stipulation IX.A, has determined a Finding of No Historic Properties Affected is appropriate for the Project.

Area of Potential Effects (APE)

In accordance with Section 106 Programmatic Agreement Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established in consultation with Caltrans District 3 staff on November 16, 2017.

The archaeological APE consists of both the horizontal and vertical maximum potential extent of direct impacts resulting from the project. The horizontal APE encompasses the project footprint and includes those areas of new construction, easements, utilities, and operations-related activities associated with the project. The vertical APE is the maximum extent of ground disturbance within the horizontal APE (i.e., ground surface to maximum depth of soil disturbance) and varies by project component. For the vast majority of the project, the vertical APE ranges from 2–4 feet deep. The exceptions are areas where utilities will be relocated and also the portion of the horizontal APE just south of Palermo Road where a cut slope is needed to widen SR 70 into the existing hillside. The vertical APE for these project components is approximately 6 feet and 55 feet, respectively.

The architectural APE encompasses the maximum project footprint, including all properties containing buildings or structures within the boundary of the proposed project footprint. In order to consider potential indirect impacts to architectural resources, all parcels containing building less than 100 feet from the maximum project footprint were also included in the APE.

Research Methodology

Records Search and Archival Research

A records search was conducted for the project on March 11, 2013 by the staff of the Northeast Information Center (NEIC) at California State University, Chico. The purpose was to identify any previously recorded cultural resources in the APE and vicinity and to assess the potential for cultural resources in the APE. Also included in the search were previous cultural resources studies that have included portions of the APE or areas within 0.25 mile of the APE.

The NEIC has records of eight previously recorded cultural resources within the APE. Previously recorded resources consist of five historic-period archaeological resources (CA-BUT-465H, CA-BUT-1781H, CA-BUT-1782H, CA-BUT-1783H, P-04-002960), two archaeological resources with both

[1] The MOU is located on the SER at http://www.dot.ca.gov/ser/vol2/5024mou_15.pdf.

historic-period and prehistoric components (CA-BUT-1443/H, CA-BUT-1695/H), and one built environment resource with both a built environment and historic-period archaeological components (CA-BUT-1794H). The records search indicated that one additional cultural resource, CA-BUT-1784H has been recorded within 0.25 mile of the APE.

According to the records search, 12 previous cultural resources studies have been conducted within portions of the APE, and one additional previous cultural resources study has been conducted within 0.25 mile of the APE. ICF is aware of at least one other previous cultural resources study not on file at the NEIC that has covered a portion of the APE.

ICF also conducted additional background research to arrive at a general understanding of the settlement and development of the project area. Research was largely conducted online and through ICF files including previously collected Official Butte County Maps. Archival research at the Butte County Historical Society in Oroville on December 3, 2015. The historical society does not retain building permits and the historic photographs and aerial images that were viewed did not cover the project area. Caltrans also assisted in facilitating property-specific research at the Butte County Assessor on January 5, 2016 on properties containing buildings and structures built before 1971 in the APE. The purpose of this research was to obtain historic property data on the buildings located in the APE.

In addition to the aforementioned repositories, internet research was conducted to locate the U.S. Geological Survey (USGS) Topographic Maps of the area; historic aerials of the project area and properties within the APE were collected; and online databases from the National Archives and Records Administration, California Digital Newspaper Collection, and Ancestry.com were used to gather property-specific historical information. The purpose of this research was to identify important historic people, events, and trends that may have been associated with properties within the APE.

Consultation with Interested Parties

On October 27, 2015, ICF requested a records search of the NAHC Sacred Lands File (SLF) for the APE and a list of Native American representatives who might be able to provide information about resources of concern to them located within or adjacent to the APE. The NAHC replied on October 30, 2015 that the SLF contained no record of Native American cultural resources in or in the immediate vicinity of the APE, and provided a list of Native American contacts who may be interested in the project.

Letters dated June 22, 2016 were sent to the Native American individuals and organizations on the NAHC's list, followed-up by a series of phone calls. The following Native American representatives were contacted:

- James Edwards, Chairperson, Berry Creek Rancheria of Maidu Indians
- Glenda Nelson, Chairperson, Enterprise Rancheria of Maidu Indians
- Kyle Self, Chairperson, Greenville Rancheria of Maidu Indians
- Wallace Clark-Wilson, Chairperson, Konkow Valley Band of Maidu.
- Dennis Ramirez, Chairperson, Mechoopda Indian Tribe of Chico Rancheria

- Gary Archuleta, Chairperson, Mooretown Rancheria of Maidu Indian
- Don Ryberg, Chairperson, Tsi Akim Maidu

To date, responses have been received from The Estom Yumeka Maidu (Enterprise Rancheria) and the Machoopda. Native American Consultation is ongoing and will continue throughout the life of the project. Native American groups and individuals will be kept apprised of any developments concerning cultural resources.

On December 1, 2015, ICF sent contact letters to the Butte County Historical Society, South Oroville African American Historical Society and the California Historical Society. The letters briefly described the proposed project and requested information about cultural resources near the proposed project area. In addition to these historical societies, ICF made phone calls on December 4, 2015 to the Butte County Planning Department, Building Division and the City of Oroville Building Division and left messages to inquire about obtaining building permits. On December 7, 2015 the City of Oroville called back to state that all buildings within the SR 70 APE may likely have permit coverage under Butte County. Follow-up phone calls to the Butte County Historical Society, South Oroville African American Historical Society and the California Historical Society were made on July 1, 2016. The California Historical Society had no comment, and the Butte County Historical Society and the South Oroville African American Historical Society did not respond. To date, ICF has not received any further responses from any of the historical societies or from the Butte County Building Division.

Survey Results

Archaeological Resources

An archaeological pedestrian survey was conducted on November 23 and 24, 2015, of all portions of the APE for which landowner access was obtained. Access was not obtained for a few of the parcels that straddled the APE, however, these areas were easily observed from the ROW and/or previously surveyed for other projects and combined these data were sufficient. Intensive pedestrian survey methods were used, consisting of walking transects spaced at no more than 15 meters and visually inspecting the ground surface for evidence of cultural material. Ground visibility in the APE varied from 0% to 100%, averaging 75%. Much of the APE has experienced intense ground disturbance from historic-period and modern urban development activities, such as construction of roads, landscaping activities, gravel extraction, and mining activities. Development, disturbances, and heavy vegetation impeded visibility in some areas.

The archaeological survey results indicated that portions of two archaeological resources, CA-BUT-1782H and CA-BUT-1783H, remain within the APE. The recorded locations of four previously recorded archaeological resources--CA-BUT-465H, CA-BUT-1443/H, CA-BUT-1695/H, CA-BUT-1781H were surveyed, but no evidence of these sites was observed within the APE. The site boundaries were either mis-plotted, or due to development the portions recorded within the APE have since been destroyed or displaced. The portion of site P-04-002960 recorded within the APE is exempt from evaluation per Attachment 4 of the PA, as were all other archaeological resources observed within the APE and therefore do not require any further consideration.

The two sites remaining within the APE, CA-BUT-1782H and CA-BUT-1783H, have been previously determined not eligible for listing on the NRHP and these determinations are still valid.

Built Environment Resources

Architectural historians surveyed and recorded all parcels within the architectural APE that contained buildings pre-dating 1971, on December 2, 2015 and January 5, 2016. Resources in the architectural APE were documented with digital photographs and handwritten notes. These included 11 historic era cultural resources. One of these has been previously determined not eligible for listing in the NRHP with SHPO concurrence. The remaining historic cultural resources were identified and addressed in detail in the Project HRER. All resources were formally evaluated under NRHP Criteria and found not eligible for listing, either individually or as part of a district. Similarly, these properties are not historical resources for the purposes of CEQA. The remaining properties in the project area were exempt from evaluation per the criteria presented in attachment 4 of the PA.

The previously recorded built environment resource, CA-BUT-1794H was revisited during the survey and the previous determination of not eligible for listing in the NRHP and CRHR is still valid.

Tribal Cultural Resources

Consultation under AB 52 was not requested. Therefore, no tribal cultural resources were identified in the project area.

2.1.8.3 Environmental Consequences

The archaeological APE encompasses no known NRHP-eligible, NRHP-listed, or previously unevaluated archaeological resources. The APE maintains a low potential for buried archaeological sites overall, with an increased potential in areas adjacent to drainages and creeks. Because the current survey consisted only of surface inspection there remains the possibility that previously unrecorded buried archaeological resources are present within the APE, although this possibility is low for the majority of the APE.

Similarly, the architectural APE encompasses no known NRHP-eligible, NRHP-listed, or previously unevaluated built environment resources. The 11 historic cultural resources identified in the architectural APE as a result of the 2015 and 2016 surveys are not culturally significant resources for the purposes of Section 106 of the NHPA and CEQA. In addition, there are no Section 4(f) resource types within the Project APE.

Therefore, a Finding of No Historic Properties Affected has been determined for the Project.

2.1.8.4 Avoidance, Minimization, and/or Mitigation Measures

CUL-1: Implement Plan to Address Discovery of Unanticipated Buried Cultural Resources or Human Remains

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who will then notify the Most Likely Descendent (MLD). At this time, the

person who discovered the remains will contact Kendall Schinke, Caltrans District 3 Environmental Branch Manager, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

2.1.8.5 References Cited

ICF. 2017a. Historical Properties Survey Report: State Route 70 Corridor Improvements Project, Butte County, California. February. Prepared for Mark Thomas & Company, Sacramento, California.

———. 2017b. Archaeological Survey Report: State Route 70 Corridor Improvements Project, Butte County, California. October. Prepared for Mark Thomas & Company, Sacramento, California.

———. 2017c. Historical Resources Evaluation Report: State Route 70 Corridor Improvements Project, Butte County, California. August. Prepared for Mark Thomas & Company, Sacramento, California.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

2.2.1.1 Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

To comply, the following must be analyzed.

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The *base floodplain* is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An *encroachment* is defined as "an action within the limits of the base floodplain."

2.2.1.2 Affected Environment

This information is based on the October 2016 *Long Form – Stormwater Data Report* for the project and the February 2017 *Water Quality Assessment Report* for the project (Mark Thomas & Company 2016; ICF 2017a).

The project area is within the jurisdiction of the Central Valley Regional Water Quality Control Board. This region includes the Sacramento River and San Joaquin River basins, including all areas from the crest of the Sierra Nevada range west to the Coast Range and Klamath Mountains. The region is bounded in the north by the California-Oregon border and extends south past the headwaters of the San Joaquin River to the base of the Tehachapi Mountains. The Sacramento and San Joaquin rivers meet and form the Delta, ultimately draining into San Francisco Bay. This basin covers about one-fourth of the total area of the state—more than 30 percent of the state's land that can be irrigated—and furnishes about 51 percent of the state's water supply.

The project area is within the northern portion of the Lower Feather Watershed. The average annual precipitation within the Lower Feather River watershed is approximately 50 inches (eastside foothills) to 20 inches (valley floor) (Sacramento River Watershed Program 2015). The terrain within the project limits is relatively flat, with elevations ranging from approximately 105 to 225 feet above mean sea level (AMSL) (ICF 2017a). The Feather River is almost entirely contained within a series of levees, with levees lining the Feather River west of the project alignment (Sacramento

River Watershed Program 2015). The soils in the project area are high in loam and, therefore, have a moderate resistance to erosion.

SR 70 in the project area crosses three drainages: Oak Knob Draw, which supports seasonal emergent wetlands, and two unnamed ephemeral drainages. All three drainages appear to connect to the Feather River, a tributary of the Sacramento River (ICF 2017a). The project area is less than 1 mile east of the Feather River, and 14.5 miles east of the Sacramento River. The headwaters of the Feather River is the Oroville Dam at Lake Oroville and flows south to the Sacramento River (U.S. Geological Survey 2015).

Drainage from SR 70 sheet flows into adjacent properties, or is collected in roadside toe-gutters. Run-off collected in toe-gutters is not discharged into any water body. The two ephemeral drainages are naturally occurring drainages that primarily carry flow after rain events. Non-jurisdictional roadside ditches occur along sections of SR 70. These ditches were constructed in uplands and function in draining runoff from the road pavement. However, these ditches do not replace existing natural drainages or connect a natural drainage to a downstream tributary. In addition, vernal pool/vernal swale complexes occur in the annual grassland, and seasonal wetlands occur in depressional areas that have been previously disturbed, such as areas adjacent to roads (ICF 2017b).

This project site is partially within a Federal Emergency Management Agency (FEMA) 100-year floodplain. The majority of the project alignment is within Zone X (unshaded), areas of minimal flood hazard, usually depicted on Flood Insurance Rate Maps (FIRMs) as above the 500-year flood level. However, some portions of the proposed project are within Zone A, the 100-year Floodplain Zone, though no depths or base flood elevations are determined within these zones (Federal Emergency Management Agency 2011). Although the proposed project is along the east bank of the Lower Feather River, it is at an elevation sufficient to protect it from most occurrences of typical river flooding.

2.2.1.3 Environmental Consequences

The proposed project involves the widening a 6.1-mile segment of SR 70 from two lanes to four lanes. The project corridor also includes expansion of the concrete box culvert bridge crossing of Oak Knob Draw that is approximately 20 feet long and 44 feet wide. The proposed project would lengthen the existing culvert along the portion of the Oak Knob Draw to match the widened highway, which would result in permanent fill of waters of the United States.

The proposed project would result in new impervious surfaces; a total area of 33.7 acres, 31.9 acres, and 31.6 acres of new impervious surfaces would result from Alternatives 1, 2, and 3, respectively. With new impervious surfaces, post-project flows will exceed/increase pre-project flows and could result in downstream erosion or flooding. In addition, increased impervious surfaces could reduce the ability for groundwater recharge within the localized groundwater aquifer system. However, to address the additional flows and ensure that the proposed project does not exceed existing flow conditions, the project would include stormwater runoff best management practices (BMPs) to collect and retain or detain the additional flows within the project limits, as required by the California Department of Transportation National Pollution Discharge Elimination System municipal separate storm sewer systems (MS4) permit and a Storm Water Management Plan. In addition, the proposed project would only minimally affect groundwater resources because the excavations would occur on a temporary, short-term basis during the construction period. As stated in the *Long*

Form Stormwater Data Report (Mark Thomas 2016), the project would not result in longitudinal or significant floodplain encroachment or support incompatible floodplain development.

2.2.1.4 Avoidance, Minimization, and/or Mitigation Measures

Impacts from these activities would be avoided or minimized because all construction activities within the Oak Knob Draw would comply with the necessary permits and requirements from regulatory agencies, including the State Water Resources Control Board, Central Valley Regional Water Quality Control Board, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Butte County. In addition to agency coordination and permit compliance, project drainage has been considered in the design, which may include bio-retention areas, vegetated slopes, bioswales, and reconstructed ditches. The minimal increase in impervious area would not cause on- or offsite flooding. The proposed project design includes side slopes of 6H:1V or flatter, where feasible, to maintain pre-project sheet-flow drainage patterns (i.e., flow and rates) and improved storm drainage facilities.

The expanded bridge would be designed according to Hydraulic Design Criteria. The criteria dictate that the facility be capable of conveying the base or 100-year flood (Q100) and passing the 50-year flood (Q50) "without causing objectionable backwater, excessive flow velocities or encroaching on through traffic lanes." The same criteria also recommend a minimum freeboard clearance of 2 feet above the 50-year floodwater surface elevation (WSE50) to provide clearance for drift.

2.2.1.5 References Cited

ICF. 2017a. *Water Quality Assessment Report, State Route 70 Corridor Improvements Project*. January. Prepared for Caltrans. Sacramento, CA.

———. 2017b. Draft *Natural Environment Study. SR 70 Corridor Improvement Project.* November. Prepared for Caltrans. Sacramento, CA.

Federal Emergency Management Agency. 2011. Flood Insurance Rate Map# 06007C0980E and 06007C0990E. January 6, 2011. Accessed: November 18, 2015.

Mark Thomas & Company, Inc. 2016 *Stormwater Data Report – Long Form. State Route 70 Corridor Improvements*. October.

Sacramento River Watershed Program. 2015. *Lower Feather River Watershed*. Available: http://www.sacriver.org/aboutwatershed/roadmap/watersheds/feather/lower-feather-river-watershed. Accessed: December 11, 2015.

U.S. Geological Survey. 2015. Geographic Names Information System: ID 223423 Feather River. Entry Date January 19, 1981. Available: http://geonames.usgs.gov/apex/f?p=gnispq:3:0::NO::P3_FID:223423. Accessed: November 20, 2015.

2.2.2 Water Quality and Storm Water Runoff

2.2.2.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Individual permits. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (EPA's) Section 404 (b)(1) Guidelines (EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would

[1] A point source is any discrete conveyance such as a pipe or a constructed ditch.

have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements (see 33 CFR 320.4). A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act), enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., such as groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of *waste* as defined, and this definition is broader than the CWA definition of *pollutant*. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

[2] The EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater discharges, including MS4s. An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified the California Department of Transportation (Caltrans) as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit (Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order 2014-0006-EXEC (effective January 17, 2014), Order 2014-0077-DWQ (effective May 20, 2014), and Order 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges; and
3. Caltrans' stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) best management practices (BMPs), to the maximum extent practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest SWMP to address stormwater runoff.

Construction General Permit

Construction General Permit, Order No. 2009-009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates stormwater discharges from construction sites that result in a Disturbed Soil Area (DSA) of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated

construction sites are required to develop Stormwater Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and before- and after-construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with Caltrans' SWMP and Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than 1 acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.2.2.2 Affected Environment

This information is based on the 2017 *Water Quality Assessment Report* for the project and the October 2016 *Long Form – Stormwater Data Report* for the project (Mark Thomas & Company 2016).

The majority of the project is within the Upper Feather River watershed (HUC 1802015902), and the southern portion is within the Honcut Creek watershed (1802015901), both within the larger Honcut Headwaters-Lower Feather watershed (HUC 18020159; ESRI 2016). The segment of SR 70 within the project area crosses three drainages: Oak Knob Draw and two unnamed ephemeral drainages. All three drainages appear to connect to the Feather River, which is less than 1 mile east of the project area and 14.5 miles east of the Sacramento River. The headwaters of the Feather River is the Oroville Dam at Lake Oroville and flows south to the Sacramento River. In addition, vernal pool/vernal swale complexes occur in the annual grassland; seasonal wetlands and seasonal swales occur in roadside and irrigation ditches, dredge tailings, and excavated areas adjacent to roads at the SR 70/Palermo Road intersection; and seasonal wetlands occur in depressional areas that have been previously disturbed, such as areas adjacent to roads and ditches (ICF 2017a).

Drainage from SR 70 sheet flows into adjacent properties, or is collected in roadside toe-gutters. Run-off collected in toe-gutters is not discharged into any water body. Two ephemeral drainages are naturally occurring drainages that primarily carry flow after rain events. Non-jurisdictional roadside ditches were constructed in uplands occur along sections of SR 70 and function in draining runoff from the road pavement. However, these ditches do not replace existing natural drainages or connect a natural drainage to a downstream tributary (ICF 2017a).

2.2.2.3 Environmental Consequences

The proposed project would result in new impervious surfaces; a total area of 33.7 acres, 31.9 acres, and 31.6 acres of new impervious surfaces would result from Alternatives 1, 2, and 3, respectively. An increase in impervious surface (pavement) would result in the potential for additional roadway contaminants to affect water quality. Potential sources of pollutants from the roadway include total suspended sediments, nutrients, volatile and semivolatile organics, hydrocarbons, pesticides, particulate metals, dissolved metals, pathogens, litter, biochemical oxygen demand, total dissolved solids, and targeted design constituents. Construction activities may also result in eroded soil or suspended solids being temporarily introduced into waterways. Potential impacts of the proposed project on existing water quality conditions in Lower Feather River would consist of short-term discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains or the Lower Feather River generated during construction. Long-term impacts on water quality could occur from increased impervious area, operation and maintenance activities, such as bridge construction maintenance and inspections, and discharges of sediments and other pollutants collected in stormwater runoff. However, standard facilities used to handle stormwater on site would include an array of structural elements or facilities that would serve to manage, direct, and convey stormwater, as discussed in Section 2.2.2.4, *Avoidance, Minimization, and/or Mitigation Measures*.

2.2.2.4 Avoidance, Minimization, and/or Mitigation Measures

Project design would address water quality and stormwater runoff using the following means. The proposed project design includes improved storm drainage facilities. These measures would minimize the potential for discharges of pollutants to nearby storm drains and the Lower Feather River. Post-construction BMP treatment will be attained through a combination of biofiltration and infiltration devices. Generally, biofiltration devices are expected to treat all of the BMPs, but certain areas may require a combination of biofiltration and infiltration devices. Biofiltration strips, bioswales, and roadside retention ditches are proposed to provide BMP treatment, and would increase groundwater recharge and capture the roadway pavement runoff. The proposed project will be designed in accordance with the objectives of Caltrans' NPDES Permit requirements and related stormwater requirements to reduce runoff and the volume of entrained sediment. Caltrans stormwater quality manuals also include BMPs to be implemented for erosion and sediment control and material management. The implementation of BMPs would minimize impacts on drainage and water quality during long-term operations at the site. The project would only minimally affect groundwater resources because excavations and dewatering would occur on a temporary, short-term basis during the construction period.

WQ-1: Implement a Storm Water Pollution Prevention Plan and Caltrans' Best Management Practices to Avoid and Minimize Potential Effects on Water Quality

Implementation of the SWPPP, Caltrans BMPs, and stormwater guidance measures will minimize the potential for construction-related surface water pollution and ensure that water quality will not be compromised during construction. Specific BMPs designed to minimize water quality effects from construction will be determined by the construction contractor in the SWPPP with Caltrans approval. All construction would conform to the NPDES General Construction Permit requirements to maintain water quality within the project area and vicinity; these requirements include stormwater and non-stormwater quality protection measures for all construction activities within the Caltrans right-of-way.

2.2.2.5 References Cited

ESRI. 2016. USA Watershed Boundary Dataset. Last updated: November 2016. Accessed: June 8, 2018.

ICF. 2017a *Delineation of Potential Wetlands and Other Waters of the United States, SR 70 Corridor Improvement Project*. December. Prepared for Caltrans. Sacramento, CA.

———. 2017b. *Water Quality Assessment Report, State Route 70 Corridor Improvements Project*. January. Prepared for Caltrans. Sacramento, CA.

Mark Thomas & Company, Inc. 2016. *Stormwater Data Report – Long Form. State Route 70 Corridor Improvements.* October.

2.2.3 Geology/Soils/Seismic/Topography/Mineral Resources

2.2.3.1 Regulatory Setting

For geologic and topographic features, the key federal law relevant to the project is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

In addition to such topographic and geologic features, this section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using Caltrans' Seismic Design Criteria (SDC). The SDC provide the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

The Caltrans Division of Design provides procedures and standards for the seismic design of highways. It also adopts best management practices (BMPs) to "promote safety, statewide consistency, efficiency and quality." The division's *Highway Design Manual* (HDM) "establishes uniform policies and procedures to carry out the state highway design functions of the Department." The HDM indicates that consideration should be given to highway alignment in areas where faults are present, particularly for major interchanges. The HDM also provides highway foundation design recommendations for areas susceptible to liquefaction and landslides but acknowledges that it is not economically feasible to entirely prevent earthquake damage to roadways (California Department of Transportation 2012).

The California Surface Mining and Reclamation Act (SMARA) provides for the evaluation of an area's mineral resources using a system of mineral resource zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. The MRZ classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data; and socioeconomic factors such as market conditions and urban development patterns. The MRZ classifications are defined as follows.

- **MRZ-1**—areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2**—areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- **MRZ-3**—areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4**—areas where available information is inadequate for assignment into any other MRZ.

Butte County requires a grading permit for any project that involves grading of more than 50 cubic yards. As part of the application process, the permittee must include a description of the work to be done, such as depth of fills, height of cuts, proposed spoils locations, and estimated volumes of excavation and fill; the location of all drainage to and from the site and the location of culverts and

natural watercourses; a relocation plan for existing waterway or drainage facilities proposed to be altered; details of proposed drainage structures; a description of the methods to be used for erosion and sediment control; the locations of anticipated stockpile areas; and an erosion and sediment control plan prepared and signed by a licensed civil engineer.

2.2.3.2 Affected Environment

National Natural Landmarks

There are no National Natural Landmarks in Butte County (National Park Service 2017).

Regional Geology

The project area is located in the northeastern portion of the Sacramento Valley, which forms the northern portion of California's Great Valley geomorphic province (Norris and Webb 1990:412; California Geological Survey 2002).

The Great Valley, also called the Central Valley, is a nearly flat alluvial plain that lies between the Sierra Nevada on the east and the Coast Ranges on the west. Its south end is defined by the Tehachapi Mountains north of Los Angeles, and its north end is defined by the Klamath Mountains. Subdivided into the Sacramento Valley to the north and the San Joaquin Valley to the south, the valley has an average width of about 50 miles and is about 400 miles long overall (Norris and Webb 1990:412–417; Bartow 1991:1).

The Great Valley is floored by a thick sequence of sedimentary deposits that range in age from Jurassic through Quaternary. Under the eastern and central portions of the valley, the base of the sequence likely rests on Mesozoic crystalline rock allied to the plutons of the Sierra Nevada; to the west, basement rocks are believed to be Franciscan metasediments and/or mélange similar to exposures in the Coast Ranges. Mesozoic sedimentary rocks now in the subsurface record marine deposition. These sedimentary rocks are overlain by Tertiary strata reflecting marine, estuarine, and terrestrial conditions, which are in turn overlain by Quaternary fluvial and alluvial strata, recording uplift and erosion of the Sierra Nevada and Coast Ranges to approximately their present shape (Norris and Webb 1990:412–419; Bartow 1991:1).

Local Topography and Geology

The project area is in the valley floor and is gently sloping but with some elevation change, particularly at the hill at the northern end of the project area. The elevation ranges from approximately 130 feet to 220 feet above mean sea level.

Overview

The geologic mapping done by Helley and Harwood (1985) provides a slightly more detailed description of the local geology and was therefore used for this analysis, rather than the more recent mapping done by Saucedo and Wagner (1992).

The northern portion of the project area south to Palermo Road is underlain by the Red Bluff, Laguna, and Turlock Lake Formations. South of Palermo Road, the project area is underlain by the Pleistocene Riverbank Formation and small outcroppings of the Pleistocene Modesto Formation (Helley and Harwood 1985) (Figure 2-4). These units are described in the following sections based

on the order in which they are exposed at the surface from north to south, rather than in chronological order.

It should be noted that the area mapped as Red Bluff Formation and Turlock Lake Formation by Helley and Harwood (1985) was mapped as Pliocene-Pleistocene Tuffs of Oroville–Nomlaki Tuffs by Saucedo and Wagner (1991), as noted in the geotechnical report prepared for this project (Lumos and Associates 2013).

Dredge or Mine Tailings

Dredge or mine tailings occur in a small area at the northern edge of the project area (Helley and Harwood 1985). These are the result of gold mining in the late 1800s and early to mid-1900s (Clark 1970). The tailings are made up primarily of mounds of gravel and cobble with fine sediments between the mounds. The depth of tailings is not known and may be underlain by the Modesto or Riverbank Formations.

Red Bluff Formation

The Red Bluff Formation is a thin Pleistocene unit made up of bright red gravels that overlie the Laguna, Tuscan, and Tehama Formations. It may have formed as a result of impeded or closed drainages in the Sacramento Valley (Helley and Harwood 1992).

Laguna Formation

The Laguna Formation is a Pliocene unit made up of interbedded gravel, sand, and silt. The gravels and cobbles are generally made up of quartz or metaphoric fragments, but the matrix is consistently arkosic (i.e., made up of decomposed granite with abundant feldspar). In the Oroville area, volcanic deposits make up nearly 20 percent of the formation. Lithologically, the Laguna Formation is indistinguishable from the Turlock Lake Formation, but these units can be identified by their stratigraphic positions and the presence or absence of soil profiles (i.e., the soil profile of the Laguna Formation has been eroded whereas the soil profile of the Turlock Lake Formation is still present in some locations) (Helley and Harwood 1985).

Turlock Lake Formation

The Turlock Lake Formation is made up of fluvial and alluvial continental deposits of Pleistocene age. This formation represents eroded alluvial fans derived primarily from the plutonic rocks of the Sierra Nevada to the east. It consists of deeply weathered and dissected arkosic gravels with minor resistant metamorphic rock fragments and quartz pebbles with sand and silt present along the south and east sides of the Sacramento Valley (Helley and Harwood 1985).

Modesto Formation

A small area at the northern tip of Segment 2, just south of Palermo Road, is underlain by the Modesto Formation (Helley and Harwood 1985). However, because of the close association of the Modesto Formation with the Riverbank Formation and its widespread occurrence in the vicinity (Figure 2-4), the Modesto Formation is likely present in other locations in the southern portion of the project area. Like the Riverbank Formation, the Modesto Formation is an alluvial deposit. The two formations are lithologically very similar because the sediments that compose each unit were derived from the same rocks in the headwaters of the contributory streams issuing from the Sierra Nevada and were deposited in similar alluvial fan environments. The primary differences between

the Modesto and Riverbank Formations are age-related; they include the degree of consolidation/cementation, the amount of deformation (tilting and/or folding), and soil development. Where Modesto alluvium overlies the Riverbank Formation, the contact between the two units is frequently marked by a strongly developed paleosol with a pronounced clay horizon (Atwater 1982).

Riverbank Formation

Most of Segment 2 is underlain by the Pleistocene Riverbank Formation (Helley and Harwood 1985). The Riverbank Formation is an alluvial deposit made up of weathered reddish gravels, sand, silt, and clay. The Riverbank Formation is divided into two informal members in the Sacramento Valley, the upper and lower members, based largely on the more eroded character of the lower member by comparison with exposures of the upper member. Both of these members are widespread in the area south of Oroville (Helley and Harwood 1985).

Primary Seismic Hazards

The State of California considers two aspects of earthquake events as primary seismic hazards: surface fault rupture (i.e., disruption of the Earth's surface as a result of fault activity) and seismic ground shaking.

Surface Fault Rupture

The risk of surface rupture in the project area is low because there are no active faults (i.e., faults that show evidence of surface displacement in the past 11,000 years) in the project area. The nearest active fault is the Cleveland Hills fault, which is located just south of Lake Oroville, approximately 5 to 13 miles east of the project area (California Geological Survey 2010a; Lumos and Associates 2013).

Seismic Ground Shaking

Unlike surface rupture, ground shaking is not confined to the trace of a fault, but rather ground shaking propagates into the surrounding areas during an earthquake. The intensity of ground shaking typically diminishes with distance from the fault, but ground shaking may be locally amplified and/or prolonged by some types of substrate materials.

The project area is in an area of relatively low ground shaking potential for California (Branum et al. 2008).

Secondary Seismic Hazards

Secondary seismic hazards are seismically induced landslide, liquefaction, and related types of ground failure events, such as differential settlement and lateral spread. The State of California maps areas that are subject to secondary seismic hazards pursuant to the Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6), which is intended to reduce damage resulting from earthquakes. These hazards are addressed briefly below based on available information.

The potential for landslides and other slope stability issues in most of the project area is low (Lumos and Associates 2013). Most of the project area is relatively flat (gently sloping) and the risk of strong shaking is low.

Liquefaction is the process in which soils and sediments lose shear strength and fail during seismic ground shaking. The risk of liquefaction and related types of ground failure is unknown, but the risk of strong ground shaking is low.

Soils

The major soil map units present in the project area and their suitability for road construction is shown in Table 2.2.3-1.

Table 2.2.3-1. Road Construction Suitability of Major Soil Map Units in the Project Area

Soil Map Unit	Suitability Issue	Road Construction Suitability Rating
Eastbiggs loam, 0 to 2 percent slopes	Low strength, high shrink-swell potential, shallow depth to the saturated zone	Very limited
Kimball loam, 1 to 3 percent slopes	Low strength, high shrink-swell potential	Very limited
Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes	Low strength, high shrink-swell potential, shallow depth to the saturated zone, ponding	Very limited

Source: Natural Resources Conservation Service 2017.

The erosion hazard for these soils is rated as *slight* (Natural Resources Conservation Service 2017).

Mineral Resources

No MRZ-2 sites are located in or adjacent to the project area (California Geological Survey 2017), but one site is located 1 mile east of the project area, near Palermo Road. This site, the Power House Aggregate Project site, was classified as MRZ-2 in December 2010 for Portland cement concrete-grade aggregate and contains resources in excess of the threshold value of $17,157,910 (2010 dollars) required for classification as MRZ-2 (California Geological Survey 2010b, 2010c).

2.2.3.3 Environmental Consequences

There are no known active faults in or near the project area. Thus, there would be no impact on construction workers or the traveling public related to surface fault rupture under any of the build alternatives.

The project is an area with a low potential for strong seismic ground shaking. In addition, a geotechnical field investigation would be conducted and a Geotechnical Design Report with recommended design parameters would be prepared in accordance with Caltrans' HDM (California Department of Transportation 2012). The project would be designed according to Caltrans seismic standards, as provided in the HDM, minimizing the risk to construction workers or the traveling public from strong seismic ground shaking.

The project area is subject to a low potential for seismic-related ground failure because of the low potential for strong ground shaking and the gently sloping topography. However, further soil testing is needed to assess the stability of soils in significant cuts and fills, as described in the preliminary geotechnical report (Lumos and Associates 2013). This testing would be part of the final

Geotechnical Design Report, and the recommendations of this report would be incorporated into the project design. There would be no impact on construction workers or the traveling public.

There is a low risk for landslides because of the gentle slope of the topography and because most of the project would not involve large cuts and fills or steep excavations. However, further soil testing is needed to assess the stability of soils in significant cut and fills, as described in the preliminary geotechnical report (Lumos and Associates 2013). This testing would be part of the final Geotechnical Design Report, and the recommendations of this report would be incorporated into the project design. There would be no impact on construction workers or the traveling public.

Ground-disturbing earthwork associated with road grading and construction could increase soil erosion rates and loss of topsoil. The BMPs described in Section 2.2.1, Hydrology and Floodplain, and Section 2.2.2, Water Quality and Stormwater Runoff, would minimize erosion and the loss of topsoil.

The project area is located on soils known to be expansive (i.e., have a high shrink-swell potential), have low strength, and have shallow depth to the saturation zone. A final Geotechnical Design Report would be prepared, which would recommend minimization measures to address these soil issues. These measures could include use of subgrade enhancement geotextile and cementitious binder. The recommendations of the Geotechnical Design Report would be incorporated into the project design. In addition, BMPs would also be implemented to address soil issues, minimizing the risk to construction workers or the traveling public. This impact would be less than significant.

The project would not include a septic system. There would be no impact.

No natural landmarks are present in the project area or vicinity. There would be no impact.

There are no designated mineral resource areas (MRZ-2) in the project area or vicinity, and the project would not impede the extraction of any known mineral resources. There would be no impact.

Under the no build alternative, there would be no change in seismic-related conditions because the project area has no known active faults and has a low potential for strong seismic ground shaking. There would be no impact related to landsliding because the topography is gently sloping and no construction would occur. There would be no impacts related to erosion because no grading would occur.

2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures that could be recommended in the Geotechnical Design Report to address the seismic and soil issues are described below. The BMPs described in Section 2.2.1, Hydrology and Floodplains, and Section 2.2.2, Water Quality and Stormwater Runoff, would minimize erosion and the loss of topsoil.

GEO-1: Minimize Impacts from Seismic Events

To minimize potential impacts from seismic events, the project will be constructed in accordance with all applicable Caltrans standards and regulations and will be designed for the maximum credible earthquake. All construction activities will adhere to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

GEO-2: Minimize Soil Instability

To minimize the potential for soil instability from shrink-swell potential, soils with high shrink-swell potential will be compacted at the highest moisture content possible and not be allowed to dry out prior to covering with other material.

GEO-3: Conduct Geotechnical Investigation

A geotechnical investigation is necessary to determine the engineering characteristics of native soil in undeveloped areas. Special treatments could be required to increase the suitability of native soils for highway construction, or imported material may be used. Imported soil for highway embankments will have a minimum R-value of 15 and have the appropriate environmental certifications to ensure contaminated soil is not used on site. Other treatments could include removal of loose and compressible material, placement of subgrade enhancement geotextile, or use of a cementitious binder.

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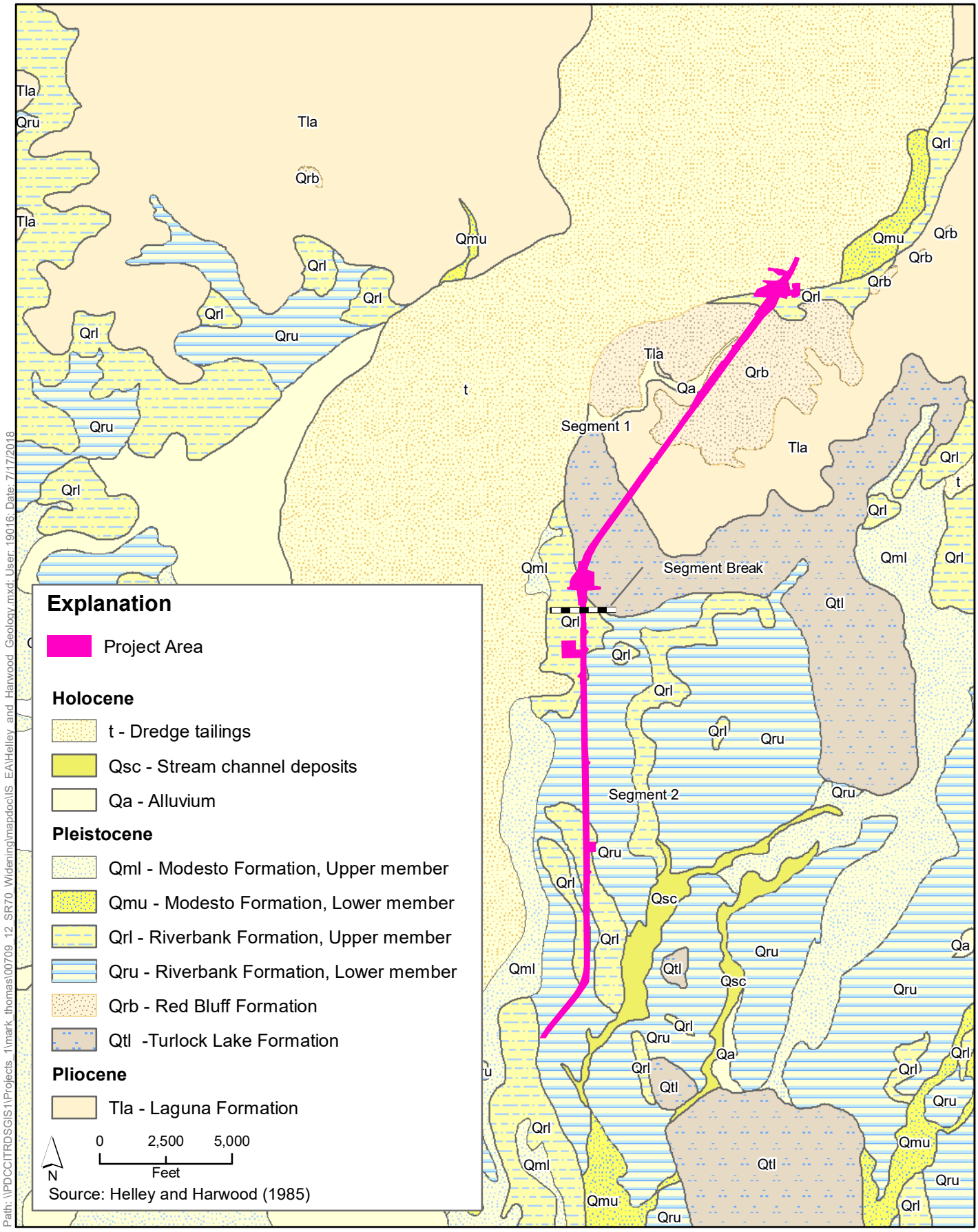

Figure 2-4
Geology Map of the Project Area

2.2.4 Paleontology

2.2.4.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects. The following regulations apply to the project because the project would use federal funds from the Federal Highway Administration (FHWA).

16 United States Code (USC) 431–433 (the Antiquities Act) prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered "objects of antiquity" by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.

16 USC 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

23 USC 1.9(a) requires that the use of federal-aid funds must be in conformity with federal and state law.

23 USC 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431–433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

The basis for assessments of paleontological sensitivity (i.e., potential to contain scientifically important paleontological resources) followed standard California Department of Transportation (Caltrans) criteria (California Department of Transportation 2014), which have three categories to describe the likelihood that a geologic unit contains significant fossil materials—high potential, low potential, and no potential, as defined in Table 2.2.4-1.

Table 2.2.4-1. California Department of Transportation Paleontological Sensitivity Terminology

Caltrans Sensitivity Designation	Characteristics of Geologic Units in This Category
High Potential (High Sensitivity)	This category consists of rock units known to contain important vertebrate, invertebrate, or plant fossils anywhere within their geographic extent, including sedimentary rock units that are suitable for the preservation of fossils, as well as some volcanic and low-grade metamorphic rock units. This category includes rock units with the potential to contain the following. • Abundant vertebrate fossils. • A few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data. • Areas that may contain datable organic remains older than Recent, including *Neotoma* (sp.) middens. • Areas that may contain unique new vertebrate deposits, traces, and/or trackways. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive.
Low Potential (Low Sensitivity)	This category includes sedimentary rock units that have the following characteristics: • Are potentially fossiliferous but have not yielded significant fossils in the past. • Have not yet yielded fossils but have the potential to contain fossil remains. • Contain common and/or widespread invertebrate fossils of species whose taxonomy, phylogeny, and ecology are well understood. *Note that sedimentary rocks expected to contain vertebrate fossils are considered highly sensitive, because vertebrates are generally rare and found in more localized strata.*
No Potential (No Sensitivity)	This category includes rock units and deposits that are either too young to contain fossils or are of intrusive igneous origin, most extrusive igneous rocks, and moderate- to high-grade metamorphic rocks.

Source: California Department of Transportation 2014.

2.2.4.2 Affected Environment

A combined Paleontological Evaluation Report (PER) and Paleontological Mitigation Plan (PMP) was prepared for this report (ICF 2016) because the preliminary environmental analysis report (PEAR) prepared for the project indicated that the proposed project was situated in highly sensitive geologic units known to contain significant, non-renewable paleontological resources. This section is based on the findings of the PER/PMP.

The geologic formations underlying the project area are described in Section 2.2.3, Geology/Soils/Seismic/Topography/Mineral Resources. Their paleontological sensitivity is described below, and a generalized stratigraphic column of the geologic units present in the project area is shown in Table 2.2.4-2.

Table 2.2.4-2. Generalized Stratigraphic Column and Location of Geologic Units Present in the Project Area

Age	Geologic Unit	Location
Holocene	Dredge and Mine Tailings	Northern tip of Segment 1
Pleistocene	Modesto Formation	Northern tip of Segment 2
	Riverbank Formation	Most of Segment 2
	Red Bluff Formation	Northern third of Segment 1
	Turlock Lake Formation	Central third of Segment 1
Pliocene-Pleistocene	Tuffs of Oroville–Nomlaki Tuffs	Not present
Pliocene	Laguna Formation	Southern third of Segment 1

Source: Helley and Harwood 1985.
Note: Only geologic units present in the project area are shown.

The paleontological sensitivity of the geologic units that occur in the project area are described below in the order in which they occur at the surface in the project area, from north to south, rather than in chronological order.

Dredge or Mine Tailings

The dredge or mine tailings have low potential to contain fossils because they are primarily reworked gravels and cobbles. The depth of the tailings, however, is unknown, and the tailings may be underlain by the Modesto or Riverbank Formations. (See the discussion for those formations for paleontological sensitivity.)

Red Bluff Formation

Two records of Pleistocene horse fossils are known from the Red Bluff Formation (University of California Museum of Paleontology 2016). These fossils occur in Yolo County, but the unit is considered sensitive for paleontological resources throughout its extent.

Laguna Formation

Although there are no known records of fossils in the Laguna Formation (University of California Museum of Paleontology 2015a), nonmarine Pliocene deposits are a regionally extensive and are considered sensitive throughout their extent.

Turlock Lake Formation

The Turlock Lake Formation is well known for the vertebrate fossils that have been recovered from this unit in the Central Valley. The Irvingtonian (approximately 780,000 years old) Fairmead Landfill Locality contains significant vertebrate fossils from this formation, including remains of horse, ground sloth (Jefferson's ground sloth and Harlan's ground sloth), saber-toothed cat, Armbruster's wolf, scimitar-toothed cat, llama, *Tetrameryx irvingtonensis Stirton* (an ancestor to modern pronghorn), deer, camel, mammoth, smooth-toothed pocket gopher, Capromeryx (pronghorn-like ungulates), coyote, *Miracinonyx trumani* (American cheetah-like cat), turtle, and tortoise (Dundas et al. 1996; Axelrod 1980). Excavations for Caltrans' Fresno SR 180 West Freeway Project uncovered fossil specimens from a Pleistocene-age camel in sediments of the Turlock Lake Formation in Fresno

County (Hansen 2008). Because of its vertebrate fossil content, the Turlock Lake Formation is considered highly sensitive for paleontological resources.

Modesto Formation

California's Pleistocene sedimentary units—especially those that, like the Modesto and Riverbank Formations, record deposition in continental settings—are typically considered highly sensitive for paleontological resources because of the large number of recorded fossil finds in such units throughout the state. Consistent with this pattern, the University of California Museum of Paleontology (UCMP) database contains numerous records for vertebrate fossils in this unit. These include horse, mammoth, ground sloth, camel, and bison (University of California Museum of Paleontology 2015d). There are 137 mapped records of fossils (including 22 vertebrates) in Butte County.

Riverbank Formation

As described for the Modesto Formation, Pleistocene sedimentary units are typically considered highly sensitive for paleontological resources. The Pleistocene age of the Riverbank Formation is well represented by important fossils recovered from excavations at the Arco Arena site in 1989 and more than a dozen other localities. Fossil finds in the Riverbank Formation include mammoth, bison, camel, horse, ground sloth, dire wolf, rodents, moles, birds, and bony fish (University of California Museum of Paleontology 2015b).

In addition, the UCMP database has one record of an avian fossil from an unidentified Pleistocene unit in Butte County (University of California Museum of Paleontology 2015c). Because of its vertebrate fossil content, the Riverbank Formation is considered highly sensitive for paleontological resources.

Project Area

There are no fossil localities in the project boundaries; however, as stated previously, all formations in the project area, with the exception of the dredge tailings, have the potential or are known to contain significant paleontological resources.

2.2.4.3 Environmental Consequences

If fossils are present in the project area, they could be damaged by earth-disturbing activities (i.e., excavation and grading) during construction. The more extensive and deeper the earth-disturbing activity, the greater the potential for damage to paleontological resources (Table 2.2.4-3). The potential for impact is uniform across the project area because the entire project area is directly underlain by geologic units (Figure 2-4) with potential to contain fossils, with the exception of the small, northernmost portion of Segment 1 underlain by dredge or mine tailings.

- The greatest amount of excavation would occur near the intersection of State Route (SR) 70 and Ophir Road, where a road cut in the hill would be widened. This hill is an outcrop of the Red Bluff, Laguna, and Turlock Lake Formations. All of these units are considered sensitive for paleontological resources.
- Segment 2 is directly underlain by the Riverbank Formation and the Modesto Formation, which are both sensitive for paleontological resources.

- Ground disturbance for the construction of ancillary facilities, including supporting facilities, temporary construction offices, and construction staging areas, also could disturb native sediment, with potential for impacts on paleontological resources.

Depending on the location and depth of construction activities, impacts could be adverse. As shown in Table 2.2.4-3, road widening, reestablishment of ditches, relocation of sewer lines, and installation of a box culvert would require excavation up to 55 feet below the ground surface, which could damage paleontological resources. With implementation of the mitigation measures described in Section 2.2.4.4, these effects would be reduced to a less-than-significant level.

Table 2.2.4-3. Location and Depth of Excavation for Construction Activities and Paleontological Sensitivity of Geologic Affected

Area	Segment	Construction Activity	Depth of Excavation (feet)	Geologic Unit Affected	Paleontological Sensitivity of Geologic Unit
Entire project length	1 and 2	Reestablishment of ditches	2–6	Dredge or mine tailings	Low
				Red Bluff, Laguna, and Turlock Lake Formations	Low
				Riverbank Formation	High
				Modesto Formation	High
Ophir Road	1	Road widening	2–55	Red Bluff, Laguna, and Turlock Lake Formations	Low
Ophir Road and Pacific Heights Road	1	Relocation of sewer line	2–12	Red Bluff, Laguna, and Turlock Lake Formations	Low
Oak Knob Draw	2	Box culvert extension	4–10	Riverbank Formation	High

Because all the build alternatives would occur within the same area, they would affect the same sensitive geologic units. The depth and extent of excavation would also be very similar among the alternatives. For these reasons, all build alternatives would have the same potential effect on sensitive geologic units and significant paleontological resources.

Under the No-Build Alternative, the project would not be built, and there would be no construction-related effects on paleontological resources.

2.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

The likelihood of encountering a paleontological resource during construction is low for most of the project area. However, because ground disturbance during construction activities could disturb unknown paleontological resources, the following avoidance, minimization, and/or mitigation measures would be implemented.

PALEO-1: Prepare and Implement a Paleontological Mitigation Plan

1. A non-standard provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with paleontological salvage.
2. If paleontological resources are discovered during earth-moving activities, the construction crew will immediately cease work within a 60-foot radius of the find and notify the resident engineer. In the event paleontological resources are discovered, fossil specimens will be properly collected and sufficiently documented to be of scientific value.
3. The collection and treatment actions described in the PMP will occur during the grading and construction process and after recovery of specimens if fossils are found, including sampling for microfossils, conducting paleomagnetic analysis, identifying and preparing fossils, arranging for a repository, and preparing a final report.

PALEO-2: Comply with Caltrans Standard Specifications Section 14-7

For all excavations, contactors will be required to implement the provisions of Caltrans Standard Specifications Section 14-7, which include a work stoppage and appropriate follow-up if paleontological resources are encountered during project construction.

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2.2.5 Hazardous Waste/Materials

2.2.5.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.2.5.2 Affected Environment

The existing conditions presented in this section are based on review of the *Phase I Initial Site Assessment, State Route 70 Widening Project, Butte County and Yuba County, California* prepared in March 2013 and the *Draft Limited Aerially Deposited Lead Screening SR-70 Corridor Improvements Project, Butte County, CA* prepared February 2015.

The phase I initial environmental site assessment, performed between February 20 and March 16, 2016, identified and evaluated potential hazardous waste sites. The work is relevant to both build alternatives and included the following tasks:

- Site visit and visual inspection of the project footprint
- Review of previous environmental reports about the project site
- Review of site background, including historic and recent aerial photographs, topographic maps, and Sanborn maps
- Review of government database of hazardous waste sites within a 0.25-mile radius
- Review of available agency records for the project site
- Preparation of a written report summarizing the records search results

The scope of work was limited to observation of the surface at a specific time, a limited aerial survey review, and environmental database research. No other particular limitations are noted in the initial environmental site assessment, which was prepared in accordance with generally accepted environmental assessment practices.

The purpose of the limited aerially deposited lead (ADL) screening was to assess the presence of ADL in near surface soil throughout the project corridor. The scope of this assessment included two segments of the project corridor comprising a total of approximately 6-miles of roadway extending from Ophir Road on the north to Cox Lane on the south. Compared to a more comprehensive assessment, the limited screening includes a reduced frequency of sample locations, and collection and analyses of surface samples only.

Records Search

A hazardous materials site records search was conducted that included information gathered from several government environmental databases compiled by federal, state, and local governmental agencies. No sites were identified within the 0.25-mile search area that are likely to have adversely impacted the project corridor.

Site Reconnaissance Survey

The site reconnaissance survey for the proposed project corridor was conducted on January 28, 2013, February 7, 2013, February 19, 2013, February 22, 2013 and February 25, 2013. The survey consisted of visually inspecting the project corridor and neighboring facilities within the project vicinity. The primary land use in the project vicinity is agricultural, although there are areas of residential, commercial and industrial use. Several above-ground storage tanks were observed within close proximity of the project area. If not properly used or maintained these tanks can contribute to petroleum hydrocarbon, pesticide and/or herbicide contamination of nearby soil and water. No soil staining or obvious malfunctions were noted.

Mining Tailings

Historical aerial photographs, topographic maps and Sanborn Fire Insurance maps were reviewed to determine prior activities and land uses within the project corridor. Topographic maps denoted large areas of tailing waste from historical gold mining activities. Spent tailings piles can contain elevated levels of heavy metals and contribute to increased turbidity of surface runoff. Due to the proximity of the piles however, they are unlikely to directly impact the project corridor.

Aerially Deposited Lead

Aerially deposited lead (ADL) is attributed to the historic use of leaded gasoline. Areas of primary concern are soils along routes that have had high vehicle emissions from large traffic volumes or congestion during the time when leaded gasoline was in use (generally prior to 1986). Along roads where the shoulder subgrade has not been disturbed, the presence of ADL is generally limited to the upper 24 inches. Lead concentrations typically drop rapidly with increasing depth below the ground surface. Portions of the SR 70 alignment assessed were constructed prior to 1987; therefore, the potential for ADL exists.

ADL-contaminated soil is defined in the Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (DTSC Agreement) between DTSC and Caltrans as excavated soil, based on a 95% upper confidence limit (95% UCL), that contains total lead greater than Total Threshold Limit Concentration (TTLC) of 1,000 mg/kg, and/or Soluble Waste Extraction Test (WET) lead levels greater than or equal to 5 mg/l.

Investigations for ADL for the proposed project included collecting 63 samples from locations along the northbound and southbound shoulders of SR-70 from Ophir Road to Cox Lane. Samples were obtained from locations within seven lateral feet of the existing pavement edge, in areas anticipated to be disturbed by the planned construction activities. Soil samples were collected using a hand trowel, from a depth of zero to six inches below ground surface.

Sixty-three soil samples were analyzed for total lead. Fourteen samples exhibited total lead concentrations exceeding 50 milligrams per kilograms (mg/kg) in which 13 samples[1] were further tested for soluble lead using the WET methodology. The 50 mg/kg threshold indicates a sample has the potential to exceed the Soluble Threshold Limit Concentration (STLC) of 5 milligrams per liter (mg/l), which is one criteria used for defining hazardous waste in California. Soluble lead results ranged from 1.2 to 10.0 mg/l, with five samples exhibiting soluble lead levels exceeding the individual STLC for lead of 5.0 mg/l.

The highest total lead concentration occurred in samples taken north of Oakwood Lane; therefore, this area was evaluated as a separate data group to determine the need for further evaluation. The statistical analysis results of total lead 95% UCL of 69.05 mg/kg and soluble lead 95% UCL of 3.67 mg/l for the sample population north of Oakwood Lane are below their respective threshold values. Furthermore, the statistical analysis results of total lead 95% UCL of 41.32 mg/kg and soluble lead 95% UCL of 2.2 mg/l for the entire sample population are also below their respective threshold values.

[1] The fourteenth sample was not analyzed due to insufficient quantity of sample for laboratory preparation.

Based on individual analytical test results, total lead concentrations are at or below 210 mg/kg, well below the 1,000 mg/kg Total Threshold Limit Concentration (TTLC) for lead. As a result, it is not anticipated lead impacted soil within project limits would be classified as hazardous waste.

Yellow Thermoplastic Striping

State Route 70 has yellow pavement striping and markings. Yellow thermoplastic striping and yellow painted markings may contain elevated concentrations of lead chromate and hexavalent chromium manufactured before 2005 and painted markings manufactured before 1997.

Agricultural Land Uses

Much of the project area consists of agricultural properties. It is very possible that arsenic would be present in surface soils because historical agricultural practices used herbicides that were organic compounds containing arsenic. Activities conducted on agricultural parcels involve the use of agricultural chemicals, including pesticides, insecticides, and herbicides.

Treated Wood Waste

Treated wood is wood with preservative chemicals that protect it from insect attack and fungal decay during its use. Typical uses in the highway environment include sign posts, metal beam guardrail wood posts, and lagging on retaining walls. The chemical preservatives used are hazardous and pose a risk to human health and the environment. Arsenic, chromium, copper, creosote, and pentachlorophenol are among the chemicals used. These chemicals are known to be toxic or carcinogenic. Harmful exposure to these chemicals may result from dermal contact with treated wood waste (TWW) or from inhalation or ingestion of TWW particulate (e.g., sawdust and smoke) as this material is handled.

Known Potentially Hazardous Sites and Other Potential Hazards

There is past soil contamination associated with a diesel spill that occurred at 3454 SR 70, Oroville, located on a parcel, a portion of which is proposed to be acquired under all Alternatives. However, documentation indicates that the spill was cleaned up and the case closed. Therefore, no adverse effects for the environment or human health are expected.

The proposed project includes standard work consistent with roadway construction and widening including grading, paving, striping, and installing drainage facilities, roadside signs, and signal equipment. No structures are proposed to be removed or demolished. Therefore, the project would not expose workers or the environment to structures or materials containing asbestos or treated wood waste.

2.2.5.3 Environmental Consequences

Humans and the environment could be exposed to hazardous conditions from the accidental release of hazardous materials during construction activities. Construction would involve the use of heavy equipment, involving small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment) that may result in hazardous conditions in the project area.

Disturbing either yellow or white pavement markings by grinding or sandblasting or removal of treated wood posts or guardrails could expose construction workers or the general public to lead chromate and other harmful chemicals unless standard removal protocols are followed. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health. Soils on agricultural parcels could contain hazardous chemicals from past pesticide/herbicide use. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health.

ADL from the historical use of leaded gasoline, exists along roadways throughout California. If encountered, soil with elevated concentrations of lead as a result of ADL on the state highway system right of way within the limits of the project will be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met.

Effects of the No-Build Alternative

No construction would take place under the No-Build Alternative; therefore, there would be no potential to expose workers or nearby land uses to soil contamination or hazardous materials from construction activities. The No-Build Alternative would not result in right-of-way acquisition or construction disturbance. Accordingly, the No-Build Alternative would not result in any direct effects regarding hazardous wastes or materials.

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

HAZ-1: Avoid and Minimize the Potential for Effects from Hazardous Waste or Materials during Project Construction

Contractors would be required to work under a health and safety plan and soil management plan. These plans would be prepared to address worker safety when working with potentially hazardous materials, including soils potentially containing aerially deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans would provide for identification of potential hazardous materials at the work site and for specific actions to avoid worker exposure.

HAZ-2: Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow/White Traffic Striping along Existing Roadways

As required by Caltrans' standard special provisions, the construction contractor will sample and test yellow/white traffic striping scheduled for removal to determine whether lead or chromium is present. The construction contractor will also implement a project specific lead compliance plan prepared by a Certified Industrial Hygienist (CIH) as required by Cal/OSHA.

All aspects of the project associated with removal, storage, transportation, and disposal will be in strict accordance with appropriate regulations of the California Health and Safety Code. The stripes will be disposed of at a Class 1 disposal facility. These grindings (which consist of the roadway material and the yellow color traffic stripes) will be removed and disposed of in accordance with Standard Special Provision 36-4 (Residue Containing High Lead Concentration Paints) (http://www.dot.ca.gov/hq/env/haz/hw_sp.htm) which requires a Lead Compliance Plan.

The responsibility of implementing this measure will be outlined in the contract between Caltrans and the construction contractor. Implementing this measure will minimize potential effects from these hazardous materials.

HAZ-3: Perform Soil Testing and Dispose of Contaminated Soils Appropriately

To prevent exposure of workers and the public to contaminated soils, requirements as detailed in the DTSC Agreement will be followed. In addition, surface soils from potentially contaminated areas would be screened and contaminated soils disposed of appropriately. Soil excavated from the surface to a depth of 1 foot can be reused within Caltrans right of way if covered with at least one foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within Caltrans ROW, then the excavated soil should be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Therefore, screening of surface soils for residual chemical contamination will occur for any parcels to be acquired and if soils are to be moved off agricultural parcels, to non-agricultural parcels. Soils testing positive should be removed off site to a permitted treatment/disposal facility. This testing should be completed before construction activities.

HAZ-4: Develop a Lead Compliance Plan

The Contractor shall prepare a project-specific Lead Compliance Plan to minimize worker exposure to lead-impacted materials. The plan will include protocols for environmental and personal monitoring, requirements for person protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted materials. Screening of surface soils for lead contamination will occur for any parcels to be acquired before construction activities.

HAZ-5: Develop and Implement Plans to Address Worker Health and Safety

As necessary, and as required by Caltrans and federal and state regulations, plans such as a health and safety plan, BMPs, and/or an injury and illness prevention plan will be prepared and implemented to address worker safety when working with potentially hazardous materials, including potential TWW, lead or chromium in traffic stripes, ADL, and other construction-related materials within the right-of-way during any soil-disturbing activity.

If project components are removed that may contain TWW (e.g., sign posts, metal beam guardrail wood posts, and lagging on retaining walls), the contractor must prepare and submit a safety and health work practices plan for handling TWW approved by an American Board of Industrial Hygiene Certified Industrial Hygienist. TWW must be disposed of in an approved TWW facility. Construction workers who handle this material must be provided training that includes the following.

- All applicable requirements of Title 8 CCR;
- Procedures for identifying and segregating TWW;
- Safe handling practices;
- Requirements of Title 22 CCR, Division 4.5, Chapter 34; and
- Proper disposal methods.

2.2.5.5 References Cited

Chico Environmental. 2013. March. Phase I Initial Site Assessment, State Route 70 Widening Project, Butte County and Yuba County, California. Prepared for Lumos & Associates, Inc. Chico, CA.

Blackburn Consulting. 2015. February. Draft Limited Aerially Deposited Lead Screening SR-70 Corridor Improvements Project, Butte County, CA. Prepared for Mark Thomas and Company. West Sacramento, CA.

2.2.6 Air Quality

2.2.6.1 Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM10) and particles of 2.5 micrometers and smaller (PM2.5), and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to a State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional—or, planning and programming—level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO_2, O_3, PM10, and PM2.5, and in some areas (although not in California) SO_2. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for Pb; however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether the implementation of

those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[1] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

2.2.6.2 Affected Environment

Information presented in this section is based on the May 2016 *Air Quality Study Report* prepared for the proposed project (ICF 2016).

Location Climate and Meteorology

The proposed project is located in Butte County, California, within the Sacramento Valley Air Basin (SVAB). The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, and Yolo Counties, as well as parts of Solano and Placer Counties. The SVAB is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and Sierra Nevada Range. The San Joaquin Valley Air Basin lies to the south.

The SVAB has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters. During the winter, the North Pacific storm track intermittently dominates valley weather, and fair weather alternates with periods of extensive clouds and precipitation. Also characteristic of winter weather in the SVAB are periods of dense and persistent low-level fog that is most prevalent between storms. The frequency and persistence of heavy fog in the SVAB diminishes with the approach of spring. In Butte County, winters are generally mild with daytime average temperatures in the low 50s (°F) and nighttime temperatures in the upper 30s (°F). Temperatures range from an average January low of approximately 36°F to an average July high of approximately 96°F, although periodic lower and higher temperatures are common.

[1] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

Diminished air quality within Butte County largely results from local air pollution sources, transport of pollutants into the area from the south, the northern SVAB topography, prevailing wind patterns, and certain inversion conditions that differ with the season. During the summer, sinking air forms a "lid" over the region, confining pollution within a shallow layer near the ground that leads to photochemical smog and visibility problems. During winter nights, air near the ground cools while the air above remains relatively warm, resulting in little air movement and localized pollution hot spots near emission sources. CO, nitrogen oxides (NO_X), PM, and lead particulate concentrations tend to elevate during winter inversion conditions when little air movement may persist for weeks.

Existing Air Quality Conditions

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that federal and state governments have established for various pollutants by monitoring data collected in the region. The nearest air quality monitoring station in the vicinity of the project area that reported pollutant concentrations between 2012 and 2016 is the Chico-East Avenue monitoring station, located at 984 East Avenue, which is approximately 25 miles north of the proposed project (Table 2.2.6-1). Air quality standards are summarized in Table 2.2.6-2.

Table 2.2.6-1. Ambient Air Quality Monitoring Data Measured at the Chico-East Avenue Monitoring Station

Pollutant Standards	2012	2013	2014	2015	2016
O_3					
Maximum 1-hour concentration (ppm)	0.077	0.086	0.096	0.080	0.080
Maximum 8-hour concentration (ppm)	0.070	0.076	0.078	0.069	0.074
Number of days standard exceeded[a]					
CAAQS 1-hour (>0.09 ppm)	0	0	1	0	0
CAAQS 8-hour (>0.070 ppm)	0	1	2	0	1
Nitrogen Dioxide (NO_2)					
State maximum 1-hour concentration (ppb)	39	42	42	41	32
State second-highest 1-hour concentration (ppb)	36	42	40	40	31
Annual average concentration (ppb)	*	8	8	8	7
Number of days standard exceeded[a]					
CAAQS 1-hour (0.18 ppm)	0	0	0	0	0
Carbon Monoxide (CO)					
Maximum 8-hour concentration (ppm)	1.5	1.5	2	1.3	1.4
Maximum 1-hour concentration (ppm)	1.7	2.5	2.9	1.6	1.7
Number of days standard exceeded[a]					
NAAQS 8-hour (≥9 ppm)	0	0	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0	0	0
NAAQS 1-hour (≥35 ppm)[c]	0	0	0	0	0

Pollutant Standards	2012	2013	2014	2015	2016
Particulate Matter (PM10)					
National[b] maximum 24-hour concentration (μg/m³)	55.6	59.0	40.1	67.8	58.1
National[b] second-highest 24-hour concentration (μg/m³)	45.5	51.4	38.8	67.6	57.0
State[c] maximum 24-hour concentration (μg/m³)	55.4	61.1	47.6	66.4	57.0
State[c] second-highest 24-hour concentration (μg/m³)	45.2	50.1	13.9	65.5	56.6
National annual average concentration (μg/m³)	16.8	24.3	19.4	21.6	20.8
State annual average concentration (μg/m³)[d]	*	24.8	*	*	20.6
Number of days standard exceeded[a]					
NAAQS 24-hour (>150 μg/m³)[e]	0	0	0	0	0
CAAQS 24-hour (>50 μg/m³)[e]	1	1	0	8	8
Particulate Matter (PM2.5)					
National[b] maximum 24-hour concentration (μg/m³)	22.5	38.8	58.6	39.0	37.2
National[b] second-highest 24-hour concentration (μg/m³)	20.7	35.6	32.5	37.9	26.8
State[c] maximum 24-hour concentration (μg/m³)	29.2	38.8	62.8	39.0	45.9
State[c] second-highest 24-hour concentration (μg/m³)	27.6	37.5	35.1	37.9	36.3
National annual average concentration (μg/m³)	*	10.0	8.8	9.1	7.6
State annual average concentration (μg/m³)[d]	*	*	8.8	*	*
Number of days standard exceeded[a]					
NAAQS 24-hour (>35 μg/m³)	0	2	1	2	1

Source: California Air Resources Board 2017; U.S. Environmental Protection Agency 2017a.

CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
* = insufficient data available to determine the value.
ppm = parts per million.
μg/m³ = micrograms per cubic meter.

[a] An exceedance is not necessarily a violation.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[d] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[e] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Table 2.2.6-2. National and California Ambient Air Quality Standards Applicable in California

			Standard (ppm)		Standard (µg/m^3)		Violation Criteria	
Pollutant	Symbol	Average Time	California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.070	137	137	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	0.100	339	188	If exceeded	NA
Sulfur dioxide	SO_2	Annual arithmetic mean	NA	0.030	NA	NA	NA	If exceeded
		24 hours	0.04	0.14	105	NA	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	75	655	196	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable PM	PM10	Annual arithmetic mean	NA	NA	20	NA	If exceeded	If exceeded at each monitor within area
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	12.0	If exceeded	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	35	NA	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded

Pollutant	Symbol	Average Time	Standard (ppm)		Standard (µg/m³)		Violation Criteria	
			California	National	California	National	California	National
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded on more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA
		Rolling 3-month average	NA	NA	NA	0.15	If equaled or exceeded	Averaged over a rolling 3-month period

Source: California Air Resources Board 2016.

Notes: All standards are based on measurements at 25°C and 1 atmosphere pressure; national standards shown are the primary (health effects) standards.

ppm = parts per million.

µg/m³ = micrograms per cubic meter.

NA = not applicable.

Attainment Status

U.S. EPA has classified a portion of Butte County, including the project area, as marginal nonattainment for the federal 8-hour 0_3 standard. The Chico Urbanized Area is also designated moderate maintenance for the federal CO standard, but the rest of Butte County, including the project area, is in attainment. U.S. EPA has classified all of Butte County as a nonattainment area for the federal PM2.5 standard and an attainment area for the federal PM10 standard. ARB has classified all of Butte County as a nonattainment area for the state 8-hour O_3, PM2.5, and PM10 standards, and an attainment area for the state CO standard. Table 2.2.6-3 summarizes the federal and state criteria pollutant attainment status of the project area.

Table 2.2.6-3. Attainment Status of the Project Area in Butte County

	Attainment Status	
Pollutant	State	Federal
8-hour O_3	Nonattainment	Marginal Nonattainment
CO	Attainment	Attainment[a]
PM10	Nonattainment	Attainment
PM2.5	Nonattainment	Nonattainment

Sources: U.S. Environmental Protection Agency 2016; California Air Resources Board 2016.

[a] The Chico Urbanized Area is designated moderate maintenance for the federal CO standard, but the project area is located in an attainment area for the federal CO standard.

Sensitive Receptors

The Butte County Air Quality Management District (BCAQMD) defines *sensitive receptors* as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of sensitive receptors include schools, hospitals, residential areas, and parks.

Agricultural land uses surround the project area. There are no hospitals, parks, or places of worship within 1,000 feet of the proposed project. However, several driveways exist along the highway that serve residential properties, with the closest residential property approximately 50 feet from the traveled way. The highest concentration of single-family homes is just south of Palermo Road in Oak Grove. Feather River Adventist School is at the southern terminus of the proposed project at the intersection of State Route (SR) 70 and Cox Lane.

2.2.6.3 Environmental Consequences

Information presented in this section is based on the May 2016 *Air Quality Study Report* prepared for the proposed project (ICF 2016). From a traffic operations perspective, the three Build Alternatives of the proposed project differ only in terms of where the widening along SR 70 would occur. Traffic volumes, speeds, and other operational conditions under the three alternatives are therefore identical. Accordingly, the operational impact assessment is based on a single set of traffic conditions, which is representative of all three Build Alternatives.

Effects of the Build Alternatives

Regional Conformity

The proposed project is listed in the 2016 financially constrained Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which was found to conform by the Butte County Association of Governments (BCAG) on December 8, 2016, and FHWA and FTA made a regional conformity determination finding on March 21, 2017. The project is also included in BCAG's financially constrained 2017 FTIP, pages 43–44. The BCAG 2017 FTIP was determined to conform by FHWA and FTA on March 21, 2017. The design concept and scope of the proposed project is consistent with the project description in the 2016 RTP/SCS, 2017 FTIP, and the "open to traffic" assumptions of BCAG's regional emissions analysis (Butte County Association of Governments 2016a, 2016b).

Project Level Conformity

Carbon Monoxide

CO hotspots were evaluated at roadway intersections within the project area for existing (2014), construction (2020), and design (2040) year conditions. Modeled traffic volumes and operating conditions were obtained from the traffic analysis report for the proposed project. Ambient CO concentrations near the project area roadways under future project conditions were modeled using CALINE4. Only the evening peak-hour traffic was modeled because the traffic data indicated that levels of service and delays would be worse in the evening peak hour than in the morning peak hour.

CO modeling was conducted at the following four roadway intersections.

- SR 70/Ophir Road
- SR 70/Palermo Road
- SR 70/Power House Hill Road
- SR 70/Cox Lane

Table 2.2.6-4 summarizes the results of the CO modeling for the Build and No Build Alternatives. Based on these results, the Build Alternatives would not be expected to contribute to any new localized violations of the 1- or 8-hour NAAQS or CAAQS for CO.

Table 2.2.6-4. CO Concentrations at Study Area Intersections (parts per million)

		Existing (2014)		Construction (2020)		Design (2040)	
Intersection	Receptor[a]	1-hr CO[b]	8-hr CO[c]	1-hr CO[b]	8-hr CO[c]	1-hr CO[b]	8-hr CO[c]
1. SR 70/ Ophir Road	1	3.11	2.51	2.91	2.37	2.61	2.16
	2	3.01	2.44	2.81	2.30	2.51	2.09
	3	3.11	2.51	3.01	2.44	2.51	2.09
	4	3.01	2.44	2.91	2.37	2.51	2.09
2. SR 70/ Palermo Road	5	2.91	2.37	2.61	2.16	2.41	2.02
	6	3.01	2.44	2.91	2.37	2.71	2.23
	7	3.11	2.51	2.81	2.30	2.61	2.16
	8	2.81	2.30	2.71	2.23	2.51	2.09
3. SR 70/ Power House Hill Road	9	2.81	2.30	2.61	2.16	2.41	2.02
	10	3.01	2.44	2.81	2.30	2.61	2.16
	11	3.01	2.44	2.81	2.30	2.61	2.16
	12	3.01	2.44	2.81	2.30	2.61	2.16
4. SR 70/ Cox Lane	13	2.71	2.23	2.61	2.16	2.41	2.02
	14	3.11	2.51	2.81	2.30	2.61	2.16
	15	3.01	2.44	2.81	2.30	2.61	2.16
	16	2.81	2.30	2.61	2.16	2.41	2.02

[a] Receptors are located at 3 meters from the intersection, at each of the four corners. All intersections modeled have two intersecting roadways.

[b] Average 1-hour background concentration between 2012 and 2014 was 1.7 ppm (California Air Resources Board 2015).

[c] Average 8-hour background concentration between 2012 and 2014 was 1.53 ppm (U.S. Environmental Protection Agency 2017).

Particulate Matter

Projects of Air Quality Concern (POAQCs) are certain highway and transit projects that involve significant levels of diesel traffic or any other project identified as a localized air quality concern in the SIPs for PM2.5 and PM10. The Build Alternatives would not be considered a POAQC, as defined by 40 CFR 93.123(b)(1), which discusses five types of projects (listed below).

1. **New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles.**

   Appendix B from the EPA's Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas provides guidance on what types of projects may be projects of local air quality concern (40 CFR 93.123[b][1]). Appendix B indicates that a facility with an Annual Average Daily Traffic (AADT) volume of 125,000 and 8 percent trucks (10,000 truck AADT) are likely considered a POAQC. AADT on SR 70 within the project area under design year (2040) conditions, which represents the year with maximum AADT, would range between 17,700 and 24,200. Heavy-duty trucks comprise 12 percent of this AADT, resulting in a truck AADT of 2,124 to 2,904. While the percentage of trucks slightly exceeds 8 percent of total AADT, truck volumes would be well below the U.S. EPA's guidance criteria of 10,000 vehicles per day (maximum truck volume is 2,904), which is the main point on

which this criterion is judged. Moreover, as the Build Alternatives are designed to accommodate future traffic volumes, rather than facilitate growth, they would not increase AADT or truck volumes on SR 70 within the project area, relative to the No Build Alternative. Accordingly, the Build Alternatives would not serve a significant number of diesel vehicles or result in a significant increase in diesel vehicles.

2. **Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.**

   Peak-hour level of service (LOS) and delay at study area intersections under construction year (2020) and design year (2040) conditions are presented in Tables 1 and 3 in Appendix C of the *Air Quality Study Report* (ICF 2016). Table 1 in Appendix C indicates that intersections 1 through 3 would operate at LOS D or worse under the No Build Alternative during the construction year PM peak period, while intersections 1 and 2 would operate at LOS D or worse under AM peak hour conditions. Implementation of the Build Alternatives would reduce vehicle delay and congestion at intersections 1 and 2, improving LOS under both morning and evening conditions to LOS C or better. The westbound turn lane at intersection 3 would operate at LOS D under the Build Alternatives, but vehicle delay would be reduced relative to the No Build Alternative (27.3 seconds per vehicle vs. 44.8 seconds per vehicle).

   Under design year (2040) conditions, all four intersections would operate at LOS D or worse under the No Build Alternative during the evening peak hour, whereas three intersections would operate at LOS D or worse under morning peak period conditions. Implementation of the Build Alternatives would improve conditions to LOS C or better at two intersections. Turn lanes at two intersections would continue to operate at LOS D or worse under the Build Alternatives, but overall vehicle delay would either remain constant or improve relative to the No Build Alternative.

   Implementation of the Build Alternatives would not degrade LOS or increase vehicle delay at any of the study area intersections. Rather, the Build Alternatives would improve LOS and reduce congestion at intersections at three intersections (there would be no effect on traffic at one intersection). While two intersections would operate at LOS D or worse under design year (2040) build conditions, the proposed project would neither serve a significant number of diesel vehicles nor increase the number of diesel vehicles relative to the No Build Alternative (refer to criteria 1).

3. **New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.**

   The proposed project does not include new bus or rail terminals and transfer points.

4. **Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location**.

   The proposed project does not include expanded bus or rail terminals and transfer points.

5. **Projects in or affecting locations, areas, or categories of sites which are identified in the PM2.5 or PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.**

   Currently, there is no SIP for the federal PM2.5 standard.

The proposed project underwent interagency consultation through BCAG's Interagency Consultation Review Group (ICRG). The U.S. EPA and FHWA issued concurrence that the proposed project is not a POAQC on January 31, 2016, and February 4, 2016, respectively. Appendix C of the *Air Quality Study Report* (ICF 2016) contains the documentation submitted to BCAG and used to support its concurrence, as well as concurrence letters from U.S. EPA and FHWA that the proposed project is not a POAQC.

Naturally Occurring Asbestos

According to the California Department of Conservation's 2000 publication, *A General Location Guide for Ultramafic Rocks in California*, there are no geologic features normally associated with naturally occurring asbestos (NOA) (i.e., serpentine rock or ultramafic rock near fault zones) in or near the project area (California Department of Conservation 2000). As such, there is no potential for effects related to NOA emissions.

Mobile Source Air Toxics

Mobile source air toxics (MSATs) are a subset of the 187 air toxics defined by the Clean Air Act. MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

FHWA has issued an updated interim guidance using a tiered approach on how MSATs should be addressed in NEPA documents for highway projects (U.S. Federal Highway Administration 2016). Based upon the volume of traffic on the roadway, the Build Alternatives are considered a project with low potential for MSAT effects, and therefore a qualitative analysis of potential MSAT emissions was performed, consistent with FHWA guidance.

For each alternative, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build Alternatives are slightly higher than for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for Build Alternatives along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the U.S. EPA's MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. Because the estimated VMT under each of the Build Alternatives are nearly the same, varying by less than 0.005 percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year (2040) as a result of U.S. EPA's national control programs, which are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (U.S. Federal Highway Administration 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the U.S. EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the Build Alternatives will have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher under certain Build Alternatives than under the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built along the new/expanded roadway between Palermo Road and Power House Hill Road. However, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset by increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, U.S. EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Air toxics analysis is a new and emerging field and is a continuing area of research. Currently, limited tools and techniques are available for assessing project-specific health impacts from MSAT because there are no established criteria for determining when their emission should be considered a significant issue in the environmental context.

To comply with Council on Environmental Quality regulations (40 CFR 1502.22[b]) regarding incomplete or unavailable information, Appendix D of the *Air Quality Study Report* for the proposed project (ICF 2016) provides a discussion of air toxics analysis as an emerging field and the current state of scientific techniques, tools, and data, which are not sufficient to accurately estimate human health impacts that would result from a transportation project in a way that would be useful to decision-makers. Also, in compliance with 40 CFR 150.22(b), Appendix D of the *Air Quality Study Report* summarizes current studies on MSAT health impacts.

Operational Criteria Pollutants

Long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the project vicinity. Emission of reactive organic gases (ROG), NO_X, CO, PM10, and PM2.5 for existing year (2014) and design year (2040)[2] conditions were evaluated through modeling conducted using Caltrans' CT-EMFAC model and vehicle activity data provided by the project transportation engineer.

Table 2.2.6-5 summarizes the modeled emissions by scenario and presents a comparison of Build Alternative emissions to No Build and existing conditions. The differences in emissions between the Build and No Build conditions represent emissions generated directly as a result of implementation of the proposed project. The design year (2040) analysis accounts for reductions in vehicular emission rates as a result of continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

[2] CT-EMFAC only includes vehicle emission rates up to the year 2035, thus design year (2040) emissions use CT-EMFAC 2035 emission rates.

Table 2.2.6-5. Estimated Criteria Pollutant Emissions from Operation of the Proposed Project (pounds per day)

Condition	Daily VMT	ROG	NO_X	CO	PM10	PM2.5
2012 Existing	4,977,012	2,879	6,827	23,962	688	341
2040 No Build	7,661,909	1,524	2,594	12,710	951	428
2040 Build	7,661,578	1,526	2,595	12,721	951	428
Build Alternatives Analysis						
Comparison to Existing[a]	2,684,566	-1,354	-4,232	-11,241	263	87
% change between 2040 Build and Existing	35%	47%	62%	47%	28%	20%
Comparison to 2040 No Build[b]	-331	2	1	11	<1	<1
% change between 2040 Build and 2040 No Build	0.004%	0.13%	0.038%	0.086%	0	0
BCAQMD Threshold	–	*25*	*25*	–	*80*	–

BCAQMD = Butte County Air Quality Management District.
CO = carbon monoxide.
NO_X = nitrogen oxides.
PM10 = particles of 10 micrometers or smaller.
PM2.5 = particles of 2.5 micrometers and smaller.
ROG = reactive organic gases.
VMT = vehicle miles travelled.
[a] 2040 Build minus 2012 Existing.
[b] 2040 Build minus 2040 No Build.

Emissions associated with implementation of the Build Alternatives were obtained by comparing with-project emissions to without-project emissions. Under the Build and No Build conditions, VMT is nearly the same. While the Build Alternatives are anticipated to reduce VMT relative to the No Build Alternative, emissions of all criteria pollutants are forecasted to slightly increase. This trend is explained by the relationship between vehicle speeds and emissions rates. The operational enhancements associated with the proposed project would reduce vehicle delay and increase average travel speeds. The decrease in emissions typically associated with reduced VMT is therefore offset by the greater number of vehicles traveling between 60 and 65 miles per hour (mph), where emission rates are higher, when compared to the No Build Alternative. However, as shown in Table 2.2.6-5, the predicted emissions increase under the Build Alternatives would be approximately 0.004%

A comparison of emissions under design year (2040) and existing year (2014) conditions was also performed for informational purposes. The analysis indicates that the Build Alternatives would result in substantial reactive organic gases, nitrogen oxides, and carbon monoxide emissions reductions. This reduction is primarily attributed to improvements in engine technology. Minor increases in particulate matter would occur. While engine improvements are anticipated to reduce particulate matter exhaust emissions on a per mile basis, the reductions are not sufficient to outpace increases in vehicle miles traveled expected between existing and design year conditions. Accordingly, PM emissions in the project area are expected to increase as a result of background growth.

Construction Emissions

Temporary construction emissions would result from grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade construction, and paving activities and construction worker commuting patterns. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather.

The Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM) (Version 7.1.5.1) was used to estimate emissions of ROG, NO_X, CO, PM10, and PM2.5. The RCEM is a public-domain spreadsheet model formatted as a series of individual worksheets. The model enables users to estimate emissions using a minimum amount of project-specific information. The model estimates emissions for load hauling (on-road heavy-duty vehicle trips), worker commute trips, construction site fugitive dust (PM10 and PM2.5), and off-road construction vehicles. Dust estimates do not account for control measures required by the BCAQMD, leading to a conservative worst-case assessment of dust emissions.

Estimated construction emissions are presented in Tables 2.2.6-6 and 2.2.6-7. Construction of the proposed project is expected to occur in two segments, each of which would require 18 months of activity. The construction of Segment 2 would occur after construction of Segment 1 is complete. Detailed modeling assumptions for the proposed project are presented in the *Air Quality Study Report* prepared for the proposed project (ICF 2016).

Table 2.2.6-6. Estimated Criteria Pollutant Emissions from Construction of Segment 1 (pounds per day)

				PM10			PM2.5		
Project Phase	ROG	NO_X	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
Grubbing/land clearing	8	88	53	50	4	54	10	4	14
Grading/excavation	17	181	114	50	8	58	10	7	17
Drainage/utilities/sub-grade	12	114	90	10	5	15	2	5	7
Paving	19	151	104	0	7	7	0	7	7
BCAQMD Threshold	137	137	–	–	–	*80*	–	–	–

BCAQMD = Butte County Air Quality Management District.
CO = carbon monoxide.
NO_X = nitrogen oxides.
PM10 = particles of 10 micrometers or smaller.
PM2.5 = particles of 2.5 micrometers and smaller.
ROG = reactive organic gases.

Table 2.2.6-7. Estimated Criteria Pollutant Emissions from Construction of Segment 2 (pounds per day)

				PM10			PM2.5		
Project Phase	ROG	NO_X	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
Grubbing/land clearing	7	74	52	50	3	53	10	3	13
Grading/excavation	14	134	109	50	6	56	10	6	16
Drainage/utilities/sub-grade	11	96	89	10	4	14	2	4	6
Paving	17	133	103	0	6	6	0	6	6
BCAQMD Threshold	*137*	*137*	–	–	–	*80*	–	–	–

BCAQMD = Butte County Air Quality Management District.
CO = carbon monoxide.
NOX = nitrogen oxides.
PM10 = particles of 10 micrometers or smaller.
PM2.5 = particles of 2.5 micrometers and smaller.
ROG = reactive organic gases.

Construction activities are subject to requirements found in the *Standard Specifications for Construction of Local Streets and Roads*, Section 14-9.02, which includes specifications relating to air pollution control by complying with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code Section 11017 (Public Contract Code Section 10231) while standard specification Section 14-9.03 addresses dust control and palliative requirements. Implementation of Caltrans' standard specification and measures to control dust during construction would help to minimize air quality impacts from construction activities.

Construction activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

Effects of the No Build Alternative

Under the No Build Alternative, the proposed project would not be built, and the existing roadway would be maintained. The No Build Alternative would not directly generate any short-term construction emissions. It is anticipated that future emissions of criteria pollutants and MSAT would decrease relative to existing conditions because of improvements in engine technology and the phasing out of older, more polluting engines. Likewise, CO concentrations would be reduced. Comparisons of criteria pollutant emissions of the No Build Alternative to the Build Alternatives are provided in Table 2.2.6-5.

2.2.6.4 Avoidance and/or Minimization Measures

AQ-1: Implement California Department of Transportation Standard Specification Section 14

To control the generation of construction-related PM10 emissions, the project proponent will follow Standard Specification Section 14, Environmental Stewardship, which addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience for the public; and damage or injury to any person or property as a result of any construction operation. Standard Specification Section 14-9.02 requires compliance with BCAQMD rules, regulations, ordinances, and

statutes that apply to work performed under the contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code Section 11017 (Public Contract Code Section 10231). Standard Specification Section 14-9.03 addresses dust control and palliative requirements.

AQ-2: Implement Additional Control Measures for Construction Emissions of Fugitive Dust

Additional measures to control dust will be borrowed from BCAQMD's recommended list of dust control measures and implemented to the extent practicable when the measures have not already been incorporated and do not conflict with requirements of Caltrans' Standard Specifications, Special Provisions, the National Pollutant Discharge Elimination System permit, and the Biological Opinions, Clean Water Act Section 404 permit, Clean Water Act Section 401 Certification, and other permits issued for the proposed project. The following measures are taken from BCAQMD's (2014) *CEQA Handbook*.

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District-approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities.
- Exposed ground areas that will be reworked at dates greater than 1 month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with County regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

2.2.6.5 California Environmental Quality Act Air Quality Analysis

BCAG is acting as the state lead agency for the proposed project under CEQA. Accordingly, the following analysis based on Appendix G of the State CEQA Guidelines is provided to support the project-level CEQA document. Operational and construction emissions are compared to BCAG thresholds to evaluate potentially significant air quality impacts (Butte County Association of Governments 2014). Emission results presented in Section 2.2.6.3, Environmental Consequences, are referenced, as appropriate, to avoid duplicative tables and text. Information presented in this section is based on the May 2016 *Air Quality Study Report* prepared for the proposed project (ICF 2016).

The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. The proposed project is listed in BCAG's financially constrained 2016 RTP/SCS and 2017 FTIP. Projects included in the RTP/SCS and FTIP are required to be consistent with the planning goals of SIPs adopted by local air quality management agencies. Long-term operation of the proposed project would result in an emissions increase relative to the No Build Alternative, but emissions increases would be minor and would not exceed BCAQMD thresholds. Implementation of the proposed project would improve overall network efficiency, reduce vehicle congestion, and increase travel speeds, all of which are consistent with the objectives and policies outlined in BCAG's RTP/SCS and BCAQMD's Clean Air Plan.

The proposed project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. The proposed project's operational emissions are well below BCAQMD thresholds (Table 2.2.6-5). However, as shown in Tables 2.2.6-6 and 2.2.6-7, construction of the proposed project (Segment 1) would generate NO_X emissions in excess of the BCAQMD's numeric threshold. Mitigation Measure 3 is available to reduce this impact by requiring heavy-duty equipment to comply with U.S. EPA Tier 3 emissions standards. In addition, the proposed project would also be subject to Caltrans Standard Specification 14, including compliance with BCAQMD dust controls (discussed above). The mitigation measure identified below, along with the avoidance and minimization measures identified above in Section 2.2.6.4, Avoidance and/or Minimization Measures, will reduce NOx emissions generated during construction, as shown in Tables 2.2.6-8 and 2.2.6-9, below BCAQMD's thresholds.

Table 2.2.6-8. Estimated Mitigated Criteria Pollutant Emissions from Construction of Segment 1 (pounds per day)

				PM10			PM2.5		
Project Phase	ROG	NO_X	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
Grubbing/land clearing	5	55	53	38	4	41	8	4	11
Grading/excavation	11	121	114	38	8	46	8	7	15
Drainage/utilities/sub-grade	8	71	90	8	5	13	2	5	6
Paving	12	94	104	0	7	7	0	7	7
BCAQMD Threshold	*137*	*137*	–	–	–	*80*	–	–	–

BCAQMD = Butte County Air Quality Management District.
CO = carbon monoxide.
NO_X = nitrogen oxides.
PM10 = particles of 10 micrometers or smaller.
PM2.5 = particles of 2.5 micrometers and smaller.
ROG = reactive organic gases.

Table 2.2.6-9. Estimated Mitigated Criteria Pollutant Emissions from Construction of Segment 2 (pounds per day)

				PM10			PM2.5		
Project Phase	ROG	NO_X	CO	Dust	Exhaust	Total	Dust	Exhaust	Total
Grubbing/land clearing	5	46	52	38	3	41	8	3	11
Grading/excavation	9	84	109	38	6	44	8	6	13
Drainage/utilities/sub-grade	7	60	89	8	4	12	2	4	5
Paving	11	82	103	0	6	6	0	6	6
BCAQMD Threshold	*137*	*137*	–	–	–	*80*	–	–	–

BCAQMD = Butte County Air Quality Management District.
CO = carbon monoxide.
NO_X = nitrogen oxides.
PM10 = particles of 10 micrometers or smaller.
PM2.5 = particles of 2.5 micrometers and smaller.
ROG = reactive organic gases.

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard. As shown in Table 2.2.6-5, grading/excavation and paving activities during the construction of Segment 1 would generate NO_X emissions in excess of BCAQMD's threshold of significance. However, implementation of Mitigation Measure 3 would reduce NO_X emissions to a less-than-significant level. Once construction is complete, long-term operation of the project would result in an emissions increase relative to the No Build Alternative, but emissions would be minor and would not exceed BCAQMD thresholds (see Tables 2.2.6-8 and 2.2.6-9).

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. Because O_3 precursors (ROGs and NO_X) affect air quality on a regional scale, associated health effects are the product of emissions generated by numerous sources throughout a region. Minor increases in regional air pollution from project-generated ROGs and NO_X would therefore have nominal or negligible impacts on human health. Construction of the proposed project would generate diesel particulate matter (DPM), but DPM emissions would be minor (less than 10 pounds per day) and only occur over a period of 3 years. The short-term construction period is well below the 30-year exposure period typically associated with increased cancer risks. Moreover, DPM from construction equipment would be transitory and spread throughout the entire 6-mile segment, as opposed to concentrated at a single location. Operation of the proposed project would not increase truck volumes, but ambient concentrations of DPM may be localized in areas where ambient concentrations of DPM could be higher than the No Build condition. However, the widened portions of SR 70 are neither considered by the ARB (2005) as a high-traffic road nor as a roadway with significant diesel volumes.[3] CO concentrations are not anticipated to exceed the 1- or 8- hour NAAQS or CAAQS, and there is no potential for impacts related to NOA emissions during construction activities.

[3] The ARB's (2005) *Air Quality and Land Use Handbook* defines high-traffic urban roads as those with greater than 100,000 vehicles per day and high-traffic rural roads as those with greater than 500,000 vehicles per day. As shown in Table 10, AADT on SR 70 within the project area under design year (2040) conditions, which represents the year with maximum AADT, will range between 17,700 and 24,200. Heavy-duty trucks comprise 12 percent of this AADT, resulting in a truck AADT of 2,124 to 2,904.

The proposed project would not create objectionable odors affecting a substantial number of people. Minor sources of odors (i.e., diesel engines) would be present during construction of the proposed project. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors are not anticipated to result in the adverse exposure of receptors to objectionable odorous emissions. Long-term operation of the proposed project is not anticipated to have an impact on odors because it would not increase truck volumes along SR 70.

2.2.6.6 Mitigation Measures

AQ-3: Utilize Clean Diesel-Powered Equipment during Construction to Control Construction-Related NO_X Emissions

BCAG will ensure that all off-road diesel-powered equipment greater than 50 horsepower used during construction will be equipped with a U.S. EPA Tier 3 or cleaner engines, except for specialized construction equipment in which a U.S. EPA Tier 3 engine is not available. Evidence that all applicable engines have been equipment with Tier 3 or higher engines will be submitted to BCAQMD prior to the start of construction. The emissions analysis assumes emission reductions compared to a fleet-wide average Tier 2 engine between 2018 and 2022.

2.2.6.7 Climate Change

Neither the U.S. EPA nor FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this document. The CEQA analysis may be used to inform the National Environmental Policy Act (NEPA) determination for the project.

As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate CEQA discussion at the end of this chapter (Section 2.4) and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

2.2.6.8 References Cited

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2.2.7 Noise

2.2.7.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. This section will focus on the NEPA/23 Code of Federal Regulations Part 772 (23 CFR 772) noise analysis; the CEQA noise analysis is included at the end of this section.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA; and the Department, as assigned) involvement, the federal-Aid Highway Act of 1970 and its implementing regulations (23 Code of Federal Regulations [CFR] 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA 23 CFR 772 analysis.

Table 2.2.7-1. Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, $L_{eq}(h)$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[a]	67 (Exterior)	Residential.
C[a]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

[a] Includes undeveloped lands permitted for this activity category.

Figure 2-5 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

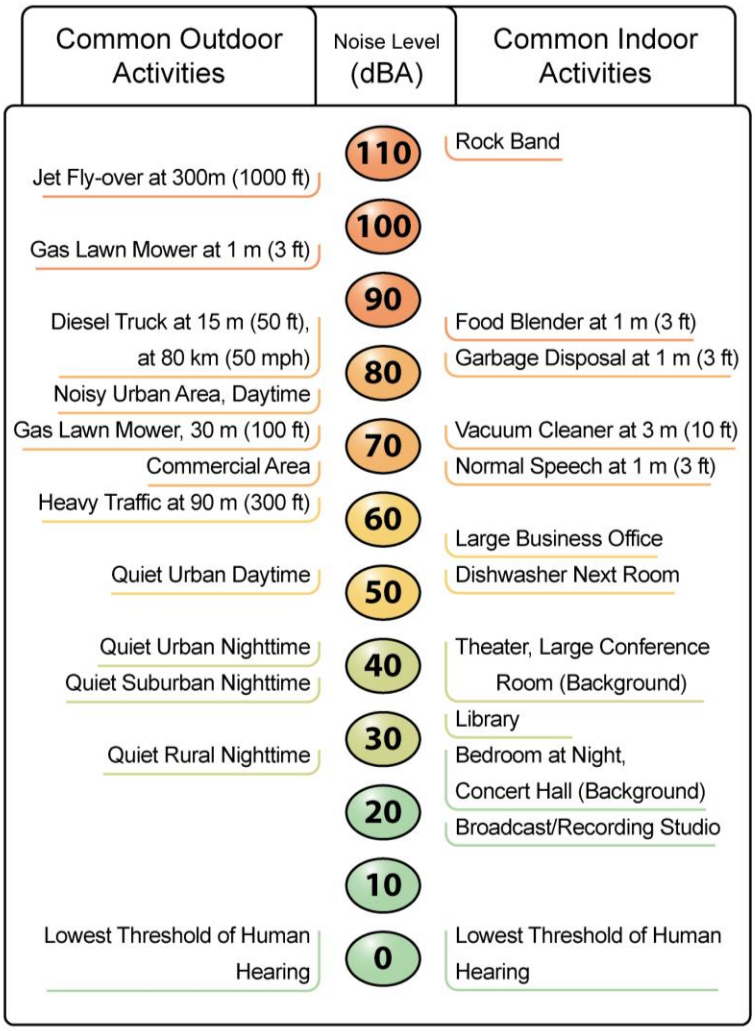


Figure 2-5. Noise Levels of Common Activities

According to the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction for all impacted receptors in the future noise levels must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. Additional,

a noise reduction of at least 7 dBA must be achieved at one or more benefited receptors for an abatement measure to be considered reasonable. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

2.2.7.2 Affected Environment

The following analysis is based on the March 2016 *Noise Study Technical Report* for the project.

The project area consists of residential subdivisions (Activity Category B), a school (Activity Category C), several commercial uses that include no apparent outdoor areas of frequent human use (Activity Category F), and undeveloped land (Activity Category G). Traffic on SR 70 was observed to be the dominant source of noise in the study area. Modeled noise receptors are shown in Figure 2-6.

2.2.7.3 Environmental Consequences

Effects of the Build Alternatives

Operations Noise

FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment of the highway. The proposed project is considered to be a Type I because the project alternatives involve addition of through lanes, which are capacity-increasing improvements.

Traffic noise modeling results for existing and design year conditions for both build alternatives are shown in Table 2.2.7-2. Modeled traffic noise levels for design year no-build conditions were found to range from 57 to 77 A-weighted decibels (dBA) hourly equivalent sound level (L_{eq}(h)). Under design year build conditions, predicted traffic noise levels range from 58 to 76 dBA L_{eq}(h) for Alternative 1, 57 to 77 dBA L_{eq}(h) for Alternative 2, and 57 to 77 dBA L_{eq}(h) for Alternative 3.

Table 2.2.7-2. Impact Assessment and Predicted Noise Levels

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project, $L_{eq}(h)$, dBA	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
R01	South of Cox Lane	49	52	52	No	No	52	No	No	52	No	No
R02	South of Cox Lane	67	71	69	Yes	No	70	Yes	No	70	Yes	No
R03	b/w Cox Lane and Power House Hill Road	60	63	64	No	No	65	No	No	65	No	No
R04	b/w Cox Lane and Power House Hill Road	70	74	75	No	No	76	No	No	76	No	No
R05	b/w Cox Lane and Power House Hill Road	67	70	71	No	No	72	No	No	72	No	No
R06	b/w Cox Lane and Power House Hill Road	69	73	72	No	No	76	No	No	74	No	No
R07	b/w Cox Lane and Power House Hill Road	68	72	75	No	No	73	No	No	75	No	No
R08	b/w Cox Lane and Power House Hill Road	59	63	63	No	No	63	No	No	64	No	No
R09	b/w Cox Lane and Power House Hill Road	63	67	67	Yes	No	65	No	No	66	Yes	No
R10	b/w Cox Lane and Power House Hill Road	64	67	68	Yes	No	66	Yes	No	67	Yes	No
R11	b/w Cox Lane and Power House Hill Road	61	65	63	No	No	66	Yes	No	65	No	No
R12	b/w Cox Lane and Power House Hill Road	56	59	58	No	No	61	No	No	60	No	No
R13	b/w Cox Lane and Power House Hill Road	59	62	61	No	No	64	No	No	63	No	No
R14	b/w Cox Lane and Power House Hill Road	68	71	69	Yes	No	75	Yes	No	73	Yes	No
R15	b/w Cox Lane and Power House Hill Road	61	64	63	No	No	66	Yes	No	65	No	No

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project, $L_{eq}(h)$, dBA	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
R16	b/w Cox Lane and Power House Hill Road	68	71	69	Yes	No	75	Yes	No	73	Yes	No
R17	b/w Cox Lane and Power House Hill Road	73	76	75	Yes	No	81	Yes	No	78	Yes	No
R18	b/w Cox Lane and Power House Hill Road	67	71	72	Yes	No	70	Yes	No	71	Yes	No
R19	b/w Cox Lane and Power House Hill Road	66	70	70	Yes	No	68	Yes	No	70	Yes	No
R20	b/w Cox Lane and Power House Hill Road	61	64	65	No	No	64	No	No	65	No	No
R21	b/w Cox Lane and Power House Hill Road	63	66	67	Yes	No	66	Yes	No	66	Yes	No
R22	b/w Cox Lane and Power House Hill Road	65	69	67	Yes	No	71	Yes	No	69	Yes	No
R23	b/w Cox Lane and Power House Hill Road	63	66	67	Yes	No	66	Yes	No	67	Yes	No
R24	b/w Cox Lane and Power House Hill Road	61	64	65	No	No	65	No	No	65	No	No
R25	b/w Cox Lane and Power House Hill Road	56	59	59	No	No	62	No	No	61	No	No
R26	b/w Cox Lane and Power House Hill Road	53	56	55	No	No	58	No	No	57	No	No
R27	b/w Cox Lane and Power House Hill Road	69	73	71	No	No	77	No	No	75	No	No
R28	b/w Cox Lane and Power House Hill Road	71	74	78	No	No	75	No	No	76	No	No
R29	b/w Power House Hill Road and E Palermo Road	72	75	74	No	No	80	No	No	77	No	No

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project, $L_{eq}(h)$, dBA	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
R30	b/w Power House Hill Road and E Palermo Road	66	69	72	Yes	No	71	Yes	No	72	Yes	No
R31	b/w Power House Hill Road and E Palermo Road	62	66	66	Yes	No	66	Yes	No	66	Yes	No
R32	b/w Power House Hill Road and E Palermo Road	65	69	71	Yes	No	70	Yes	No	71	Yes	No
R33	b/w Power House Hill Road and E Palermo Road	61	65	65	No	No	65	No	No	65	No	No
R34	b/w Power House Hill Road and E Palermo Road	57	61	61	No	No	61	No	No	62	No	No
R35	b/w Power House Hill Road and E Palermo Road	63	67	68	Yes	No	67	Yes	No	68	Yes	No
R36	b/w Power House Hill Road and E Palermo Road	60	64	64	No	No	64	No	No	64	No	No
R37	b/w Power House Hill Road and E Palermo Road	58	61	62	No	No	62	No	No	63	No	No
R38	b/w Power House Hill Road and E Palermo Road	56	59	61	No	No	61	No	No	61	No	No
R39	b/w Power House Hill Road and E Palermo Road	53	57	58	No	No	58	No	No	59	No	No

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project, $L_{eq}(h)$, dBA	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
R40	b/w Power House Hill Road and E Palermo Road	68	71	71	Yes	No	75	Yes	No	74	Yes	No
R41	b/w Power House Hill Road and E Palermo Road	68	72	71	Yes	No	76	Yes	No	74	Yes	No
R42	b/w Power House Hill Road and E Palermo Road	67	70	70	Yes	No	75	Yes	No	74	Yes	No
R43	b/w Power House Hill Road and E Palermo Road	62	65	64	No	No	66	Yes	No	66	Yes	No
R44	b/w Power House Hill Road and E Palermo Road	58	61	61	No	No	64	No	No	62	No	No
R45	b/w Power House Hill Road and E Palermo Road	62	66	66	Yes	No	66	Yes	No	66	Yes	No
R46	b/w Power House Hill Road and E Palermo Road	66	70	69	Yes	No	74	Yes	No	72	Yes	No
R47	b/w Power House Hill Road and E Palermo Road	65	68	67	Yes	No	70	Yes	No	69	Yes	No
R48	b/w Power House Hill Road and E Palermo Road	59	62	62	No	No	64	No	No	64	No	No
R49	b/w Power House Hill Road and E Palermo Road	59	63	64	No	No	64	No	No	64	No	No

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project, $L_{eq}(h)$, dBA	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
R50	b/w Power House Hill Road and E Palermo Road	63	66	66	Yes	No	66	Yes	No	66	Yes	No
R51	b/w Power House Hill Road and E Palermo Road	67	71	70	Yes	No	74	Yes	No	73	Yes	No
R52	b/w Power House Hill Road and E Palermo Road	67	70	69	Yes	No	74	Yes	No	72	Yes	No
R53	b/w Power House Hill Road and E Palermo Road	67	71	74	Yes	No	72	Yes	No	74	Yes	No
R54	b/w Power House Hill Road and E Palermo Road	69	73	72	Yes	No	77	Yes	No	75	Yes	No
R55	b/w E Palermo Road and Ophir Road	70	73	68	No	No	69	No	No	69	No	No
R56	b/w E Palermo Road and Ophir Road	58	61	63	No	No	63	No	No	63	No	No
R57	b/w E Palermo Road and Ophir Road	55	59	60	No	No	60	No	No	60	No	No
R58	b/w E Palermo Road and Ophir Road	53	56	57	No	No	57	No	No	57	No	No
R59	b/w E Palermo Road and Ophir Road	51	55	55	No	No	55	No	No	55	No	No
R60	b/w E Palermo Road and Ophir Road	49	53	53	No	No	54	No	No	54	No	No
R61	b/w E Palermo Road and Ophir Road	48	52	52	No	No	52	No	No	52	No	No
R62	b/w E Palermo Road and Ophir Road	51	55	55	No	No	56	No	No	56	No	No

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level L_{eq}(h), dBA	Design Year Noise Level without Project, L_{eq}(h), dBA	Design Year Noise Level with Project, L_{eq}(h), dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, L_{eq}(h), dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, L_{eq}(h), dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
R63	b/w E Palermo Road and Ophir Road	49	53	54	No	No	54	No	No	54	No	No
R64	b/w E Palermo Road and Ophir Road	48	52	52	No	No	53	No	No	53	No	No
R65	b/w E Palermo Road and Ophir Road	45	49	49	No	No	50	No	No	50	No	No
R66	b/w E Palermo Road and Ophir Road	46	50	50	No	No	51	No	No	51	No	No
R67	b/w E Palermo Road and Ophir Road	67	71	67	No	No	69	No	No	69	No	No
R68	b/w E Palermo Road and Ophir Road	69	72	75	No	No	76	No	No	76	No	No
R69	b/w E Palermo Road and Ophir Road	68	71	69	No	No	71	No	No	71	No	No
R70	b/w E Palermo Road and Ophir Road	68	71	77	No	No	77	No	No	77	No	No
R71	north of Ophir Road	65	69	72	No	No	72	No	No	74	No	No
R72	north of Ophir Road	64	67	67	No	No	67	No	No	68	No	No
M01	Cox Lane/SR 70	68	72	70	No	No	72	No	No	72	No	No
M02	b/w Cox Lane and Power House Hill Road	71	74	76	No	No	77	No	No	77	No	No
M03	b/w Cox Lane and Power House Hill Road	70	73	75	No	No	73	No	No	74	No	No
M04	b/w Cox Lane and Power House Hill Road	71	74	72	Yes	No	78	Yes	No	76	Yes	No
M05	b/w Cox Lane and Power House Hill Road	72	75	74	Yes	No	80	Yes	No	77	Yes	No
M06	b/w Cox Lane and Power House Hill Road	69	72	75	Yes	No	72	Yes	No	74	Yes	No

				Alternative 1			Alternative 2			Alternative 3		
Receptor #	Location	Existing Noise Level $L_{eq}(h)$, dBA	Design Year Noise Level without Project, $L_{eq}(h)$, dBA	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?	Design Year Noise Level with Project, $L_{eq}(h)$, dBA	Noise Impact Requiring Abatement Consideration?	Reasonable and Feasible?
M07	b/w Cox Lane and Power House Hill Road	74	78	78	No	No	75	No	No	77	No	No
M07A	b/w Power House Hill Road and E Palermo Road	75	79	78	No	No	80	No	No	80	No	No
M08	b/w Power House Hill Road and E Palermo Road	65	68	70	No	No	69	No	No	70	No	No
M09	b/w Power House Hill Road and E Palermo Road	60	64	64	No	No	64	No	No	64	No	No
M10	b/w Power House Hill Road and E Palermo Road	67	70	70	No	No	74	No	No	73	No	No
M11	b/w Power House Hill Road and E Palermo Road	66	70	73	No	No	71	No	No	72	No	No
M12	b/w E Palermo Road and Ophir Road	53	57	57	No	No	57	No	No	57	No	No
M13	b/w E Palermo Road and Ophir Road	74	78	75	No	No	76	No	No	76	No	No
M14	b/w E Palermo Road and Ophir Road	70	73	77	No	No	77	No	No	77	No	No
M15	b/w E Palermo Road and Ophir Road	68	72	69	No	No	71	No	No	71	No	No
M16	b/w E Palermo Road and Ophir Road	67	70	74	No	No	75	No	No	75	No	No
M17	Ophir Road/SR 70	73	76	75	Yes	No	75	Yes	No	75	Yes	No

Traffic noise levels are predicted to approach or exceed the NAC for Activity Category B land use at 46 dwelling units under Alternative 1, 51 dwelling units under Alternative 2, and 50 dwelling units under Alternative 3. Impacted dwelling units by segment of SR 70 are shown in Table 2.2.7-3.

Table 2.2.7-3. Impacted Dwelling Units of Category B Land Uses by Design Alternative

Roadway Segment	Alternative 1	Alternative 2	Alternative 3
South of Cox Lane	1	1	1
Cox Lane to Power House Hill Road	14	15	14
Power House Hill Road to E Palermo Road	30	34	34
E Palermo Road to Ophir Road	1	1	1
North of Ophir Road	0	0	0
Total impacted receptors	46	51	50

Noise levels are also predicted to approach or exceed the NAC of 67 dBA $L_{eq}(h)$ for one Activity Category C land use, a school on Cox Lane. Traffic noise impacts are therefore predicted to occur at this Activity Category C land use. There are no NAC for several Activity Category F and G land uses in the project area.

Traffic noise levels are predicted to increase at receptor locations by a maximum of 9 dB, under all design alternatives. This is less than the substantial increase threshold of 12 dB, so no impacts due to substantial increase are predicted to occur under design-year build conditions.

Because the build alternatives would exceed the NAC at Activity Category B and C land uses, future traffic noise due the project would result in an adverse impact. Therefore, noise abatement must be considered.

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction activities include demolition of existing structures, building of new structures, and implementation of detours. Equipment operations associated with demolition and building activities will be a source of noise. Implementation of detours may increase noise in some areas as a result temporarily diverted traffic. Construction noise is controlled by Caltrans Standard Specifications Section 14-8.02 NOISE CONTROL, which states:

- Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

Table 2.2.7-4 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 80 to 90 dB at a distance of 50 feet, which would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.2.7-4. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82
Source: Federal Transit Administration 2006.	

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Although not required, implementing the following measures would minimize the temporary noise impacts from construction.

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Accordingly, no adverse impacts from construction of the build alternatives would be expected.

Effects of the No-Build Alternative

Under the No-Build Alternative, no noise effects related to the project, resulting from traffic or construction, would occur. Future planned projects in the area, however, would result in an increase in traffic noise, as shown in Table 2.2.7-2.

2.2.7.4 Avoidance, Minimization, and/or Mitigation Measures

The traffic noise modeling results in Appendix C indicate that noise levels of up to 78 dBA $L_{eq}(h)$ are predicted at up to 51 residential outdoor use areas located along the project corridor. This traffic noise level exceeds the NAC for residential use (Activity Category B). Therefore, traffic noise impacts are predicted to occur at this location and noise abatement must be considered. A noise barrier would not be feasible along SR 70 northbound or SR 70 southbound under any of the three build alternatives due to driveway access requirements to residences along the entire corridor, all of which are preserved and improved as part of the project. For a wall to be acoustically feasible, it would need to be continuous along residential frontage, and maintain access, required sight lines and safety requirements for driveway access along SR 70. Noise barriers are therefore not considered feasible, and were not evaluated further in this analysis.

2.2.7.5 References Cited

California Department of Transportation (Caltrans). 2011. *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects.* Sacramento, CA.

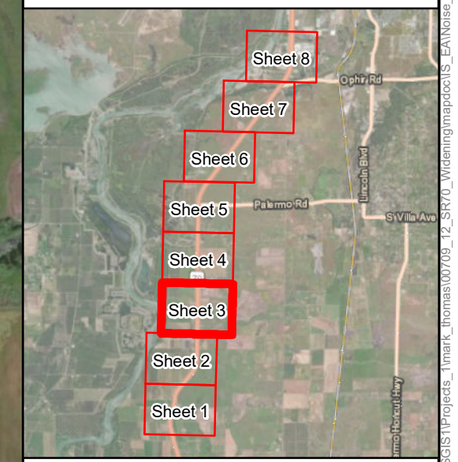
Federal Transit Administration. 2006. *Transit noise and vibration impact assessment.* (FTA-VA-90-1003-06.) Office of Planning, Washington, DC. Prepared by Harris Miller, Miller & Hanson, Inc. Burlington, MA.

Figure 2-6
Noise Measurement and Prediction Locations

Figure 2-6
Noise Measurement and Prediction Locations

SR 70 Corridor Improvements Project
Sheet 3 of 8

- Study Area
- Long-Term Measurement Sites
- Short-Term Measurement Sites
- Prediction-Only Locations



N

0 250 500
Feet

1 inch = 500 feet

Path: W:\DOCS\ RDSGIS\ Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EA\Noise_20180717.mxd, Author: , Date: 7/17/2018

Figure 2-6
Noise Measurement and Prediction Locations

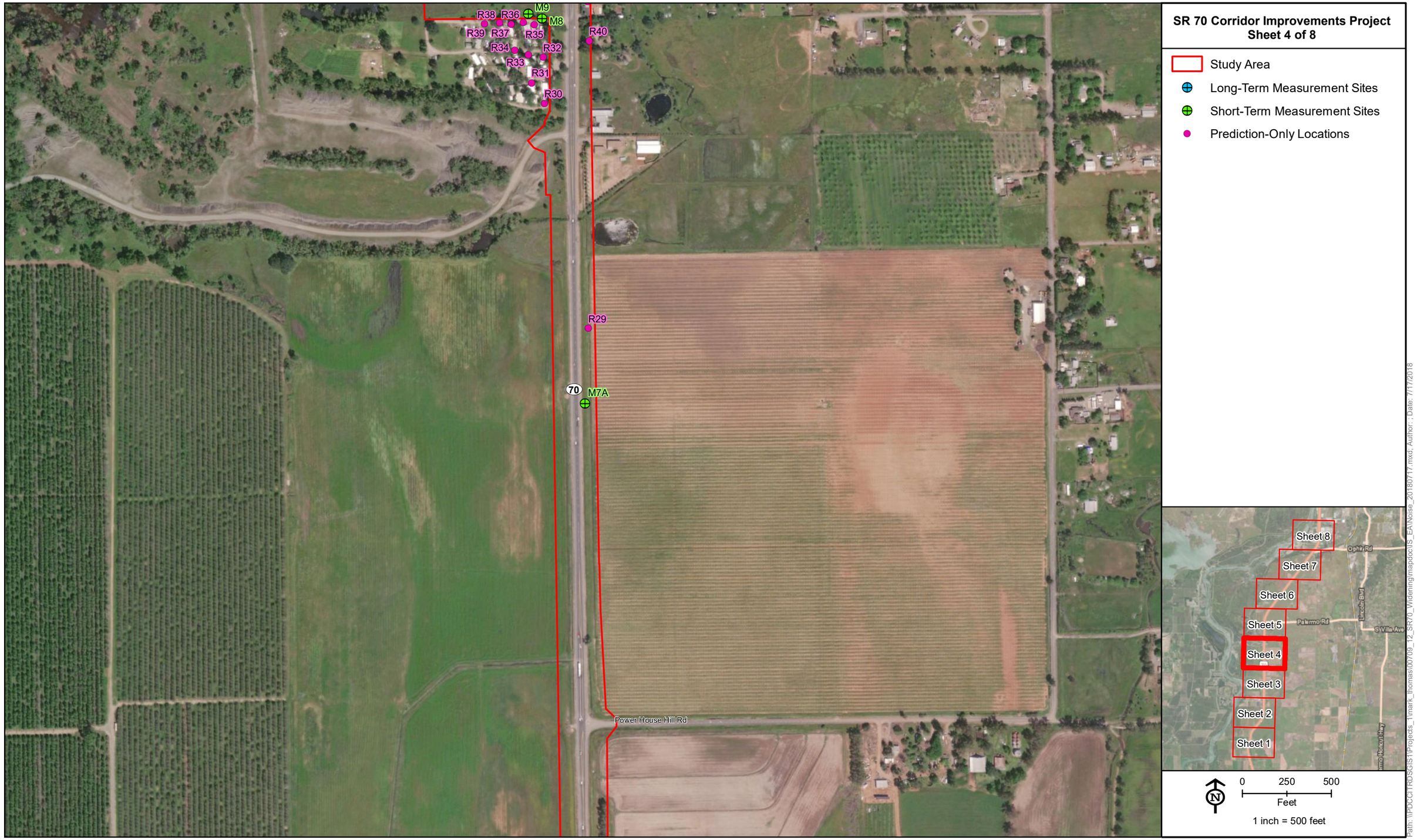


Figure 2-6
Noise Measurement and Prediction Locations

Figure 2-6
Noise Measurement and Prediction Locations

Figure 2-6
Noise Measurement and Prediction Locations

Figure 2-6
Noise Measurement and Prediction Locations

Figure 2-6
Noise Measurement and Prediction Locations

2.3 Biological Environment

2.3.1 Natural Communities

This section discusses natural communities of special concern. The focus is on biological communities, not individual plant or animal species, which are discussed in Sections 2.3.3, 2.3.4, and 2.3.5. This section also includes information on wildlife corridors and habitat fragmentation. *Wildlife corridors* are areas of habitat used by wildlife for seasonal or daily migration. *Habitat fragmentation* involves the potential for dividing sensitive habitat and thereby lessening its biological value.

No habitat areas have been designated as critical habitat under the federal Endangered Species Act. Wetlands and other waters are discussed below in Section 2.3.2.

2.3.1.1 Regulatory Setting

State Regulation

Public Resources Code §21083.4

Section 21083.4 of the California Public Resources Code (instituted under Senate Bill 1334), established oak woodland conservation standards for CEQA processes within a county's jurisdiction. These standards apply to any land development project requiring a discretionary entitlement from the County that is subject to review under CEQA and that will have a potentially significant impact on oak woodland. Oak woodland is defined as project site land where a majority of living trees are native oaks and with 10 percent or greater oak canopy cover. Counties are required to consider the significance of the conversion of oak woodlands, including a project's cumulative effect on oak woodlands statewide. The CEQA mitigation standards for project impacts on oak woodlands apply to oaks that have a trunk diameter of 5 inches or more at a height of 4.5 feet above the ground.

Counties are required to implement one or more of these four mitigation alternatives and the planting of oak trees cannot constitute more than 50% of the required mitigation. Oak trees in the BSA that are located outside of the existing Caltrans right-of-way could be subject to this code.

Local Regulations

Butte Regional Conservation Plan

The BRCP is a program to provide regional conservation strategies for covered special-status species and sensitive natural communities in the lowland and foothill region of Butte County plan area, which includes the BSA for this project. The BRCP is intended to provide mitigation and a coordinated fee system to streamline the process of obtaining ESA permits. BCAG and Caltrans are included in the list of applicants under the BRCP for Section 10 of FESA and Section 2835 of the California Natural Community Conservation Planning Act permits. The proposed project is included as a covered activity in the BRCP and is located within the Sierra Foothills and Southern Orchards Conservation Acquisition Zones (CAZs) of the plan area.

The public review period for the formal public draft BRCP and Environmental Impact Statement/EIR documents closed on June 8, 2016. Comments received during the public review period will be addressed in the next version of the BRCP. Because the length of time until the BRCP is finalized is not known, BCAG and Caltrans will not request ESA coverage of the proposed project under the BRCP.

Butte County General Plan 2030

Goals and policies in the Butte County General Plan (Conservation and Open Space Element) (Butte County 2012) apply to natural communities in the BSA that would be affected by implementation of the project. These policies include the following mandatory policies, which are required to mitigate environmental impacts under CEQA.

- COS-P7.7. Construction barrier fencing shall be installed around sensitive resources on or adjacent to construction sites. Fencing shall be installed prior to construction activities and maintained throughout the construction period.
- COS-P8.4. Introduction or spread of invasive plant species during construction of development projects shall be avoided by minimizing surface disturbance; seeding and mulching disturbed areas with certified weed-free native mixes; and using native, noninvasive species in erosion control plantings.

Yuba-Sutter Natural Communities Conservation Plan/Habitat Conservation Plan

Yuba and Sutter counties, as well as the cities of Yuba City, Live Oak, and Wheatland are in the process of developing the Yuba-Sutter NCCP/HCP for projects located in western Yuba County and Sutter County (Yuba County et al. 2011). Although Caltrans is not requesting authorization through the plan, it is a participant in the planning process. Any improvements to SR 70 in Yuba County would connect with the planned improvements in Butte County, south of the proposed project, and could affect natural communities and covered species included in the NCCP/HCP. Cumulative impact analyses of the southern SR 70 segments, south of the proposed project to the Butte County limits, might include consideration of the Yuba-Sutter NCCP/HCP.

2.3.1.2 Affected Environment

This section is based on a delineation of aquatic resources and a draft Natural Environment Study Report currently being prepared for the proposed project. This section presents findings of these reports as they relate to natural communities within the 247-acre biological study area (BSA). The BSA encompasses State Route (SR) 70 from 0.3 mile north of Cox Lane to 0.3 mile north of Ophir Road, and a buffer area on each side of the roadway. The BSA includes the proposed project area (i.e., where project-related ground-disturbing construction, staging, or access activities would occur) and a 250-foot buffer outside of the proposed area of disturbance for the assessment of indirect effects resulting from the proposed project.

Methods

ICF botanists/wetland ecologists identified and mapped land cover types and natural communities in the BSA on April 16, 17, and 24; July 8; August 3; and December 9, 2015. The botanists/wetland ecologists walked or visually surveyed all parts of the BSA for which access was granted and compiled a list of all plant species observed (Appendix D).

Land Cover Types

The BSA is within the Sacramento Valley subregion of the California Floristic Province (Baldwin et al. 2012:41). The BSA supports 13 land cover types that can be categorized as 8 non-wetland vegetation communities (valley foothill riparian, oak woodland, annual grassland, ruderal, orchard, agriculture, developed, and landscaped), 3 wetland plant communities (vernal pool/vernal swale, seasonal wetland/seasonal swale, and seasonal emergent wetland), and 2 non-wetland drainage communities (ephemeral drainage and ditch) (Figure 2-7).

The BSA supports both common natural communities and natural communities of special concern. *Common vegetation communities* are habitats with low species diversity that are widespread, reestablish naturally after disturbance, or support primarily non-native species. These communities generally are not protected by agencies unless the specific site is habitat for or supports special-status species (e.g., raptor foraging or nesting habitat, upland habitat in a wetland watershed). Common natural communities in the BSA include nonnative annual grassland ruderal, orchard, and agriculture. Landscaping and unvegetated developed areas also occur in the BSA.

The BSA supports *natural communities of special concern*, which are habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status. Local, state, and federal agencies consider these habitats important, and compensation for loss of sensitive communities is generally required by agencies. The California Natural Diversity Database (CNDDB) contains a current list of rare natural communities throughout the state. The U.S. Fish and Wildlife Service (USFWS) considers certain habitats, such as riparian communities, important to wildlife; and the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency consider stream habitats important for water quality and wildlife. Waters of the United States and waters of the State are regulated by USACE and the Regional Water Quality Control Board, respectively. Habitats within the BSA that meet criteria for natural communities of special concern are valley foothill riparian, oak woodland, vernal pool/vernal swale, seasonal wetland/seasonal swale, seasonal emergent wetland, and ephemeral drainage. Ephemeral stream, although not a vegetation community, is considered a natural community of special concern because it is regulated by resource agencies.

Vernal pool/vernal swale, seasonal wetland/seasonal swale, seasonal emergent wetland, and ephemeral drainage are waters of the United States and are discussed in Section 2.3.2. Locations and dominant plant species found in valley foothill riparian, oak woodland, nonnative annual grassland, ruderal, orchard, agriculture, developed, and landscaped are described below.

Valley Foothill Riparian

Valley foothill riparian is located on the west side of SR 70 at its intersection with Ophir Road. This community is associated with a drainage ditch. Dominant species in this community include arroyo willow, narrowleaf willow (*Salix exigua*), and Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*). Valley oak (*Quercus lobata*) is not dominant, but is associated with the dominant species.

Oak Woodland

Some northern portions of the BSA extend into the edges of more extensive oak woodlands. A narrow band of oak woodland occurs on the west side of SR 70, south of Ophir Road, on top of dredge tailings. Other areas of oak woodland occur at the south side of the SR 70/Ophir Road intersection. Dominant species in this community include blue oak (*Quercus douglasii*), valley oak,

and interior live oak (*Q. wislizeni*), with annual grassland species in the understory. Individual oak trees and clusters of several oaks also occur outside of more extensive woodlands in areas associated with residences and mapped as landscaped. One area of planted oak trees on the east side of SR 70 in the southern part of the BSA was also included in this cover type.

Nonnative Annual Grassland

Annual grassland occurs throughout the BSA. Dominant species in this community include annual grasses, such as wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rattlesnake grass (*Briza maxima*), dogtail grass (*Cynosurus echinatus*), medusa-head (*Elymus caput-medusa*), wall barley (*Hordeum murinum*), and perennial ryegrass (*Festuca perennis*) and native and nonnative forbs, such as dwarf brodiaea (*Brodiaea nana*), Italian thistle (*Carduus pycnocephalus*), spikeweed (*Centromadia fitchii*), field bindweed (*Convolvulus arvensis*), heron's bill (*Erodium botrys* and *E. cicutarium*), hawkbit (*Leontodon saxatilis*), white sweetclover (*Melilotus albus*), milk thistle (*Silybum marianum*), a number of clovers (*Trifolium* species), white brodiaea (*Triteleia hyacinthina*), hairy vetch (*Vicia villosa*), and many others.

Ruderal

The ruderal cover type in the BSA was mapped on the west side of SR 70 north and south of the OWA entrance, which is uncultivated land on dredge tailings, and at the north end of the BSA in a field west of Pacific Heights Road, which appears to be a former gravel-mining area. Ruderal areas support nonnative annual grasses and forbs, such as yellow starthistle (*Centaurea solstitialis*), large heron's bill (*Erodium botrys*), milk thistle, and rose clover (*Trifolium hirtum*). A patch of oak woodland occurs within the ruderal vegetation at the OWA entrance.

Orchard

Orchards in the BSA are located between its southern limit and the SR 70/Palermo Road intersection, primarily on the west side of SR 70. These areas are monocultures, with minimal understory vegetation because of weed management. Most of the orchards in the BSA are walnuts.

Agriculture

Cultivated agricultural land in the BSA is mostly south of Palermo Road. At the time of the field surveys, most of the agricultural land was plowed. One area at the SR 70/Power House Hill Road intersection is cultivated for rice.

Developed

The developed cover type refers to paved areas and built structures, as well as unvegetated roadside pull-outs.

Landscaped

The landscaped cover type includes planted and managed vegetation associated with homes, businesses, and other non-agricultural plantings. Landscaped vegetation consists of primarily non-native, horticultural plant species, although native oak trees are also present in some areas. Landscaping is most common in the area south of Palermo Road and the golf course north of Palermo Road. The landscaped cover type includes areas of pasture and other mowed, cultivated, or otherwise modified vegetation associated with residences, many of which are on large parcels

(ranchettes). Along SR 70, south of Power House Hill Road, a row of eucalyptus trees, a remnant of a once-larger eucalyptus grove, and a plant nursery were mapped as the landscaped cover type.

Wildlife Corridors

Wildlife movement corridors in California are identified and described for the California Essential Habitat Connectivity (CEHC) Project. The CEHC Project was commissioned by Caltrans and California Department of Fish and Wildlife (CDFW) to identify a functional network of connected wildlands, which are essential for maintaining California's native biodiversity. The CEHC Project was also intended to make transportation and land-use planning more efficient and less costly, while helping reduce dangerous wildlife-vehicle collisions (Spencer et al. 2010).

The CEHC Project identified large, relatively natural blocks of habitat (Natural Landscape Blocks) across California and Essential Connectivity Areas (ECAs) that provide essential connectivity between the habitat blocks. ECAs are identified as lands likely to be important to wildlife movement between large, mostly natural areas at the statewide level. The ECAs form a functional network of wildlands that are considered important to the continued support of California's diverse habitat types.

No Natural Landscape Blocks or ECAs were identified by the CEHC Project in or adjacent to the BSA, likely because of the presence of SR 70 in this area (California Department of Fish and Wildlife 2017). Although no wildlife movement corridors were identified, areas of undeveloped land, particularly the large expanse of annual grassland with vernal pools/swales between Palermo Road and Ophir Road, provide natural areas through which wildlife can and likely do disperse. All of the culverts under SR 70 along the natural area between Palermo and Ophir Roads are small (24 to 36-inch diameter). Two 96-inch-diameter culverts are at the south end of the project between Cox Lane and Walker Lane and could be used by wildlife to cross under the roadway. The bridge over Oak Knob Draw (south of Palermo Road) also provides a large passageway that wildlife could use to cross under the highway.

2.3.1.3 Environmental Consequences

The environmental consequences analysis for biological resources evaluated the potential changes to existing biological communities in the BSA based on the anticipated project construction activities listed below:

- Vegetation removal
- Grading and fill placement during construction
- Temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes

The following assumptions were used in assessing the magnitude of possible impacts on biological resources.

- The SR 70 project involves three roadway design alternatives; impacts of each alternative were assessed for the proposed project. Under the No-Build Alternative, no construction would take place; accordingly, no impacts on habitat or increases in impervious surfaces would occur. The No-Build Alternative would not directly affect biological resources.

- All construction, staging (including vehicle parking), storage, and access areas will be restricted to the permanent and temporary impact areas depicted in Figure 1-2.
- Impacts on land cover types and associated wildlife were determined by overlaying preliminary footprints for permanent project features and temporary work areas (e.g., access roads, equipment staging) onto aerial photographs of mapped habitats (Figure 2-8). Impact acreages and linear distances presented in this chapter are intended to provide a worst-case scenario; actual impacts are expected to be less based on avoidance of trees and other vegetation within temporary work areas.
- Riparian habitats were generally mapped as polygons based on canopy cover and include small open areas between trees. Impacts within these habitats are approximate and do not account for canopy that extends outside the project footprint from a tree that could be removed by the project.
- Removal of individual trees within oak woodland is not considered a significant or adverse impact and is not discussed further in this chapter.
- Temporary impacts on vegetation in natural communities of special concern would result from equipment access during construction.

The sensitive natural communities in the BSA that would be affected by the proposed project are oak woodland and valley foothill riparian. Impacts on these communities are discussed below. The common natural communities in the BSA that would be affected by the proposed project are ruderal, nonnative annual grassland ruderal, orchard, and agriculture. However, the loss of vegetation in common natural communities is not considered an adverse effect from a botanical standpoint, because these are common habitats that support primarily nonnative and invasive plant species. Impacts on wetlands and other waters of the United States in the BSA are discussed in Section 2.3.2.

Valley Foothill Riparian

Direct Impacts

Construction of the proposed project would result in trimming or removal of valley foothill riparian vegetation that is located along a drainage ditch near the intersection of SR 70 and Ophir Road. For the purposes of this analysis, all riparian vegetation disturbance and tree removal are considered permanent impacts because of the time required for habitat regeneration, even if the project construction component requiring the disturbance or removal is considered a temporary impact. One project BMP, fencing sensitive resource areas (described in Chapter 1) would minimize the potential for direct effects on valley foothill riparian.

Table 2.3.1-1 summarizes the impacts on valley foothill riparian by build alternative.

Table 2.3.1-1. Impacts on Valley Foothill Riparian by Alternative

Alternative 1		Alternative 2		Alternative 3	
Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
1.40	0.03	1.40	0.03	1.40	0.03

Indirect Impacts

It is not anticipated that there would be any indirect effects on valley foothill riparian as a result of the proposed project.

Significance Conclusion

Construction of any of the alternatives would result in the permanent loss of 1.40 acres of valley foothill riparian that is located along a drainage ditch at the northern end of the project area. CDFW has adopted a no-net-loss policy for riparian habitat values. The amount of riparian in the project area is limited (1.5 acres) and because of its scarcity, provides important habitat and ecological functions in the project area. Because 93% of the riparian in the project area would be permanently impacted by the project and riparian has been greatly reduced or eliminated throughout much of the Central Valley (Katibah 1981), the permanent loss of valley foothill riparian is significant. Implementation of Mitigation Measure BIO-1 (described below under section *2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures*) would reduce potential impacts on valley foothill riparian to less than significant.

Oak Woodland

Direct Impacts

The proposed project would result in removal of oak trees and other native trees in oak woodland, landscaped areas, and annual grassland. One project BMP, fencing sensitive resource areas (described in Chapter 1), would minimize the potential for direct effects on oak woodland. Compensatory mitigation for the permanent loss of valley foothill riparian would compensate for the loss of oak trees in riparian habitat.

Indirect Impacts

It is not anticipated that there would be any indirect effects on oak woodland as a result of the proposed project.

Significance Conclusion

The proposed project would remove as many as 20 mature oak trees that grow in landscaped areas or as an individual tree in annual grassland. Because these individual oak trees are not under regulatory protection, and no compensation would be required unless the tree is occupied by bats or has a Swainson's hawk nest, this would not be a significant or an adverse impact.

Wildlife Corridors

Direct Impacts

Construction activities and presence of construction equipment and personnel in areas where animals normally cross the highway would discourage animals from crossing in these areas when construction is occurring. Animals that use the large diameter culverts for travel under the roadway would be deterred from using them when construction activities are occurring at or near them. This would result in animals crossing the roadway instead of crossing under it through the culvert, which would increase their chance for being struck by a vehicle. These impacts would be in isolated

locations where work would be occurring and temporary, and would result in injury or mortality of individual animals, but are unlikely to substantially impact wildlife movement.

Indirect Impacts

A section of retaining wall would be constructed south of the Ophir Road / Pacific Heights Road intersection where a steep hillside is present. Animals would not be expected to cross in this area because of the steep hillside and therefore the installation of the section of retaining wall is unlikely to impact wildlife movement.

Significance Conclusion

Construction activities and widening of the highway are not anticipated to have a significant impact on wildlife movement and no mitigation is required.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

Valley Foothill Riparian

Avoidance and Minimization Measures

With implementation of the project BMP for fencing sensitive biological resources, no avoidance and minimization measures are required for valley foothill riparian.

Compensatory Mitigation

The permanent loss of 1.40 acres of valley foothill riparian, which was determined to be a significant impact as described above, will be mitigated through implementation of Mitigation Measure BIO-1 below. Table 2.3.1-2 summarizes the minimum acreages of compensation required by alternative for permanent impacts on valley foothill riparian. This compensation is subject to change during the permitting process.

Table 2.3.1-2. Compensation for Permanent Impacts on Valley Foothill Riparian by Alternative

Alternative 1	Alternative 2	Alternative 3
Compensation (acres)	Compensation (acres)	Compensation (acres)
1.40	1.40	1.40

Mitigation Measure BIO-1: Compensate for the Permanent Loss of Valley Foothill Riparian

To compensate for the loss of 1.40 acres of valley foothill riparian, Caltrans will purchase credits at an approved mitigation bank or offsite location to ensure no net loss of riparian habitat value. Caltrans will provide mitigation at a minimum ratio of 1:1, which would require purchasing a minimum of 1.40 acres of riparian at an offsite location or riparian habitat credits from an approved mitigation bank. The ratio and mitigation acreage will be confirmed during the review of future engineering drawings and may be modified during the permitting process (if there is an increase or decrease in the impact acreage), which will dictate the ultimate compensation. Caltrans will provide written evidence to the resource agencies that compensation has been provided. The amount to be paid to a mitigation bank will be the fee that is in effect at the time the fee is paid.

Wildlife Corridors

Avoidance and Minimization Measures

No measures to avoid or minimize, potential impacts on wildlife dispersal and migration corridors are proposed.

Compensatory Mitigation

No compensatory mitigation for potential impacts on wildlife dispersal and migration corridors is proposed.

2.3.1.5 References Cited

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2.3.2 Wetlands and Other Waters

2.3.2.1 Regulatory Setting

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

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

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details.

2.3.2.2 Affected Environment

Methods

As described in Section 2.3.1 above, the BSA was defined as the proposed project construction area, plus a 250-foot buffer outside of the proposed area of disturbance.

ICF botanist/wetland ecologists conducted delineation field work in the BSA on April 16, 17, and 24; July 8; and August 3, 2015. Additional delineation field work was conducted by ICF botanist/wetland ecologists on October 12, 13, 16, 17, 19, 20, 23, and 24 and November 20, 2017. The delineation was conducted using the routine onsite determination method described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the supplemental procedures and wetland indicators provided in the Regional Supplement to the *Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008).

Other waters of the United States were mapped and delineated in the field in accordance with indicators and guidance in USACE Regulatory Guidance Letter No. 05-05, dated December 7, 2005 (U.S. Army Corps of Engineers 2005), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region* (Lichvar and McColley 2008). Methods and standards conform to the USACE Sacramento District's *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (U.S. Army Corps of Engineers 2016a) and *Revised Map and Drawing Standards for the Pacific Division Regulatory Program Delineations* (U.S. Army Corps of Engineers 2016b).

USACE completed a preliminary jurisdictional determination and provided concurrence with the aquatic resources delineation in a letter to Caltrans dated July 20, 2018.

Wetlands

As discussed in Section 2.3.1 above, there are 13 land cover types within the BSA, 6 of which are wetlands or non-wetland waters. Locations and dominant plant species found in the 6 types of wetlands or non-wetland waters within the BSA are described below.

Vernal Pool/Vernal Swale

Vernal pool/vernal swale complexes occur in the annual grassland on the east side of SR 70 in the southern part of the BSA and on both sides of SR 70 north of Palermo Road. These wetlands are normally inundated during the winter and early spring and are dry by late spring. Dominant species in this community include species such as horned downingia (*Downingia ornatissima*), white headed navarretia (*Navarretia leucocephala* ssp. *leucocephala*), Great Valley button celery (*Eryngium castrense*), Fremont's goldfields (*Lasthenia fremontii*), and yellow owl's clover (*Castilleja campestris*).Vernal pools and swales are considered waters of the United States.

Seasonal Wetland/Seasonal Swale

Seasonal wetlands and seasonal swales are hydrologically similar to vernal pool/vernal swale complexes, but they support fewer native species. These wetlands occur within some roadside and irrigation ditches and adjacent to roads at the SR 70/Palermo Road intersection. Oak Knob Draw crosses SR 70 near the community of Oak Grove, but ends before it reaches the Feather River, west of the BSA. Dominant species in seasonal wetlands and swales include Italian ryegrass (*Festuca perennis*), Bermuda grass (*Cynodon dactylon*), Chilean rabbitsfoot grass (*Polypogon australis*), and dallisgrass (*Paspalum dilatatum*). Seasonal wetlands and swales are considered waters of the United States.

Seasonal Emergent Wetland

Seasonal emergent wetland occurs in several locations within the BSA:

- in irrigation ditches at and north of the SR 70/Power House Hill Road intersection,
- in Oak Knob Draw, a drainage that supports seasonal emergent wetland vegetation,
- in a pond on the south side of Oak Knob Draw, and
- at the SR 70/Ophir Road intersection between Pacific Heights Road and Ophir Road and between SR 70 and Feather River Boulevard.

Oak Knob Draw crosses SR 70 near the community of Oak Grove and ends before it reaches the Feather River to the west of the BSA. Seasonal emergent wetland occurs in low areas that generally remain inundated for longer periods than vernal pool or seasonal wetlands and that consequently support a different plant community. Dominant species in this community include lanceleaf water plantain (*Alisma lanceolatum*), narrow leaved cattail (*Typha angustifolia*), umbrella sedge (*Cyperus eragrostis*), and purple loosestrife (*Lythrum salicaria*). Seasonal emergent wetlands may also support a riparian overstory, including Pacific willow (*Salix lasiandra* var. *lasiandra*) and arroyo willow (*Salix lasiolepis*). Seasonal emergent wetlands are considered waters of the United States.

Non-Wetland Waters

Ephemeral Drainage

Three ephemeral drainages were mapped in the BSA. These are naturally occurring drainages that primarily carry flow after rain events and are either unvegetated or support annual grassland vegetation. Two of the drainages, one approximately 1 mile north of the SR 70/Palermo Road intersection and one approximately 0.8 mile south of the SR 70/Ophir Road intersection, are tributaries of Feather River. A third drainage is approximately 0.25 mile south of the SR 70/Ophir Road intersection and borders an area of oak woodland on dredge tailings, but this drainage does not connect to any others. The ephemeral drainages were dry at the time of the spring and summer 2015 field surveys, but the tributaries contained water during the December 2015 field survey. The ephemeral drainages are considered waters of the United States.

2.3.2.3 Environmental Consequences

Wetlands

Direct Impacts

Construction of the proposed project would result in permanent and temporary impacts on vernal pool/vernal swale, seasonal wetland/seasonal swale, and seasonal emergent wetland habitats. Impacts were considered to be permanent if they would result in the placement of permanent fill in these wetland habitats associated with SR 70 widening. Impacts were considered to be temporary if fill would be removed following completion of construction and temporarily disturbed portions of wetlands would be restored. One project BMP, fencing sensitive resource areas (described in Chapter 1) and water quality protections in the project SWPPP, would minimize the potential for direct effects on wetlands.

Impacts on wetlands would occur under all three proposed build alternatives. Table 2.3.2-1 summarizes the impacts on wetland type by build alternative. These acreages are pending verification of the delineation by USACE Sacramento District.

Table 2.3.2-1. Impacts on Wetland Type by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Wetland Type	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Vernal pool/ vernal swale	1.94	0.26	2.48	0.35	2.30	0.35
Seasonal wetland/ seasonal swale	0.42	0.009	0.46	0.007	0.47	0.001
Seasonal emergent wetland	0.54	0.19	0.76	0.06	0.74	0.05
Total wetland impact	2.90	0.46	3.70	0.42	3.51	0.40

Indirect Impacts

Indirect impacts caused by sedimentation or modification of hydrology could occur in portions of wetlands that lie outside the project footprint.

Significance Conclusion

Because vernal pool/vernal swale, seasonal wetland/seasonal swale, and seasonal emergent wetland are waters of the United States and waters of the State and are regulated by the USACE, loss of these wetlands would be a significant adverse impact. Implementation of Mitigation Measures BIO-2 and BIO-3 (described below under section *2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures*) would reduce potential impacts on wetlands to less than significant.

Non-Wetland Waters

Direct Impacts

Construction of the proposed project would result in permanent and temporary impacts on ephemeral drainage habitats. Impacts were considered to be permanent if they would result in the placement of permanent fill in ephemeral drainage habitats associated with widening of SR 70.

Impacts were considered to be temporary if fill would be removed following completion of construction and temporarily disturbed portions of the ephemeral drainage would be restored. Temporary impacts on ephemeral drainages may include modification of the stream bank or channel, increased turbidity, and runoff of chemical substances. One project BMP, fencing sensitive resource areas (described in Chapter 1) and water quality protections in the project SWPPP, would minimize the potential for direct effects on wetlands.

Impacts on ephemeral drainages would be the same under all three proposed build alternatives. Table 2.3.2-2 summarizes the impacts on ephemeral drainages by build alternative. These acreages are pending verification of the delineation by USACE Sacramento District.

Table 2.3.2-2. Impacts on Ephemeral Drainages by Alternative

Alternative 1		Alternative 2		Alternative 3	
Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
0.02	0.006	0.02	0.006	0.02	0.006

Indirect Impacts

Indirect impacts on water quality, such as increased turbidity and chemical runoff, may also result from project construction within the downstream portions of drainages and in drainages that are outside the project footprint.

Significance Conclusion

Because ephemeral drainages in the BSA are waters of the United States and waters of the State and are regulated by the USACE, loss of ephemeral drainage would be a significant adverse impact. Implementation of Mitigation Measure BIO-4 (described below under section *2.3.2.4 Avoidance,*

Minimization, and/or Mitigation Measures) would reduce potential impacts on non-wetland waters to less than significant.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Wetlands

Avoidance and Minimization Measures

In addition to the water quality protections in the project SWPPP and the project BMP for fencing sensitive biological resources, Caltrans will implement Mitigation Measures BIO-2 described below to ensure that the proposed project minimizes effects on wetlands in and adjacent to the designated work area.

Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees

Caltrans will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel and will brief them on the need to avoid effects on listed, threatened, and candidate species and vernal pool habitat. The education program will include a brief review of the listed and candidate species with the potential to occur in the BSA (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the BSA in which the species may occur, as well as their legal status and protection. The program also will cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. This will include the steps to be taken if a listed or candidate species is found within the construction area (i.e., notifying the crew foreman, who will call a designated biologist). An environmental awareness handout that describes the candidate and listed species and the vernal pool habitat to be avoided during project construction and identifies all relevant permit conditions will be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.

Compensatory Mitigation

Compensation for permanent direct effects on seasonal wetland/seasonal swale and seasonal emergent wetland will be mitigated through implementation of Mitigation Measure BIO-3 below. Direct and indirect impacts on vernal pool/vernal swale will be mitigated at a 3:1 ratio as vernal pool branchiopod habitat through implementation of Mitigation Measure BIO-9 (Compensate for Loss of Vernal Pool Branchiopod Habitat in Section 2.3.5.4). Table 2.3.2-3 summarizes acreages of compensation required by alternative for permanent impacts on wetlands. Impact acreages are pending verification of the delineation by USACE Sacramento District, and compensation is subject to change during the permitting process.

Table 2.3.2-3. Compensation for Permanent Impacts on Wetlands by Alternative

Habitat Type	Alternative 1 (acres)	Alternative 2 (acres)	Alternative 3 (acres)
Vernal pool/vernal swale (3:1 ratio)[a]	5.82	7.44	6.90
Seasonal wetland/seasonal swale (1:1 ratio)[a]	0.427	0.46	0.47
Seasonal emergent wetland (1:1 ratio)	0.54	0.76	0.74

[a] Vernal pool/vernal swale and seasonal wetland/swale are habitats for federally listed vernal pool branchiopods and will be mitigated at 3:1 as part of the compensatory mitigation for listed vernal pool branchiopods (described Section 2.3.5 Threatened and Endangered Species).

Mitigation Measure BIO-3: Compensate for Loss of Wetlands

Caltrans will compensate for the permanent fill of waters of the United States/waters of the State (a direct impact associated with roadway construction) in seasonal wetland/seasonal swale and seasonal emergent wetland. The minimum wetland compensation ratio to ensure no net loss of wetland functions and values for seasonal wetland/seasonal swale and seasonal emergent wetland habitats will be 1:1 (1 acre of wetland habitat credit for every 1 acre of permanent impact). Final compensatory ratios will be determined during the permitting process. Caltrans will compensate for permanent loss of seasonal wetland/seasonal swale and seasonal emergent wetland through one or more of the following mitigation options:

- Purchase compensatory credits for the affected wetland habitat types at an approved mitigation bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.
- Pay into the Butte County In-Lieu Fee program, if it is in place at the time of project permitting.
- Temporarily disturbed wetlands will be returned to pre-construction condition following construction. Caltrans also will implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

Non-Wetland Waters

Avoidance and Minimization Measures

With implementation of the water quality protections in the project SWPPP and the project BMP for fencing sensitive biological resources, no avoidance and minimization measures are required.

Compensatory Mitigation

Compensation for permanent direct effects on ephemeral drainage will be mitigated through implementation of Mitigation Measure BIO-4 below. Impact acreages are pending verification of the delineation by USACE Sacramento District, and compensation is subject to change during the permitting process.

Mitigation Measure BIO-4: Compensate for the Placement of Permanent Fill into Ephemeral Drainages

Caltrans will compensate for the permanent fill of other waters of the United States/waters of the State (a direct impact associated with roadway construction) in ephemeral drainages. The minimum ephemeral drainage compensation ratio will be 1:1 (1 acre of ephemeral drainage habitat credit for every 1 acre of permanent impact) to ensure no net loss of habitat functions and values. The final compensatory ratio will be determined during the permitting process. Caltrans will compensate for permanent loss of ephemeral drainage through one or more of the following mitigation options:

- Purchase compensatory credits at a USACE-approved mitigation bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.
- Pay into the Butte County In-Lieu Fee program, if it is in place at the time of project permitting.

Temporarily disturbed ephemeral drainages will be returned to preconstruction condition following construction. All additional conditions and requirements of state and federal permits that will be obtained for the proposed project will also be implemented.

2.3.2.5 References Cited

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers Wetlands Delineation Manual*. (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

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2.3.3 Plant Species

This section discusses special-status plant species that are not federally or state-listed. Listed plant species are discussed in Section 2.3.5, and protected trees are discussed in Section 2.3.1.

2.3.3.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section 2.3.5 in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

2.3.3.2 Affected Environment

Methods

An ICF botanist reviewed the California Native Plant Society's (CNPS's) online Inventory of Rare and Endangered Plants of California (California Native Plant Society 2015), the California Natural Diversity Data Base (CNDDB) (California Department of Fish and Wildlife 2015), and USFWS's list of endangered and threatened species that may occur in or be affected by the proposed project (U.S. Fish and Wildlife Service 2015) to develop a list of special-status plants that could be present in the project region. For preparation of this document, an updated USFWS (2018) species list was obtained from the IPaC website and the most recent version of the CNPS Inventory (California Native Plant Society 2017) and CNDDB (California Department of Fish and Wildlife 2017) were reviewed and are included in Appendix E.

ICF botanists conducted botanical surveys in the BSA on April 16, 17, and 24, 2015; July 8 and August 3, 2015; April 24 and 27 and May 17, 2018. The spring and summer surveys coincided with the identification periods of special-status plants with potential to occur in the project region. The botanists walked the accessible parts of the BSA and compiled lists of plant species observed. For the parts of the BSA that were not accessible, the botanists mapped the natural communities and potential special-status plant habitats based on roadside observations. Appendix D includes a list of plant species observed in the BSA.

Typical Plant Species in the BSA

Dominant plant species found in the 9 land cover types within the BSA that are not wetlands or other waters are described in Section 2.3.1. Dominant plant species found in the 4 land cover types that are wetlands or non-wetland waters of the United States are described in Section 2.3.2. A complete list the plant species observed in the BSA is provided in Appendix D.

Special-Status Plants

Based on the CNDDB search results, the CNPS Inventory, and the USFWS list for the project region (Appendix E), 19 special-status plant species were identified as occurring within 5–10 miles of the BSA (Table 2.3.3-1). Of these 19 species, 6 occur at higher elevations than those in the BSA, which ranges from approximately 100 to 230 feet, or have habitat or microhabitat requirements (e.g., perennial marsh in rivers, sloughs, or streams; serpentine soils; rocky roadsides) that are not present in the BSA. The vernal pool/swale, seasonal wetland/swale, annual grassland, and oak woodland natural communities in the BSA contain potential habitat for the following 10 special-status plant species that are known to occur within approximately 10 miles of the BSA:

- Ferris' milk-vetch (California Rare Plant Rank [CRPR] 1B.1)
- round-leaved filaree (CRPR 1B.1)
- recurved larkspur (CRPR 1B.2)
- Butte County fritillary (CRPR 3.2)
- adobe-lily (CRPR 1B.2)
- Ahart's dwarf rush (CRPR 1B.2)
- Red Bluff dwarf rush (CRPR 1B.1)
- Baker's navarretia (CRPR 1B.1)
- Ahart's paronychia (CRPR 1B.1)
- Butte County golden clover (CRPR 1B.2)

Two of these special-status plants (recurved larkspur and Ahart's dwarf rush) have been recorded within the BSA (California Department of Fish and Wildlife 2017). Recurved larkspur is recorded east of SR 70 in an area south of Ophir Road (California Department of Fish and Wildlife 2017). A part of the identified occurrence area was accessible and was surveyed in April 2015. No recurved larkspur was observed. Ahart's dwarf rush is documented at five locations in the BSA and several more near the BSA in the area north of Palermo Road (California Department of Fish and Wildlife 2017). The parcels where the occurrences of Ahart's dwarf rush are recorded were not surveyed due to access restrictions, and, therefore, the continuing presence of these plants could not be verified. In addition, Ahart's dwarf rush is an annual plant that might have been dormant in 2015 due to drought conditions over several years. Because the habitat for these two species is intact in the BSA, they are presumed to be present in the BSA.

The other 8 special-status plants listed above are known to occur within 10 miles of the BSA and have suitable habitat in the BSA. Two species that occur only on clay soils, round-leaved filaree and adobe-lily, were considered to have suitable habitat in the BSA, although the typical profiles of the soil map units in the BSA do not include clay soils near the surface. The shallowest clays are at 17 inches below ground surface in the Eastbiggs loam and Kimball loam map units. However, a minor component of the Eastbiggs loam map unit that has clay soils in swales could occur in the BSA and could support special-status plant species in those swales.

Three additional federally listed plants are discussed below in Section 2.3.5.

The surveys coincided with the reported identification periods of all 19 special-status plant species. No special-status plants were observed during the 2015 and 2018 blooming period surveys. However, access was not available to survey large areas of suitable habitat in the BSA, and the drought conditions over several years might have limited the extent of annual species.

Table 2.3.3-1. Special-Status Plant Species with Potential to Occur in the Vicinity of the State Route 70 Corridor Improvements Biological Study Area

Common Name (Scientific Name)	Status Federal/State/CRPR[a]	General Habitat Description	Blooming Period	Habitat Present/ Absent	Rationale
Ferris' milk-vetch *(Astragalus tener var. ferrisiae)*	–/–/1B.1	Historical range included the Central Valley from Butte to Solano County but currently only occurs in Butte, Glenn, Colusa, Sutter, and Yolo Counties. Seasonally wet areas in meadows and seeps, subalkaline flats in valley and foothill grassland; 2-75 meters.	April–May	Habitat present	Suitable habitat in BSA vernal pools/swales and marginal habitat in seasonal wetlands/swales, but no subalkaline flats observed. Nearest recorded occurrence is more than 10 miles from the BSA. Covered species in BRCP. Not observed in April or May 2015 surveys of accessible habitat.
Big-scale balsamroot *(Balsamorhiza macrolepis)*	–/–/1B.2	Scattered occurrences in the Coast Ranges and Sierra Nevada Foothills. Sometimes on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 90-1555 meters.	March–June	Habitat absent	Marginal habitat in BSA grasslands and oak woodland, does not have serpentine soils and is below the known elevational range. Nearest recorded occurrence is ~10 miles northwest of the BSA. Not observed in April 2015 surveys of accessible habitat.
Round-leaved filaree (*California macrophylla*)	–/–/1B.2	Scattered occurrences in the Great Valley, southern North Coast Ranges, San Francisco Bay Area, South Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges. Cismontane woodland, valley and foothill grassland on clay soils; 15-1200 meters.	March–May	Habitat present	Suitable habitat in BSA grassland, which could have areas of clay soils in swales. Nearest recorded occurrence is ~9.5 miles northwest of the BSA. Not observed in April 2015 surveys of accessible habitat.

Common Name (Scientific Name)	Status Federal/State/CRPR[a]	General Habitat Description	Blooming Period	Habitat Present/ Absent	Rationale
Pink creamsacs (*Castilleja rubicundula* var. *rubicundula)*	–/–/1B.2	Inner North Coast Ranges with occurrences in Butte, Contra Costa, Colusa, Glenn, Lake, Napa, Santa Clara, and Shasta Counties. Serpentine soils in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland; 20-910 meters.	April–June	Habitat absent	No serpentine soils in BSA. Nearest recorded occurrence is ~3.5 miles north of the BSA. Not observed in April 2015 surveys.
Brandegee's clarkia (*Clarkia biloba* ssp. *Brandegeeae)*	–/–/4.2	Northern Sierra Nevada Foothills from Butte to El Dorado Counties. Chaparral, cismontane woodland, lower coniferous forest, often on roadcuts; 75-915 meters.	May–July	Habitat absent	Marginal habitat in BSA oak woodland, and BSA is below the known elevational range. Nearest recorded occurrence is ~4.5 miles northeast of the BSA. Not observed in April or July 2015 surveys.
Mosquin's clarkia (*Clarkia mosquinii)*	–/–/1B.1	Northern Sierra Nevada Foothills in vicinity of Feather River Canyon near Pulga in northeast Butte County and Plumas County. Rocky, roadside areas in cismontane woodland and lower montane coniferous forest; 185-1219 meters.	May–July	Habitat absent	No suitable habitat in BSA, which has no rocky roadsides with oak woodland and is below the known elevational range. Nearest recorded occurrence is ~10.4 miles northeast of the BSA. Not observed in April 2015 surveys.
Recurved larkspur (*Delphinium recurvatum)*	–/–/1B.2	Central Valley from Colusa (extirpated) to Kern Counties. Alkaline soils in valley and foothill grassland, saltbush scrub, cismontane woodland; 3-790 meters.	March–June	Habitat present	Marginal habitat in BSA annual grassland and oak woodland. No alkaline soils mapped in BSA, although species is recorded in the BSA, south of Ophir Road and SR 70. Not observed in April 2015 surveys of accessible habitat.

Common Name (Scientific Name)	Status Federal/State/CRPR[a]	General Habitat Description	Blooming Period	Habitat Present/ Absent	Rationale
Butte County fritillary (*Fritillaria eastwoodiae)*	–/–/3.2	Sierra Nevada Foothills, from Shasta to El Dorado Counties; also Oregon. Chaparral, cismontane woodland, openings in lower montane coniferous forest, sometimes on serpentine; 50-1500 meters.	March–June	Habitat present	Marginal habitat in BSA oak woodlands, but no serpentine soils present. Nearest recorded occurrence is ~7 miles northeast of the BSA. Not observed in April 2015 surveys.
Adobe-lily (*Frillaria pluriflora)*	–/–/1B.2	Northern Sierra Nevada Foothills, Inner North Coast Ranges, edges of Sacramento Valley. Chaparral, cismontane woodland, valley and foothill grassland, often on adobe soils; 60-705 meters.	February–April	Habitat present	Suitable habitat in BSA grassland, which could have areas of clay soils in swales, and oak woodland. Nearest recorded occurrence is ~10 miles northwest of the BSA. Not observed in April 2015 surveys of accessible habitat.
Rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis)*	–/–/2.2	Freshwater marsh along rivers and sloughs; often in rip-rap on sides of levees; below 120 meters.	June–September	Habitat absent	No suitable perennial marsh habitat along BSA drainages. Nearest recorded occurrence is ~8 miles northwest of the BSA. Not observed in July or August 2015 surveys.
Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii)*	–/–/1B.2	Eastern Sacramento Valley, northeastern San Joaquin Valley with occurrences in Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba Counties. Wet areas in valley and foothill grassland, vernal pool margins; 30-229 meters.	March–May	Species present	Suitable habitat in BSA vernal pools/swales and marginal habitat in seasonal wetlands/swales. 22 recorded occurrences in or adjacent to the BSA north of Palermo Road, and all but 1 are located on the east side of SR 70. Covered species in BRCP. Not observed in April 2015 surveys of accessible habitat.

Common Name (Scientific Name)	Status Federal/State/CRPR[a]	General Habitat Description	Blooming Period	Habitat Present/ Absent	Rationale
Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus)*	–/–/1B.1	Northern Sacramento Valley and Cascade Range foothills with occurrences in Butte, Placer, Shasta, and Tehama Counties. Seasonally wet areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; 35-1250 meters.	March–June	Habitat present	Suitable habitat in BSA vernal pools/swales and marginal habitat in seasonal wetlands/swales. Nearest recorded occurrence is more than 10 miles from the BSA. Covered species in BRCP. Not observed in April 2015 surveys of accessible habitat.
Baker's navarretia (*Navarretia leucocephala* ssp. *Bakeri*)	–/–/1B.1	Mesic areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; 5–1740 meters.	April–July	Habitat present	Suitable habitat in BSA vernal pools/swales and marginal habitat in seasonal wetlands/swales. Nearest recorded occurrence is ~9.8 miles southwest of the BSA. Not observed in April or July 2015 surveys of accessible habitat.
Ahart's paronychia (*Paronychia ahartii)*	–/–/1B.1	Northern Central Valle in Butte, Shasta, and Tehama Counties. Cismontane woodland, valley and foothill grassland, vernal pools; 30-510 meters.	February–June	Habitat present	Suitable habitat in BSA vernal pools/swales and marginal habitat in seasonal wetlands/swales. Nearest recorded occurrence is ~3.7 miles northwest of the BSA. Covered species in BRCP. Not observed in April 2015 surveys of accessible habitat.
Sanford's arrowhead (*Sagittaria sanfordii)*	–/–/1B.2	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 650 meters.	May–October	Habitat absent	No suitable perennial marsh habitat along BSA drainages. Nearest recorded occurrence is ~4 miles west of the BSA. Not observed in July or August 2015 surveys.

Common Name (Scientific Name)	Status Federal/State/CRPR[a]	General Habitat Description	Blooming Period	Habitat Present/ Absent	Rationale
Butte County golden clover (*Trifolium jokerstii*)	–/–/1B.2	Known only from Butte County. Moist areas in valley and foothill grassland, swales, vernal pool margins; 50-385 meters.	March–May	Habitat present	Suitable habitat in BSA vernal pools/swales and marginal habitat in seasonal wetlands/swales. Nearest recorded occurrence is ~5.6 miles northwest of the BSA. Not observed in April 2015 surveys of accessible habitat.

Sources: California Native Plant Society 2017; California Department of Fish and Wildlife 2017.

Absent = no habitat present and no further work needed.
Habitat Present = habitat is, or may be present. The species may be present.
Species Present = the species is present.
BSA = biological study area.

[a] Status explanations:

Federal

– = No listing status.

State

– = No listing status.

California Rare Plant Rank (CRPR)

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
3 = List 3 species: more information is needed about this plant.
4 = List 4 species: limited distribution; species on a watch list.
.1 = Seriously endangered in California (over 80% of occurrences threatened—high degree and immediacy of threat).
.2 = Fairly endangered in California (20-80% occurrences threatened).

2.3.3.3 Environmental Consequences

Special-Status Plants

Special-status plants were not observed within the BSA during appropriately timed botanical surveys in parcels for which access was available, including vernal pool/vernal swale habitat on the east side of SR 70 in the southern portion of the BSA. However, it was determined that special-status plants associated with vernal pools/vernal swales could occur in the BSA, based on the documented presence of Ahart's dwarf rush in the BSA north of Palermo Road and the presence of unsurveyed vernal pool/vernal swale habitat on the west side of SR 70 north of Palermo Road. Annual grassland and oak woodland in this same part of the BSA could not be accessed to conduct surveys. These areas provide suitable habitat for special-status plants, including round-leaved filaree, recurved larkspur, Butte County fritillary, and adobe-lily.

Direct Impacts

For purposes of this impact analysis, vernal pool/vernal swale, annual grassland, and oak woodland in the BSA are assumed to be occupied by special-status plants. Under the proposed project, direct temporary and permanent impacts would occur in the areas that have not been graded and support undisturbed habitat. Accordingly, there could be direct impacts on recurved larkspur, Ahart's dwarf rush, and other special-status plants with suitable habitat in vernal pool/vernal swale, annual grassland, and oak woodland communities.

Impacts on special-status plant habitat would occur under all three proposed build alternatives. Table 2.3.3-2 summarizes the potential impacts on vernal pool/vernal swale and oak woodland by build alternative. Because the extent of occupied habitat likely is much less than this total amount, the acreages in the table represent a worst-case scenario. Preconstruction surveys of the selected project alternative would be implemented to identify the actual extent of special-status species impacts in vernal pool/vernal swale and oak woodland habitat.

Up to 49.2 acres of annual grassland in the BSA would be directly impacted by project construction, but the extent of annual grassland habitat likely to support special-status species would be much less than this total amount. Therefore, the assumption that all directly impacted annual grassland is occupied habitat for special-status plants would be greatly inflated, and the acreage was not included in the table below. Preconstruction surveys of the selected project alternative would be implemented to identify the actual extent of special-status species impacts in annual grassland. No federally listed plant species with potential to occur in the project area have habitat in non-wetland grassland habitat.

One project BMP, fencing sensitive resource areas (described in Chapter 1), would minimize the potential for direct effects on special-status plants. Impacts on special-status plants could potentially occur under all three proposed build alternatives. Table 2.3.3-2 summarizes the impacts on potential special-status plant habitat by build alternative.

Table 2.3.3-2. Potential Maximum Impacts on Special-Status Plant Habitat by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Habitat Type	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Vernal pool/ vernal swale	1.94	0.26	2.48	0.35	2.30	0.35
Oak woodland	0.30	0.06	0.40	0.16	0.31	0.06

Indirect Impacts

Indirect impacts caused by sedimentation or modification of hydrology could occur in portions of vernal pools/vernal swales that lie outside the project footprint but that are connected to the directly affected wetlands. Construction activities such as excavation, grading, paving, or stockpiling of soil could result in indirect effects on special-status plants in vernal pools/vernal swales by altering the suitability of nearby habitat. Runoff of sediment, gasoline, oil, or other contaminants could result in degradation of water quality within suitable habitat, but will be prevented by implementation of standard Caltrans BMPs and the project SWPPP. Changes in hydrology also could reduce the suitability of habitat by altering the hydroperiod of vernal pools/vernal swales.

Significance Conclusion

State and federal agencies will require avoidance, minimization, and compensatory mitigation for the loss of special-status plants. The loss or disturbance of special-status plants or their occupied habitat is considered significant and adverse. Implementation of Mitigation Measures BIO-2, BIO-5, and BIO-6 (described below under section *2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures*) would reduce potential impacts on special-status plants to less than significant.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Special-Status Plants

Avoidance and Minimization Measures

In addition to the water quality protections in the project SWPPP and the project BMP for fencing sensitive biological resources, BCAG will implement Mitigation Measure BIO-2, described in Section 2.3.2, and listed below to ensure that potential effects on special-status plant habitat in and adjacent to the designated work area are minimized. Additional avoidance and minimization measures may be agreed upon during the future permitting phase. Additionally, Mitigation Measure BIO-5 will be implemented to identify special-status plant occupied areas in or near project construction.

Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees

Please see Section 2.3.2 for the description of this measure.

Mitigation Measure BIO-5: Conduct Floristic Surveys for Special-Status Plants during Appropriate Identification Periods and Implement Protective Measures as Feasible

Caltrans will retain a qualified botanist to survey the BSA to document the presence or absence of special-status plants before project construction. The botanist will conduct a floristic survey that follows the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the blooming period. To account for special-status plant identification periods, a field survey will be conducted prior to any project construction and in the months of April and June or July. The botanist will photograph and map locations of all special-status plants identified during the surveys, document the location and extent of the special-status plant population on a CNDDB Survey Form, and submit the completed Survey Form to the CNDDB.

Wherever feasible, avoidance and minimization measures will be implemented to reduce direct impacts on special-status plants found in or adjacent to the construction area by creating a 100-foot buffer around the plants and by installing and maintaining exclusion fencing, as described in the project BMPs. The buffer size may be reduced if site-specific conditions indicate that the hydrology where the plants are located would not be affected by construction and if CDFW or USFWS (for federally listed species) concur. BCAG will redesign or modify the proposed project wherever feasible in order to avoid indirect or direct effects on special-status plants identified within the project construction area during the surveys. Any special-status plants in the proposed staging areas will be avoided.

Compensatory Mitigation

Where special-status plants cannot be avoided, Caltrans will implement Mitigation Measure BIO-6. This compensation is subject to change during the permitting process. Compensation for effects on vernal pool fairy shrimp and vernal pool tadpole shrimp (discussed in Section 2.3.4) will also benefit special-status plants that occur in vernal pool habitats.

Mitigation Measure BIO-6: Compensate for Permanent Impacts on Special-Status Plants

If complete avoidance of special-status plants is not feasible, Caltrans will compensate for unavoidable permanent direct effects on special-status plants through protection of suitable habitat that is of equal or greater function than the impacted habitat at a 2:1 ratio (habitat preserved: habitat impacted), or as agreed upon through coordination with CDFW (for state-listed or CNPS-ranked species) or USFWS (for federally listed species). The final compensation acreage will be based on the results of the preconstruction surveys of the selected project alternative.

2.3.3.5 References Cited

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———. 2018. List of threatened and endangered species that may occur in and/or may be affected by the State Route 70 Corridor Improvements Project. May 4. Obtained from the IPaC website http://ecos.fws.gov/ipac.

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts on animals. The U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species are discussed in this section, including CDFW fully protected species and species of special concern, and USFWS or NMFS candidate species.

The following federal laws and regulations listed below are relevant to animals that are not listed or proposed for listing under the ESA.

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

The following state laws and regulations listed below are relevant to animals that are not listed or proposed for listing under the CESA.

- California Environmental Quality Act
- California Fish and Game Code
    - Fish and Wildlife Protection and Conservation (Sections 1600–1603)
    - Protection of Birds and Raptors (Sections 3503 and 3503.5)
    - Fully Protected Species (Sections 3511, 3513, 4700, and 5050)

2.3.4.2 Affected Environment

Methods

As described in Section 2.3.1, the BSA was defined as the project footprint.

An ICF wildlife biologist reviewed the CNDDB (California Department of Fish and Wildlife 2015) and USFWS's list of endangered and threatened species that may occur in or be affected by the proposed project (U.S. Fish and Wildlife Service 2015) to develop a list of special-status animals that could be present in the project region. Species from the lists were considered if they were known to occur in the project region (i.e., within approximately 10 miles of the BSA) or had potential habitat in the BSA and the BSA was within the species' range. For preparation of this document, an updated USFWS (2018) species list was obtained from the IPaC website and the November 2017 version of the CNDDB (California Department of Fish and Wildlife 2017) were reviewed and are included in Appendix E.

ICF wildlife biologist Jennifer Haire conducted a reconnaissance-level field survey of the BSA on December 9, 2015. This survey focused on evaluating biological communities in the study area and determining their suitability for special-status animal species. Ms. Haire drove along the project corridor and walked portions of the study area where access permission had been obtained, making notes on the types and suitability of habitat present, and recording any wildlife species observed. The assessment for the presence of special-status fish was based on information collected during the field survey, examination of topographic maps and aerial photographs, and the professional judgement of ICF fish biologist Bill Mitchell. Appendix F includes a list of wildlife species observed during the field survey.

Special-Status Animals

Animals that are not listed or proposed for listing under the ESA or CESA that have the potential to occur in the BSA and be affected by the proposed project are listed in Table 2.3.4-1.

Table 2.3.4-1. Non-listed Special-Status Animal Species with Potential to Occur in the Vicinity of the State Route 70 Corridor Improvements Biological Study Area

Common and (Scientific Name)	Legal Status (Federal/State/ Other)[a]	General Habitat Description	Habitat Present/ Absent	Rationale
Amphibians				
Western spadefoot *(Spea hammondii)*	–/SSC/–	Occurs in the Sierra Nevada foothills, Central Valley, Coast Ranges, and coastal counties in southern California; west of Sierran-desert range axis. Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands, also temporary rain pools.	Present	Vernal/seasonal pools and swales in the BSA provide suitable habitat.
Reptiles				
Western pond turtle *(Actinemys marmorata)*	–/SSC/–	Occurs throughout California west of the Sierra-Cascade crest. Found from sea level to 6,000 feet. Does not occur in desert regions except for along the Mojave River and its tributaries. Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Present	Seasonal emergent wetland associated with an irrigation canal, a pond, and Oak Knob Draw in the BSA provide suitable aquatic habitat.
Blainville's (Coast) horned lizard *(Phrynosoma blainvillii)*	–/SSC/–	Sacramento Valley, including foothills, south to southern California; Coast Ranges south of Sonoma County; elevation sea level to 6,500 feet and below 4,000 feet in northern California. Requires sandy or loose soil and abundant ant colonies for foraging; habitat ranges from exposed gravelly-sandy substrate in riparian woodlands to dry uniform chamise chaparral to annual grassland or saltbrush.	Absent	No sandy or loose soil in the BSA.

Common and (Scientific Name)	Legal Status (Federal/State/ Other)[a]	General Habitat Description	Habitat Present/ Absent	Rationale
Birds				
Northern harrier *(Circus cyaneus)*	–/SSC/–	Occurs throughout lowland California. Has been recorded in fall at high elevations. Nests and forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands.	Present	Could forage in grassland and agricultural areas in the BSA. Could nest in grassland and adjacent weedy ruderal fields.
White-tailed kite[b] *(Elanus leucurus)*	–/FP/–	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border. Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	Present	Observed perching in the BSA during the December 2015 survey. Suitable nest trees in the BSA. Could forage in grassland and agricultural areas in the BSA.
Western burrowing owl *(Athene cunicularia hypogea)*	–/SSC/–	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast. Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows.	Present	Suitable habitat in grassland areas and along the borders of agricultural lands.
Loggerhead shrike *(Lanius ludovicianus)*	–/SSC/–	Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter. Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	Present	Suitable habitat in grassland areas, oak woodland, and agricultural lands.
Tricolored blackbird *(Agelaius tricolor)*	–/C/–	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties. Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony.	Present	Could forage in grassland and agricultural areas in the BSA but nesting habitat is not present.

Common and (Scientific Name)	Legal Status (Federal/State/ Other)[a]	General Habitat Description	Habitat Present/ Absent	Rationale
Yellow warbler *(Dendroica petechia brewsteri*)	–/SSC/–	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Two small permanent populations in San Diego and Santa Barbara Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses	Absent	May occasionally forage in the BSA but would not nest in the riparian areas in the BSA because they are too small and isolated from other riparian areas.
Mammals				
Pallid bat[b] *(Antrozous pallidus)*	–/SSC/–	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations. 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 and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts.	Present	Could roost in oak woodland, mature orchard trees, and possibly other trees in the BSA.
Western red bat[b] *(Lasiurus blossevillii)*	–/SSC/–	Occurs throughout much of California at lower elevations. Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley.	Present	Could roost in oak woodland, mature orchard trees, and possibly other trees in the BSA.
Townsend's big-eared bat *(Corynorhinus townsendii townsendii)*	–/SSC/–	Widespread throughout California, from low desert to mid-elevation montane habitats. Roosts in caves, tunnels, mines, buildings, and other cave-like spaces. Will night roost in more open settings, including under bridges.	Present	Could roost in buildings in the BSA

Common and (Scientific Name)	Legal Status (Federal/State/ Other)[a]	General Habitat Description	Habitat Present/ Absent	Rationale
Western mastiff bat *(Eumops perotis californicus)*	–/SSC/–	Occurs along the western Sierra primarily at low to mid-elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border. Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but also may use crevices in trees, buildings, and tunnels.	Present	Could roost in buildings in the BSA or in tree crevices, if present.
North American porcupine *Erethizon dorsatum*	–/–/–	Occurs in forests in the Sierra Nevada, Cascade, Coast, and Transverse Ranges Found in coniferous forest and mixed woodlands. Den in hollow trees or rocky areas.	Absent	Conifer forest and other substantial woodland habitats not present in the BSA.

[a] Status explanations:

Federal

– = no listing.

State

– = no listing.
C = candidate for listing under the California Endangered Species.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.

[b] Species was not in the CNDDB search results or on the USFWS list but was included in the table because of the presence of suitable habitat in the BSA.

Migratory Birds

Several non-special-status migratory birds could nest on the ground or in shrubs or trees in and adjacent to the BSA. These generally common species are locally and regionally abundant. The breeding season for most birds is generally from February 1 to August 31. In addition, swallows and black phoebes (*Sayornis nigricans*) could nest on the Oak Knob Draw bridge structure. The occupied nests and eggs of migratory birds are protected by federal and state laws, including the MBTA and CFGC

The habitat-based field survey was not conducted during the breeding season for most birds and a focused survey for nest structures was not conducted. The concrete bridge structure over Oak Knob Draw was examined for swallow nests during the December 2015 field survey and no nests were observed.

2.3.4.3 Environmental Consequences

Western Spadefoot

Direct Impacts

Construction of the proposed project would result in direct permanent and temporary impacts on suitable aquatic (vernal pools/vernal swales and seasonal wetlands/seasonal swales) and upland habitat (grassland and oak woodland) for western spadefoot (Figure 2-8). Table 2.3.4-2 summarizes estimated permanent and temporary impacts, by alternative, on vernal pools/vernal swales, seasonal wetlands/seasonal swales, grassland, and oak woodland that provide suitable habitat for western spadefoot.

Table 2.3.4-2. Impacts on Western Spadefoot Habitat by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Habitat Type	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Aquatic						
Vernal pool/ vernal swale*	3.88	0	5.57	0.71	4.76	0.11
Seasonal wetland/ Seasonal swale*	0.45	0	0.54	0	0.54	0
Total impact	4.33	0	6.11	0.71	5.30	0.11
Upland						
Non-native annual grassland	41.54	4.11	44.47	4.70	43.61	4.59
Oak woodland	0.30	0.06	0.40	0.16	0.31	0.06
Total impact	41.84	4.17	44.87	4.86	43.92	4.65

* For purposes of calculating impacts on western spadefoot habitat, and based on the sensitive nature of vernal/seasonal pool/swale hydrology, the entire pool/swale was considered affected even if only a portion of the pool/swale would be permanently affected.

Permanent impacts on aquatic habitat would result from placement of fill in pools, modifications of pool bottoms or margins, and/or changes in the topography of the surrounding area that likely would change the hydrology of the pool/swale. Upland habitat would be permanently impacted if converted to paved surface. Temporary impacts on upland habitat would consist of construction impacts that temporarily remove or disturb habitat, but the habitat is restored to pre-project conditions within 1 year of disturbance. Construction activities could also result in the injury to or mortality of western spadefoot from being struck or crushed by construction equipment or becoming entrapped in open trenches or estivation burrows. One project BMP, fencing sensitive resource areas (described in Chapter 1), would minimize the potential for direct effects on western spadefoot.

Indirect Impacts

There would be no indirect impacts on western spadefoot from the proposed project.

Significance Conclusion

Permanent and temporary impacts on habitat and potential injury or mortality of individuals from construction of the wider roadway are potentially significant impacts on western spadefoot. Implementation of Mitigation Measures BIO-3 and BIO-9 (described below under section *2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures*) would reduce potential impacts on western spadefoot to less than significant.

Western Pond Turtle

Direct Impacts

Construction of the proposed project would result in direct permanent and temporary impacts on suitable aquatic (seasonal emergent wetland) habitat for western pond turtle (Figure2-8). Table 2.3.4-3 summarizes estimated permanent and temporary impacts, by alternative, on seasonal emergent wetland that provides suitable aquatic habitat for western pond turtle. Depending on the alternative, permanent and temporary impacts on aquatic habitat for western pond turtle could result when construction occurs in the irrigation ditch west of SR 70, in the pond east of SR 70 and south of the entrance to Oroville Wildlife Area and north of Power Hill House Road, and in Oak Knob Draw. Because turtles are unlikely to use the grassland and ruderal areas immediately adjacent to the highway, permanent impacts on these areas were not considered permanent loss of upland habitat for western pond turtle.

Table 2.3.4-3. Impacts on Western Pond Turtle Aquatic Habitat by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Habitat Type	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Seasonal emergent wetland	0.54	0.19	0.76	0.06	0.74	0.05

In-water work within the irrigation ditch and Oak Knob Draw could cause entrapment of western pond turtles, resulting in injury to or mortality of turtles. Construction noise and/or activity could disturb turtles or cause them to avoid the area. BMPs that would be implemented as part of the proposed project (see Chapter 1) that would minimize the potential for direct effects on western pond turtle are fencing sensitive resource areas and restoring temporarily disturbed grassland.

Indirect Impacts

There would be no indirect impacts on western pond turtle from the proposed project.

Significance Conclusion

Potential injury or mortality from construction activities is a potentially significant impact on western pond turtle. Implementation of Mitigation Measure BIO-7 (described below under section *2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures*), would reduce this impact to less than significant.

Northern Harrier, White-tailed Kite, Western Burrowing Owl, Loggerhead Shrike, and Tricolored Blackbird

Direct Impacts

Construction noise and activities during the nesting season (February 1 to September 30) could result in the loss or disturbance of a northern harrier, white-tailed kite, western burrowing owl, or loggerhead shrike nests, if present in or near the project area. Because the blackberry patch along Oak Knob Draw is unlikely to support nesting tricolored blackbirds, impacts on nesting habitat and nesting tricolored blackbirds are not anticipated to occur. Removal of trees with active nests and project-related activities that result in take of white-tailed kite are not permitted under the CFGC (because white-tailed kite is a fully protected species). Construction noise and activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment of these special-status birds, which would violate the CFGC and MBTA. BMPs that would be implemented as part of the proposed project (see Chapter 1) that would minimize the potential for direct effects on special-status birds are fencing sensitive resource areas, minimizing the disturbance of woody vegetation, removing vegetation during the nonbreeding season for nesting birds, conducting preconstruction nesting birds surveys, and restoring temporarily disturbed grassland. Additionally, removing vegetation during the nonbreeding season for nesting birds and conducting preconstruction nesting bird surveys would avoid potential violations of the CFGC and MBTA.

Indirect Impacts

There would be no indirect impacts on northern harrier, white-tailed kite, western burrowing owl, loggerhead shrike, or tricolored blackbird from the proposed project.

Significance Conclusion

With implementation of project BMPs, there would no impact on northern harrier, white-tailed kite, western burrowing owl, loggerhead shrike, or tricolored blackbird.

Special-Status Bats, and Roosting Colonies of Non-Special-Status Bats

Direct Impacts

Focused surveys for special-status bats were not conducted; however, the concrete bridge structure over Oak Knob Draw was examined for roosting habitat during the December 2015 survey. The concrete structure does not contain any expansion joints or other crevices that provide suitable day roosting habitat for bats. The bridge could be used for night roosting; however, no sign of bat use was observed on or under the structure. There would be no direct impacts on special-status bats or colonies of non-special-status bats.

Indirect Impacts

There would be no indirect impacts on special-status bats or colonies of non-special-status bats from the proposed project.

Significance Conclusion

There would be no impact on special-status bats or colonies of non-special-status bats.

Migratory Birds

Direct Impacts

Tree removal and trimming is expected to occur for construction of the proposed project. Clearing of grassland and ruderal vegetation, where ground nesting birds may be present, may also occur. Additionally, the Oak Knob Draw bridge structure that provides suitable nesting substrate for swallows and black phoebes would be removed and replaced. Construction activities would occur during the nesting season of migratory birds (generally February 1 through August 31) and could result in the possible injury to or mortality of nesting birds. Removal or destruction of nests or construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment, which would violate the CFGC and MBTA. BMPs that would be implemented as part of the proposed project (see Chapter 1) that would minimize the potential for direct effects on nesting birds are fencing sensitive resource areas, minimizing the disturbance of woody vegetation, removing vegetation during the nonbreeding season for nesting birds, conducting preconstruction nesting birds surveys, and restoring temporarily disturbed grassland. Additionally, removing vegetation during the nonbreeding season for nesting birds and conducting preconstruction nesting bird surveys would avoid potential violations of the CFGC and MBTA.

Indirect Impacts

There would be no indirect impacts on migratory birds from the proposed project.

Significance Conclusion

With implementation of BMPs, there would no impact on migratory birds.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

Western Spadefoot

Avoidance and Minimization Measures

With implementation of one project BMP, fencing sensitive resource areas (described in Chapter 1), the potential for direct effects on western spadefoot would be minimized and no avoidance and minimization measures are required.

Compensatory Mitigation

As required by Mitigation Measure BIO-3, temporarily disturbed wetlands will be returned to pre-construction condition following construction. Permanent impacts on habitat for western spadefoot may be partially or fully mitigated through the implementation of Mitigation Measure BIO-3 for wetlands or Mitigation Measure BIO-9 for vernal pool branchiopods.

Mitigation Measure BIO-3: Compensate for Loss of Wetlands

Please see Section 2.3.2.4 for the description of this measure.

Mitigation Measure BIO-9: Compensate for Loss of Vernal Pool Branchiopod Habitat

Please see Section 2.3.5.4 for the description of this measure.

Western Pond Turtle

Avoidance and Minimization Measures

To avoid and minimize impacts on western pond turtle, the following measure will be implemented.

Mitigation Measure BIO-7: Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work

To avoid potential injury or mortality of western pond turtles, Caltrans will retain a qualified wildlife biologist to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. The biologist will survey the aquatic habitat and adjacent marsh and grassland habitat within the construction area. If in-water work does not start immediately, the biologist will return to the construction site immediately prior to the start of in-water work to conduct another preconstruction survey. The biologist will remain on site until initial in-water work is complete. If a turtle becomes trapped during initial in-water work, a biologist who is CDFW-approved to capture and relocate turtles during construction of the project, will relocate the individual to suitable aquatic habitat upstream or downstream of the construction area. For the remainder of construction, the CDFW-approved biologist will remain on-call in case a turtle is discovered. The construction crew will be instructed to notify the crew foreman who will contact the biologist if a turtle is found trapped within the construction area. Work in the area where the turtle is trapped will stop until the biologist arrives and removes and relocates the turtle. The biologist will report their activities to Caltrans and the CDFW within 1 day of relocating any turtle.

Compensatory Mitigation

Although there would be some permanent loss of suitable aquatic habitat for western pond turtle from construction of the project, the affected habitats would still provide aquatic habitat, as only a portion of the habitat would be filled. As such, compensation for the loss of western pond turtle aquatic habitat is not proposed. However, mitigation for the permanent loss of seasonal emergent wetland, as required by Mitigation Measure BIO-3 may compensate for permanent loss of western pond turtle aquatic habitat, if the mitigation occurs near suitable open water western pond turtle aquatic habitat. As required by Mitigation Measure BIO-3, temporarily disturbed wetlands will be returned to pre-construction condition following construction. As such, temporarily disturbed wetlands that provide suitable aquatic habitat for western pond turtle would be restored.

Mitigation Measure BIO-3: Compensate for Loss of Wetlands

Please see Section 2.3.2.4 for the description of this measure.

2.3.4.5 References Cited

California Department of Fish and Wildlife. 2015. California Natural Diversity Database. RareFind 5. (December 1, 2015 update). Sacramento, CA. Search of 7.5-minute Bangor, Biggs, Gridley, Honcut, Loma Rica, Oroville, Oroville Dam, Palermo, and Shippee quadrangles. Sacramento CA. Accessed: December 4, 2015.

———. 2017a. California Natural Diversity Database. RareFind 5. (November 3, 2017 update). Sacramento, CA. Search of 7.5-minute Bangor, Biggs, Gridley, Honcut, Loma Rica, Oroville, Oroville Dam, Palermo, and Shippee quadrangles. Sacramento CA. Accessed: November 7, 2017.

U.S. Fish and Wildlife Service. 2015. List of threatened and endangered species that may occur in and/or may be affected by the State Route 70 Corridor Improvements Project. December 4. Obtained from the IPaC website (http://ecos.fws.gov/ipac).

———. 2018. List of threatened and endangered species that may occur in and/or may be affected by the State Route 70 Corridor Improvements Project. May 4. Obtained from the IPaC website (http://ecos.fws.gov/ipac).

2.3.5 Threatened and Endangered Species

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

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

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Local Regulations

The project area is located with the plan areas of the Butte County Regional Conservation Plan (BRCP) and the Yuba-Sutter Natural Communities Conservation Plan/Habitat Conservation Plan (Yuba-Sutter NCCP/HCP).

Butte Regional Conservation Plan

The BRCP is a program to provide regional conservation strategies for covered special-status species and sensitive natural communities in the lowland and foothill region of Butte County plan area, which includes the BSA for this project. The BRCP is intended to provide mitigation and a coordinated fee system to streamline the process of obtaining ESA permits. BCAG and Caltrans are included in the list of applicants under the BRCP for Section 10 of FESA and Section 2835 of the California Natural Community Conservation Planning Act permits. The proposed project is included as a covered activity in the BRCP and is located within the Sierra Foothills and Southern Orchards Conservation Acquisition Zones (CAZs) of the plan area.

The public review period for the formal public draft BRCP and Environmental Impact Statement/EIR documents closed on June 8, 2016. Comments received during the public review period will be addressed in the next version of the BRCP. Because the length of time until the BRCP is finalized is not known, BCAG and Caltrans will not request ESA coverage of the proposed project under the BRCP.

Yuba-Sutter Natural Communities Conservation Plan/Habitat Conservation Plan

Yuba and Sutter counties, as well as the cities of Yuba City, Live Oak, and Wheatland are in the process of developing the Yuba-Sutter NCCP/HCP for projects located in western Yuba County and Sutter County (Yuba County et al. 2011). Although Caltrans is not requesting authorization through the plan, it is a participant in the planning process. Any improvements to SR 70 in Yuba County would connect with the planned improvements in Butte County, south of the proposed project, and could affect natural communities and covered species included in the NCCP/HCP. Cumulative impact analyses of the southern SR 70 segments, south of the proposed project to the Butte County limits, might include consideration of the Yuba-Sutter NCCP/HCP.

2.3.5.2 Affected Environment

Methods

As described in Section 2.3.1, the BSA was defined as the project footprint.

Prefield research and a survey for habitat for special-status plants and animals in the BSA were described under Methods in Sections 2.3.3 and 2.3.4, respectively. In addition to the survey of the BSA, ICF wildlife biologists Jennifer Haire and Aundrea Asbell conducted a focused survey to assess the potential direct and indirect effects of the proposed project on suitable vernal pool branchiopod habitat in and adjacent to the BSA on January 25, 2017. The biologists walked and drove along SR 70 where areas of suitable habitat are present and evaluated how the existing topography and/or changes resulting from the project may impact suitable branchiopod habitat. They visually inspected inundated habitat along the areas that they walked for presence of vernal pool branchiopods. The biologists noted existing conditions on field maps and took representative photographs of areas assessed.

Section 7 Consultation Status

A USFWS species list and updated species list were obtained from the IPaC website on December 4, 2015 and May 4, 2018, respectively (U.S. Fish and Wildlife Service 2015, 2018; Appendix E). Caltrans had two meetings with USFWS (on April 5 and May 2, 2018) to review the project and discuss

potential direct and indirect effects on vernal pools and seasonal wetlands. A draft Biological Assessment has been prepared.

Threatened and Endangered Species

Plants

No special-status plants were observed during the 2015 or 2018 botanical surveys, which were conducted during the reported identification periods of the 13 special-status plant species determined to have the potential to occur in the BSA. However, access was not available to survey several wetland areas west of SR 70 and north of Palermo Road that support habitat for three threatened and endangered plants (Butte County meadowfoam, slender Orcutt grass, and Greene's tuctoria). In addition, drought conditions over several years might have limited the extent of annual species during the survey year. Due to these limitations on observation of special-status plants, it is presumed that these species could be present in the BSA. Additional surveys will be conducted when access permission has been acquired.

The three federal or stated listed threatened or endangered plant species that have the potential to occur in the BSA and be affected by the proposed project are discussed below.

Butte County Meadowfoam

Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*) is federally listed as endangered. This species range is entirely within a narrow, 28-mile long strip from northwestern to central Butte County and includes approximately 21 known extant populations (U.S. Fish and Wildlife Service 2008). The nearest known occurrence to the BSA is approximately 6.6 miles northwest of the BSA (California Department of Fish and Wildlife 2017). Butte County meadowfoam occurs within areas of mima mound topography and grows in the deepest parts of vernal swales and on the edges of vernal pools. The meadowfoam blooms between February and April, produces nutlets in March and April, and dies back by early May (U.S. Fish and Wildlife Service 2008). Threats to this species include habitat loss from urban development and subsequent habitat degradation from changes in hydrology, introduction of invasive plants, and use of pesticides and herbicides (U.S. Fish and Wildlife Service 2008).

Slender Orcutt Grass

Slender Orcutt grass (*Orcuttia tenuis*) is federally listed as threatened and state listed as endangered. This species range includes disjunct occurrences from the Modoc Plateau in Siskiyou County, west to Lake County, and south through the Central Valley to Sacramento County and includes approximately 86 populations (U.S. Fish and Wildlife Service 2009). The nearest known occurrence is adjacent to the BSA north of Palermo Road on the east side of SR 70 (California Department of Fish and Wildlife 2017). The parcel where the occurrence of slender Orcutt grass is recorded was not surveyed due to access restrictions, and, therefore, the continuing presence of these plants could not be verified. This species was not observed in nearby surveyed habitat. Slender Orcutt grass is an annual plant that might have been dormant in 2015 due to drought conditions over several years, although the slender Orcutt grass was observed in bloom on August 6, 2015, at a site approximately 36 miles northwest of the BSA (Schlising pers. comm.). Because the habitat for slender Orcutt grass is intact in the BSA and the habitat could not be thoroughly surveyed, it is presumed to be present in the BSA.

Slender Orcutt grass typically grows in large and/or deep vernal pools, although it has also been found in seasonally wet creek terraces, stock ponds, and borrow pits (U.S. Fish and Wildlife Service 2008). This species blooms between May and September, and more rarely until October. The largest threat to slender Orcutt grass is land use conversion and urban development (U.S. Fish and Wildlife Service 2009).

Greene's Tuctoria

Greene's tuctoria (*Tuctoria greenei*) is federally listed as endangered and state listed as rare. This species distribution is scattered along the eastern Central Valley and foothills, from Shasta County in the north to Merced County in the south, and includes approximately 21 known extant areas of occurrence (U.S. Fish and Wildlife Service 2007c). The nearest known occurrence of Greene's tuctoria is approximately 7 miles northwest of the BSA (California Department of Fish and Wildlife 2017). This species typically grows on the margins of deeper vernal pools. Greene's tuctoria blooms between May and July, and rarely until September. Threats to this species include conversion of agricultural lands, intensive grazing, competition from invasive plants, and habitat degradation from nearby development (U.S. Fish and Wildlife Service 2007c).

Animals

Federal or stated listed threatened or endangered animal species that have the potential to occur in the BSA and be affected by the proposed project are listed and discussed below.

- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- Swainson's hawk

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp is federally listed as threatened. The species is found in southern Oregon and in California, in approximately 32 populations scattered from Shasta County in the north through the Central Valley to the southern border of Tulare County, and along the central Coast Range from northern Solano County to San Benito County. Four disjunct populations occur in San Luis Obispo, Santa Barbara, and Riverside Counties (Eriksen and Belk 1999:92, 125; U.S. Fish and Wildlife Service 2007a:17).

Vernal pool fairy shrimp commonly inhabit vernal pools or vernal pool-like habitats, typically in grassland landscapes. Most commonly, vernal pool fairy shrimp are found in vernal pools or vernal swales, in unplowed grasslands (Eng et al. 1990:257). The chemical composition of the habitat and temperature variations resulting from pools filling at different times and distribution of pools along altitudinal and longitudinal gradients are the most important factors in determining the distribution of different species fairy shrimp (including vernal pool fairy shrimp), or their appearance from year to year (Eng et al. 1990:273; U.S. Fish and Wildlife Service 2007a:5). Vernal pool fairy shrimp sometimes occur in other wetlands that provide habitat characteristics similar to those of vernal pools; these other wetlands include alkaline rain pools, rock outcrop pools, and some disturbed and constructed sites, including tire ruts, ditches, and puddles (59 FR 48136–48153, September 16, 1994; Eriksen and Belk 1999:93; U.S. Fish and Wildlife Service 2007a: 24, 58). Occupied habitats range in size from 6-square-foot puddles to pools exceeding 24 acres (Eriksen and Belk 1999:93).

Vernal pool fairy shrimp is not found in riverine, marine, or other permanent waters (U.S. Fish and Wildlife Service 2007a:4). Suitable pools must stay inundated long enough for the shrimp to complete their life cycle.

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

Vernal pool tadpole shrimp occur in a wide variety of seasonal habitats including vernal pools, ponded clay flats, alkaline pools, ephemeral stock tanks, and roadside ditches. Habitats where vernal pool tadpole shrimp have been observed range in size from small (less than 25 square feet), clear, vegetated vernal pools to highly turbid alkali scald pools to large (more than 100 acres) winter lakes (Helm 1998:134–138; Rogers 2001:1002–1005). These pools and other ephemeral wetlands must dry out and be inundated again for the vernal pool tadpole shrimp cysts to hatch. This species has not been reported in pools that contain high concentrations of sodium salts, but may occur in pools with high concentrations of calcium salts (Helm 1998:134–138; Rogers 2001:1002–1005).

Vernal pool fairy shrimp and vernal pool tadpole shrimp are collectively referred to as vernal pool branchiopods in this document.

No vernal pool branchiopod surveys were conducted to collect information for the proposed project. However, ICF biologists observed vernal pool tadpole shrimp in three vernal pools in the BSA during a survey to assess potential impacts on vernal pool branchiopod habitat on January 25, 2017. (Figure 2-7) Additionally, Gallaway biologists conducted surveys for vernal pool branchiopods for the Porter Ranch Project in 2009 and the Rio d'Oro Project in 2008, which overlap with portions of the proposed project. Vernal pool fairy shrimp and vernal pool tadpole shrimp were found in several locations along the east side of SR 70 between Cox Lane and Walker Lane at the south end of the proposed project in 2009 (Porter Ranch area) and between Palermo Road and Pacific Heights Road in the northern portion of the project in 2008 (Rio d'Oro area) (Figure 2-7). Vernal pools/vernal swales and seasonal wetlands/seasonal swales provide suitable habitat for vernal pool branchiopods.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is federally listed as threatened. The presumed historical range and current range of valley elderberry longhorn beetle extend from Tehama County south to Fresno County through California's Central Valley and associated foothills from about the 3,000-foot contour on the east and the watershed of the Central Valley on the west (79 FR 55881-55884; U.S. Fish and Wildlife Service 1999:1). Valley elderberry longhorn beetle is dependent on its host plant, elderberry, which is a common component of riparian corridors and adjacent upland areas in the Central Valley (Barr 1991:5).

Valley elderberry longhorn beetle has four stages of life: egg, larva, pupa, and adult. Females deposit eggs on or adjacent to the host elderberry. Egg production varies; females have been observed to lay between 16 and 180 eggs. Eggs hatch within a few days of being deposited. Larvae emerge and bore into the wood of the host plant, creating a long feeding gallery in the pith of the elderberry stem. The larvae feed on the pith of the plant for 1 to 2 years. When a larva is ready to pupate, it chews an exit hole to the outside of the stem and then plugs it with frass. The larva then retreats into the feeding

gallery and constructs a pupal chamber from wood and frass. The larvae metamorphose between December and April; the pupal stage lasts about a month. The adult remains in the chamber for several weeks after metamorphosis and then emerges from the chamber through the exit hole. Adults emerge between mid-March and mid-June, the flowering season of the plant. Adults feed on elderberry leaves and mate within the elderberry canopy (Talley et al. 2006:7-9).

Three elderberry shrubs were observed near the northern terminus of the project in an open field west of SR 70 (Figure 2-7, Sheet 17). No other elderberry shrubs were observed in or adjacent to the BSA. Surveys for valley elderberry longhorn beetle exit holes, stem counts, and stem diameter measurements were not conducted because the shrubs will be avoided (see discussion below). There are two records for valley elderberry longhorn beetle within 5 miles of the BSA (California Department of Fish and Wildlife 2017a).

Swainson's Hawk

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

Focused surveys for Swainson's hawk were not conducted. Two records exist for Swainson's hawk within 5 miles of the BSA (California Department of Fish and Wildlife 2017a). The closest record is for a nest from 2010 that is 0.8 mile east of the BSA. The second record is for a nest from 2012 that is 1 mile west of the BSA (California Department of Fish and Wildlife 2015a). Swainson's hawks could nest in the oak woodland or individual trees in the BSA and could forage in grassland, ruderal, and agricultural areas throughout the BSA.

2.3.5.3 Environmental Consequences

Butte County Meadowfoam, Slender Orcutt Grass, and Greene's Tuctoria

Direct Impacts

Special-status plants were not observed within the BSA during appropriately timed botanical surveys in parcels for which access was available, including vernal pool/vernal swale habitat on the east side of SR 70 in the southern portion of the BSA. However, it was determined that special-status plants associated with vernal pools/vernal swales could occur in the BSA, based on the documented presence of Ahart's dwarf rush and slender Orcutt grass in the BSA north of Palermo Road and the presence of unsurveyed vernal pool/vernal swale habitat on the west side of SR 70 north of Palermo Road. Annual grassland and oak woodland in this same part of the BSA could not be accessed to conduct surveys. These areas provide suitable habitat for special-status plants, including round-leaved filaree, recurved larkspur, Butte County fritillary, and adobe-lily.

For purposes of this impact analysis, vernal pool/vernal swale, annual grassland, and oak woodland in the BSA are presumed to be occupied by special-status plants. Under the proposed project, direct temporary and permanent impacts would occur in the areas that have not been graded and support undisturbed habitat. Accordingly, there could be direct impacts on recurved larkspur, Ahart's dwarf rush, slender Orcutt grass, and other special-status plants with suitable habitat in vernal pool/vernal swale, annual grassland, and oak woodland communities.

Impacts on special-status plant habitat would occur under all three proposed build alternatives. Table 2.3.5-1 summarizes the potential impacts on vernal pool/vernal swale and oak woodland by build alternative. Because the extent of occupied habitat likely is much less than this total amount, the acreages in the table represent a worst-case scenario. Preconstruction surveys of the selected project alternative would be implemented to identify the actual extent of special-status species impacts in vernal pool/vernal swale and oak woodland habitat.

Up to 49.2 acres of annual grassland in the BSA would be directly impacted by project construction, but the extent of annual grassland habitat likely to support special-status species would be much less than this total amount. Therefore, the assumption that all directly impacted annual grassland is occupied habitat for special-status plants would be greatly inflated, and the acreage was not included in the table below. Preconstruction surveys of the selected project alternative would be implemented to identify the actual extent of special-status species impacts in annual grassland. No federally listed plant species with potential to occur in the project area have habitat in non-wetland grassland habitat.

One project BMP, fencing sensitive resource areas (described in Chapter 1), would minimize the potential for direct effects on special-status plants. Impacts on special-status plants could potentially occur under all three proposed build alternatives.

Table 2.3.5-1. Potential Maximum Impacts on Special-Status Plant Habitat by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Habitat Type	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Vernal pool/ vernal swale	1.94	0.26	2.48	0.35	2.30	0.35
Oak woodland	0.30	0.06	0.40	0.16	0.31	0.06

Indirect Impacts

Additional indirect impacts caused by sedimentation or modification of hydrology could occur in portions of vernal pools/vernal swales that lie outside the project footprint but that are connected to the directly affected wetlands. Construction activities such as excavation, grading, paving, or stockpiling of soil could result in indirect effects on special-status plants in vernal pools/vernal swales by altering the suitability of nearby habitat. Runoff of sediment, gasoline, oil, or other contaminants could result in degradation of water quality within suitable habitat. Changes in hydrology also could reduce the suitability of habitat by altering the hydroperiod of vernal pools/vernal swales.

Significance Determination

Loss of state and federally list plants would be potentially significant. Implementation of Mitigation Measures BIO-2, BIO-5, and BIO-6 (described below under section *2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures*) would reduce the potential impacts to a less-than-significant level.

Assuming that Butte County meadowfoam and Greene's tuctoria are not found within the direct impact areas during the preconstruction surveys, or that they could be avoided if found, the FESA effects determination for any of the alternatives would be *the proposed project is not likely to adversely affect Butte County meadowfoam and Greene's tuctoria.*

For consultation with USFWS, it has been presumed that slender Orcutt grass occurs in and would be affected by the proposed action. Based on the analysis for consultation with USFWS, the FESA effects determination for any of the alternatives would be *the proposed project is likely to adversely affect slender Orcutt grass.*

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Direct Impacts

Construction of the proposed project would result in direct permanent and temporary impacts on vernal pools/vernal swales and seasonal wetlands/seasonal swales that provide suitable habitat for listed vernal pool branchiopods, including the burial or removal of resting cysts. Permanent impacts would result from placement of fill in pools, modifications of pool bottoms or margins, and/or changes in the topography of the surrounding area that likely would change the hydrology of the pool/swale. Temporary impacts from the proposed project consist of driving through pools when they are dry or other short-term disturbance that does not alter the pool/swale or its hydrology. All habitat impacted by the proposed project is assumed to be occupied by listed vernal pool branchiopods. One project BMP, fencing sensitive resource areas (described in Chapter 1), would minimize the potential for direct effects on vernal pool branchiopods.

Direct impacts on vernal pool branchiopod habitat would occur from all three proposed build alternatives (Figure 2-9). Table 2.3.5-2 summarizes the direct impacts on branchiopod habitat by build alternative.

Table 2.3.5-2. Direct Effects on Vernal Pool Branchiopod Habitat by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Habitat Type	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Vernal pool/ vernal swale*	3.88	0	5.57	0.71	4.76	0.11
Seasonal wetland/ seasonal swale*	0.45	0	0.54	0	0.54	0
Total impact	4.33	0	6.11	0.71	5.30	0.11

* For purposes of calculating impacts on vernal pool branchiopod habitat, and based on the sensitive nature of vernal/seasonal pool/swale hydrology, the entire pool/swale was considered affected even if only a portion of the pool/swale would be permanently affected.

Indirect Impacts

Potential indirect effects on vernal pool branchiopods that were considered were changes in hydrology and degradation of habitat from new or increased use of herbicides or pesticides and increased amounts of fuel, oil, and other contaminants. Degradation of habitat from increased human presence and introduction of exotic predators are indirect impacts that were considered but were dismissed as potentially impacting vernal pool branchiopods. In general, indirect effects were assumed to occur at pools that are outside of, but within 250 feet of, the project footprint.

Changes in Hydrology

Soil compaction and an increased amount of paved surface along SR 70 have the potential to modify the existing hydrologic regime of pools/swales within 250 feet of the construction limit. The increase in impermeable surface could cause a larger amount of water runoff to enter these habitats, and water could persist (pond) for a longer time (several days or possibly weeks), which might result in more favorable conditions for vernal pool branchiopods by extending the seasonal inundation period. However, it is unlikely that the increased amount of surface runoff would cause the habitats to become ponded year round, a condition that would be unsuitable for vernal pool branchiopods.

Degradation of Habitat

The proposed project may result in the use of herbicides closer to vernal pool branchiopod habitat when the highway is widened. Pesticides and herbicides can have a negative effect on vernal pool branchiopods through mortality or reduced fitness (U.S. Fish and Wildlife Service 1996). Herbicide use along the widened highway could result in chemicals entering pools that were previously not impacted by herbicide use along the existing highway. Additionally, the increase in impermeable surface after construction of the project has the potential to cause a larger amount of runoff to enter pools and swales within 250 of the construction limit, as discussed above under "Changes in Hydrology." The increased runoff could carry additional fuel, oil, and other contaminants into these pools and swales.

Indirect impacts on vernal pool branchiopod habitat would occur from all three proposed build alternatives (Figure 2-9). Table 2.3.5-3 summarizes the indirect impacts on branchiopod habitat by build alternative.

Table 2.3.5-3. Indirect Effects on Vernal Pool Branchiopod Habitat by Alternative

	Alternative 1	Alternative 2	Alternative 3
Habitat Type	Indirect (acres)	Indirect (acres)	Indirect (acres)
Vernal pool/vernal swale*	0.18	10.30	11.74
Seasonal wetland/seasonal swale*	2.51	4.69	4.69
Total impact	2.69	14.99	16.43

* Vernal pools/vernal swales and seasonal wetlands/seasonal swales were considered indirectly impacted if they were located within 250 feet of the project area.

Significance Determination

Permanent and temporary impacts on suitable or occupied habitat, potential removal or burial of resting cysts, and degradation of habitat for vernal pool branchiopods are potentially significant impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp. Implementation of Mitigation Measures BIO-2, BIO-8, and BIO-9 (described below under section *2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures*) would reduce potential impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp to less than significant.

For any of the alternatives, the FESA effects determination would be *the proposed project is likely to adversely affect vernal pool fairy shrimp and vernal pool tadpole shrimp*.

Valley Elderberry Longhorn Beetle

Direct Impacts

The boundaries of the proposed staging area where the elderberry shrubs are located were modified to avoid direct impacts on valley elderberry longhorn beetle. The proposed staging area boundary was modified such that it is 100 feet or more from the elderberry shrubs. Therefore, no direct impacts on valley elderberry longhorn beetle are anticipated. Should the boundary of the staging area change such that the staging area is within 100 feet of the shrubs, avoidance and minimization measures will be required. One project BMP, fencing sensitive resource areas (described in Chapter 1), would minimize the potential for direct effects on valley elderberry longhorn beetle.

Indirect Impacts

Because all project activities would be at least 100 feet from elderberry shrubs, no indirect effects on valley elderberry longhorn beetle are expected.

Significance Determination

Because impacts on elderberry shrubs would be avoided, the project would have no impact on valley elderberry longhorn beetle.

For any of the alternatives, the FESA effects determination would be *the proposed project would have no effect on valley elderberry longhorn beetle*.

Swainson's Hawk

Direct Impacts

Construction activities would occur during the Swainson's hawk nesting season (March through August) and could result in the disturbance of Swainson's hawk. BMPs that would be implemented as part of the proposed project (see Chapter 1) that would minimize the potential for direct effects on Swainson's hawk are fencing sensitive resource areas, removing vegetation during the nonbreeding season for nesting birds, and conducting preconstruction nesting birds surveys. Additionally, removing vegetation during the nonbreeding season for nesting birds and conducting preconstruction nesting bird surveys would avoid potential violations of the CFGC and MBTA.

Indirect Impacts

There would be no indirect impacts on Swainson's hawk.

Significance Determination

Removal of occupied nest trees would be a significant impact on Swainson's hawk. Implementation of BMPs and Mitigation Measure BIO-2would avoid potential impacts on Swainson's hawk and no further mitigation is required.

2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

Listed Plant Species

Avoidance and Minimization Measures

In addition to the water quality protections in the project SWPPP and the project BMP for fencing sensitive biological resources, Caltrans will implement Mitigation Measures BIO-2, BIO-5, and BIO-6 to minimize potential effects on special-status plants and identify special-status plants in or near project construction. Additional avoidance and minimization measures may be agreed upon during the future permitting phase.

Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees

Please see Section 2.3.3.4 for the description of this measure.

Mitigation Measure BIO-5: Conduct Floristic Surveys for Special-Status Plants during Appropriate Identification Periods and Implement Protective Measures as Feasible

Please see Section 2.3.3 for the description of this measure.

Compensatory Mitigation

Compensation for permanent direct effects on special-status plants will be mitigated by implementation of Mitigation Measure BIO-6. This compensation is subject to change during the permitting process.

Mitigation Measure BIO-6: Compensate for Permanent Impacts on Special-Status Plants

Please see Section 2.3.3 for the description of this measure.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Avoidance and Minimization Measures

To avoid and minimize impacts on vernal pool branchiopods, the following measures will be implemented.

Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees

Please see Section 2.3.3.4 for the description of this measure.

Mitigation Measure BIO-8: Avoid and Minimize Potential Effects on Vernal Pool Branchiopods

The following steps will be taken to avoid or minimize potential effects on vernal pool branchiopods.

- Ground disturbance within 250 feet of suitable habitat will be avoided during the rainy season (approximately October 15 through May 15).
- Partial fill of vernal pools/vernal swales and seasonal wetlands/seasonal swales (i.e., permanent impacts) will only occur when vernal pools/vernal swales and seasonal wetlands/seasonal swales are completely dry.
- If requested by USFWS, the top 3-4 inches of soil in pools that would be destroyed or completely filled would be removed and stored in the project area until ready for placement in vernal pool habitat to be restored. The topsoil will be kept covered with tarps or other appropriate material until restored pools are ready to be inoculated. Orange construction barrier fencing will be installed around the covered topsoil. The biological monitor will be onsite to monitor the removal of the topsoil and will check to make sure that the soil is properly covered during periodic monitoring visits to the project site. When restored pools are completed, the stored topsoil would be spread over the bottom of restored pools prior to the start of the winter rainy season.

Compensatory Mitigation

The following measure will be implemented to compensate for permanent and temporary effects of vernal pool branchiopod habitat.

Mitigation Measure BIO-9: Compensate for Loss of Vernal Pool Branchiopod Habitat

Compensatory mitigation for direct and indirect effects on habitat for vernal pool branchiopods will be mitigated through the purchase of mitigation credits at a USFWS-approved conservation bank. Habitat that is directly or indirectly impacted will be mitigated by preserving habitat at a 2:1 ratio (habitat preserved: habitat impacted) and creating habitat at a 1:1 ratio (habitat created: habitat impacted) at the USFWS-approved mitigation bank. Table 2.3.5-4 summarizes acreages of compensation required by alternative for direct and indirect effects on vernal pool branchiopod habitat.

Table 2.3.5-4. Compensation for Direct and Indirect Effects on Vernal Pool Branchiopod Habitat by Alternative

	Alternative 1		Alternative 2		Alternative 3	
Habitat Type	Preservation (acres)	Creation (acres)	Preservation (acres)	Creation (acres)	Preservation (acres)	Creation (acres)
Direct						
Vernal pool/ vernal swale	8.12	3.88	31.74	6.28	33.22	4.87
Seasonal wetland/ seasonal swale	5.92	0.45	10.46	0.54	10.46	0.54
Total compensation	14.04	4.33	42.20	6.82	43.68	5.41

Valley Elderberry Longhorn Beetle

Avoidance and Minimization Measures

Because impacts on elderberry shrubs would be avoided, no avoidance or minimization efforts are required.

Compensatory Mitigation

Because no impacts on valley elderberry longhorn beetle would occur from construction of the proposed project, no compensatory mitigation is required.

Swainson's Hawk

Avoidance and Minimization Measures

To avoid and minimize impacts on Swainson's hawk, the following measure will be implemented.

Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees

Please see Section 2.3.3.4 for the description of this measure.

Compensatory Mitigation

No compensatory mitigation is required.

2.3.5.5 References Cited

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2.3.6 Invasive Species

2.3.6.1 Regulatory Setting

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

2.3.6.2 Affected Environment

Methods

ICF botanists conducted botanical surveys in the BSA on April 16, 17, and 24; July 8; and August 3, 2015; and on April 24 and 27; and May 17, 2018. The botanists walked the accessible parts of the BSA and compiled lists of plant species observed. For the parts of the BSA that were not accessible, the botanists mapped the natural communities based on roadside observations. Appendix D includes a list of plant species observed in the BSA.

Invasive Plant Species in the BSA

Invasive plant species include species designated as federal noxious weeds by USDA, species listed by California Department of Food and Agriculture (CDFA), and invasive plants identified by the California Invasive Plant Council (Cal-IPC). Invasive plants displace native species, change ecosystem processes, alter plant community structure, and lower wildlife habitat quality (California Invasive Plant Council 2006:1). Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plants and their propagules. Table 2.3.6-1 lists the invasive plant species identified by CDFA and Cal-IPC that are known to occur in the BSA (California Department of Food and Agriculture 2017; California Invasive Plant Council 2017). No plant species designated as federal noxious weeds have been identified in the BSA (Natural Resources Conservation Service 2017). Most of the invasive plant species occur in annual grassland, along the SR 70 road shoulders, and in disturbed and graded areas.

Table 2.3.6-1. Invasive Plant Species Identified in the Biological Study Area

Species	CDFA	Cal-IPC
Barbed goat grass (*Aegilops triuncialis*)	B	High
Tree of heaven (*Ailanthus altissima*)	C	Moderate
Slender wild oat (*Avena barbata*)	–	Moderate
Wild oat (*Avena fatua*)	–	Moderate
Rattlesnake grass (*Briza maxima*)	–	Limited
Ripgut brome (*Bromus diandrus*)	–	Moderate
Soft chess (*Bromus hordeaceus*)	–	Limited
Red brome (*Bromus madritensis* ssp. *rubens*)	–	High
Italian thistle (*Carduus pycnocephalus*)	C	Moderate
Yellow star-thistle (*Centaurea solstitialis*)	C	High
Brass buttons (*Cotula coronopifolia*)	–	Limited
Bermuda grass (*Cynodon dactylon*)	C	Moderate
Hedgehog dogtail grass (*Cynosurus echinatus*)	–	Moderate
Medusahead (*Elymus caput-medusae*)	C	High
Red-stemmed filaree (*Erodium cicutarium*)	–	Limited
Red river gum (*Eucalyptus camaldulensis*)	–	Limited
Rattail fescue (*Festuca myuros*)	–	Moderate
Italian ryegrass (*Festuca perennis*)	–	Moderate
Cutleaf geranium (*Geranium dissectum*)	–	Limited
Mediterranean barley (*Hordeum marinum* var. *gussoneanum*)	–	Moderate
Foxtail barley (*Hordeum murinum* ssp. *leporinum*)	–	Moderate
Hyssop loosestrife (*Lythrum hyssopifolium*)	–	Moderate
California burclover (*Medicago polymorpha*)	–	Limited
Pennyroyal (*Mentha pulegium*)	–	Moderate
English plantain (*Plantago lanceolata*)	–	Limited
Rabbitsfoot grass (*Polypogon monspeliensis*)	–	Limited
Himalayan blackberry (*Rubus armeniacus*)	–	High
Curly dock (*Rumex crispus*)	–	Limited
Milk thistle (*Silybum marianum*)	–	Limited
Johnson grass (*Sorghum halepense*)	C	–
Hedge parsley (*Torilis arvensis*)	–	Moderate
Puncture vine (*Tribulis terrestris*)	C	–
Rose clover (*Trifolium hirtum*)	–	Moderate

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

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

B: Eradication, containment, control or other holding action at the discretion of the county agricultural commissioner.

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

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

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

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

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

2.3.6.3 Environmental Consequences

The proposed project would create additional disturbed areas for a temporary period. Areas where temporary disturbance occurs would be more susceptible to colonization or spread by invasive plants. The revegetation and erosion control included in the project BMP to avoid and minimize the spread of invasive plant species during project construction (described in Chapter 1) will not use any species listed as invasive, in compliance with the Executive Order on Invasive Species, EO 13112, and guidance from the Federal Highway Administration (FHWA) and will consist of only native seed indigenous to the area.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the project BMP for avoiding and minimizing the spread of invasive plant species during project construction will ensure that effects from the spread of invasive plants in and adjacent to the designated work area are minimized. No avoidance, minimization or mitigation measures are required.

2.3.6.5 References Cited

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121°36'40"W
121°36'30"W
121°36'20"W
39°23'10"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 1 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Orchard (8.16 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

CNDDB Occurrences

- vernal pool tadpole shrimp

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
39°23'30"N
39°23'20"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 2 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Oak Woodland (Planted) (0.33 Acre)
- Orchard (8.16 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

CNDDB Occurrences

- vernal pool tadpole shrimp

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°23'50"N
39°23'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 3 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Orchard (8.16 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

CNDDB Occurrences

- vernal pool tadpole shrimp

0 50 100 200
Feet

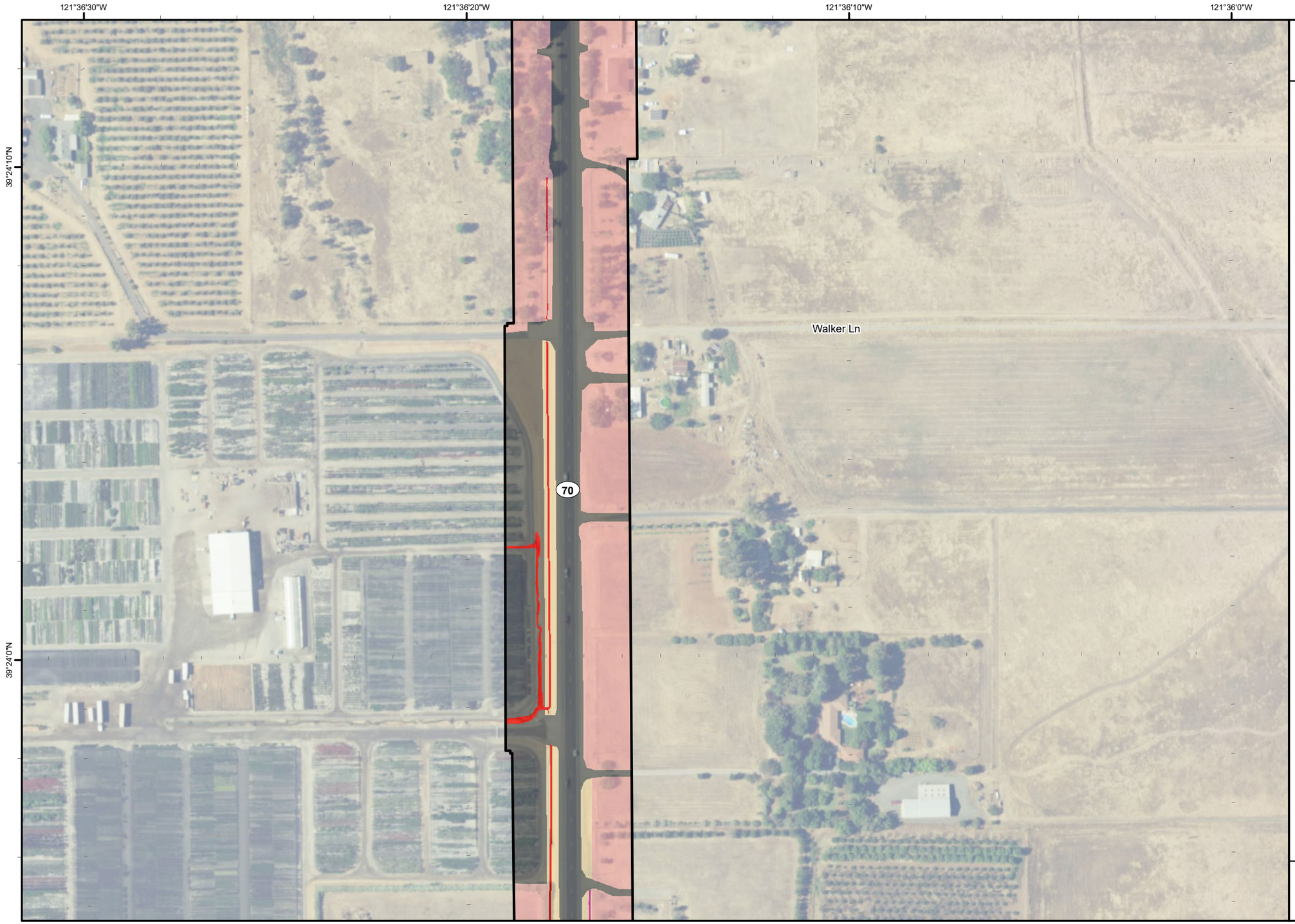
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCITRDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EABio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 4 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°24'30"N
39°24'20"N
Little Ranch Rd
70
Julie Ann Ct

SR 70 Corridor Improvements Project
July 2018
Sheet 5 of 17

Legend

- Study Area
- Agriculture (12.29 Acres)
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)

0 50 100 200
Feet
1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°24'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 6 of 17

Legend

- Study Area
- Agriculture (12.29 Acres)
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)

0 50 100 200
Feet

1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°25'0"N
39°24'50"N
70
Power House Hill Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 7 of 17

Legend

- Study Area
- Agriculture (12.29 Acres)
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Seasonal Emergent Wetland (0.96 Acre)

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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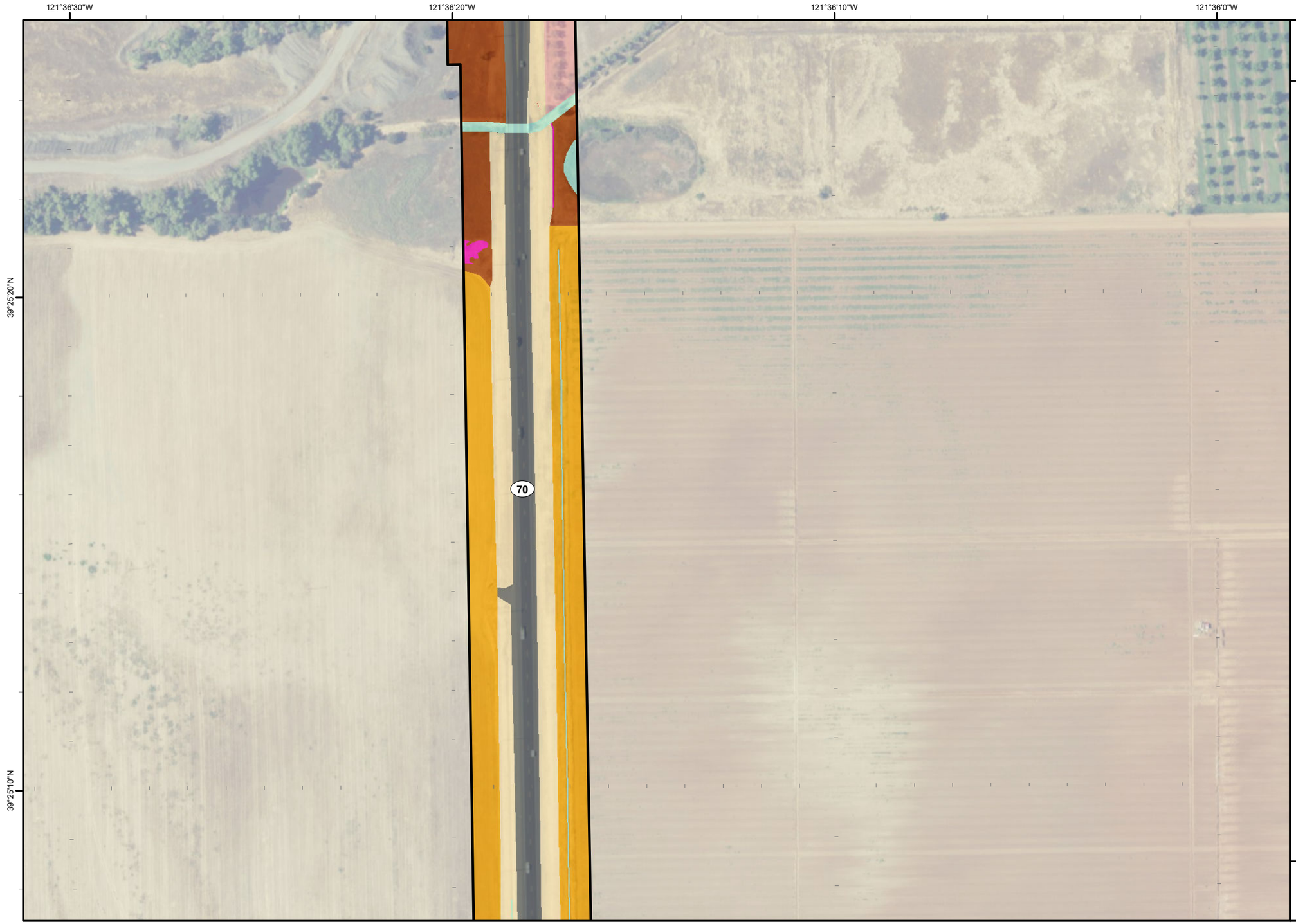
Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 8 of 17

Legend

- Study Area
- Agriculture (12.29 Acres)
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Ruderal (6.05 Acres)
- Seasonal Emergent Wetland (0.96 Acre)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCS\RDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°25'40"N
39°25'30"N
Oakwood Ln
70

SR 70 Corridor Improvements Project
July 2018
Sheet 9 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Oak Woodland (2.21 Acres)
- Ruderal (6.05 Acres)

0 50 100 200
Feet
1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: W:\DOCTR\SSIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdoc\IS_EA\Bio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°26'0"N
39°25'50"N
Welsh Rd
Palermo Rd
Maton Dr
70
Gold Run Ct
Bob Way
Grover Ln

SR 70 Corridor Improvements Project
July 2018
Sheet 10 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Orchard (8.16 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

0 50 100 200
Feet

1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: W:\DOCS\TRDS\GIS\1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_2017\1205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'10"W
121°36'0"W
121°35'50"W
39°26'30"N
39°26'20"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 12 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Landscaped (33.06 Acres)
- Nonnative Annual Grassland (111.2 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

CNDDB Occurrences

- Ahart's dwarf rush
- vernal pool tadpole shrimp

0 50 100 200
Feet

1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: W:\DOCH\RDSIGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdoc\IS_EA\Bio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°35'50"W
121°35'40"W
121°35'30"W
39°26'50"N
39°26'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 13 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Ephemeral Drainage (0.09 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

CNDDB Occurrences

- Ahart's dwarf rush
- vernal pool fairy shrimp

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCH\RDSGIS\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°35'40"W
121°35'30"W
121°35'20"W
39°27'10"N
39°27'0"N
70
Power House Hill Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 14 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ephemeral Drainage (0.09 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

0 50 100 200
Feet
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCIT\DOSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EA\Bio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°35'20"W
121°35'10"W
121°35'0"W
39°27'30"N
39°27'20"N
70
Power House Hill Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 15 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Oak Woodland (2.21 Acres)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Vernal Pool/Vernal Swale (4.39 Acres)

CNDDB Occurrences

- recurved larkspur

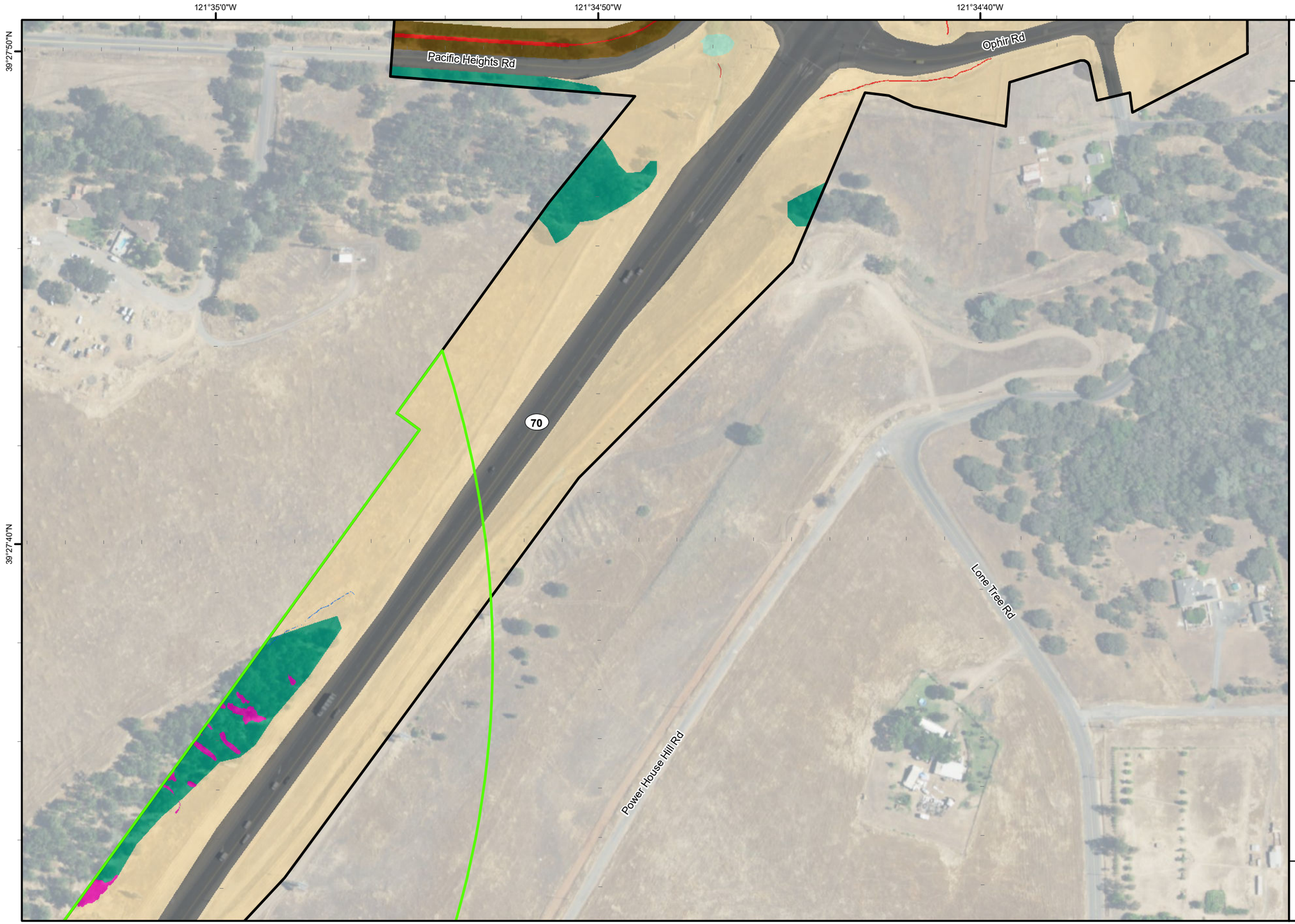
0 50 100 200
Feet
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDCIT\Data\S1\Projects_1\mark_thomas\07\09_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 16 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Ephemeral Drainage (0.09 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Oak Woodland (2.21 Acres)
- Riparian (1.49 Acres)
- Seasonal Emergent Wetland (0.96 Acre)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)

CNDDB Occurrences

- recurved larkspur

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCITRDSIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EABio_Resources_2017\1205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°34'50"W

121°34'40"W

121°34'30"W

39°28'0"N

70

Pacific Heights Rd

Feather River Blvd

Ophir Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 17 of 17

Legend

- Study Area
- Developed (57.87 Acres)
- Ditch (0.71 Acre)
- Nonnative Annual Grassland (111.2 Acres)
- Riparian (1.49 Acres)
- Ruderal (6.05 Acres)
- Seasonal Emergent Wetland (0.96 Acre)
- Seasonal Swale/Seasonal Wetland (1.11 Acres)
- Elderberry Locations

0 50 100 200
Feet

1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCITRDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EABio_Resources_20171205.mxd; Author: ; Date: 7/17/2018

Figure 2-7
Land Cover Types and Sensitive Biological Resources in the Biological Study Area

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
39°23'30"N
39°23'20"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 2 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- vernal pool tadpole shrimp

0 50 100 200
Feet
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCITRDSGIS\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocIS_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°23'50"N
39°23'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 3 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- vernal pool tadpole shrimp

0 50 100 200
Feet
N
1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDCCIFRDSTSIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mxdpdocs\IS_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°24'10"N
39°24'0"N
Walker Ln
70

SR 70 Corridor Improvements Project
July 2018
Sheet 4 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

0 50 100 200
Feet

1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCS\RDSGIS\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°24'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 6 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

0 50 100 200
Feet

1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°25'0"N
39°24'50"N
70
Power House Hill Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 7 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

0 50 100 200
Feet
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCITRDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocIS_EABio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°25'20"N
39°25'10"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 8 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

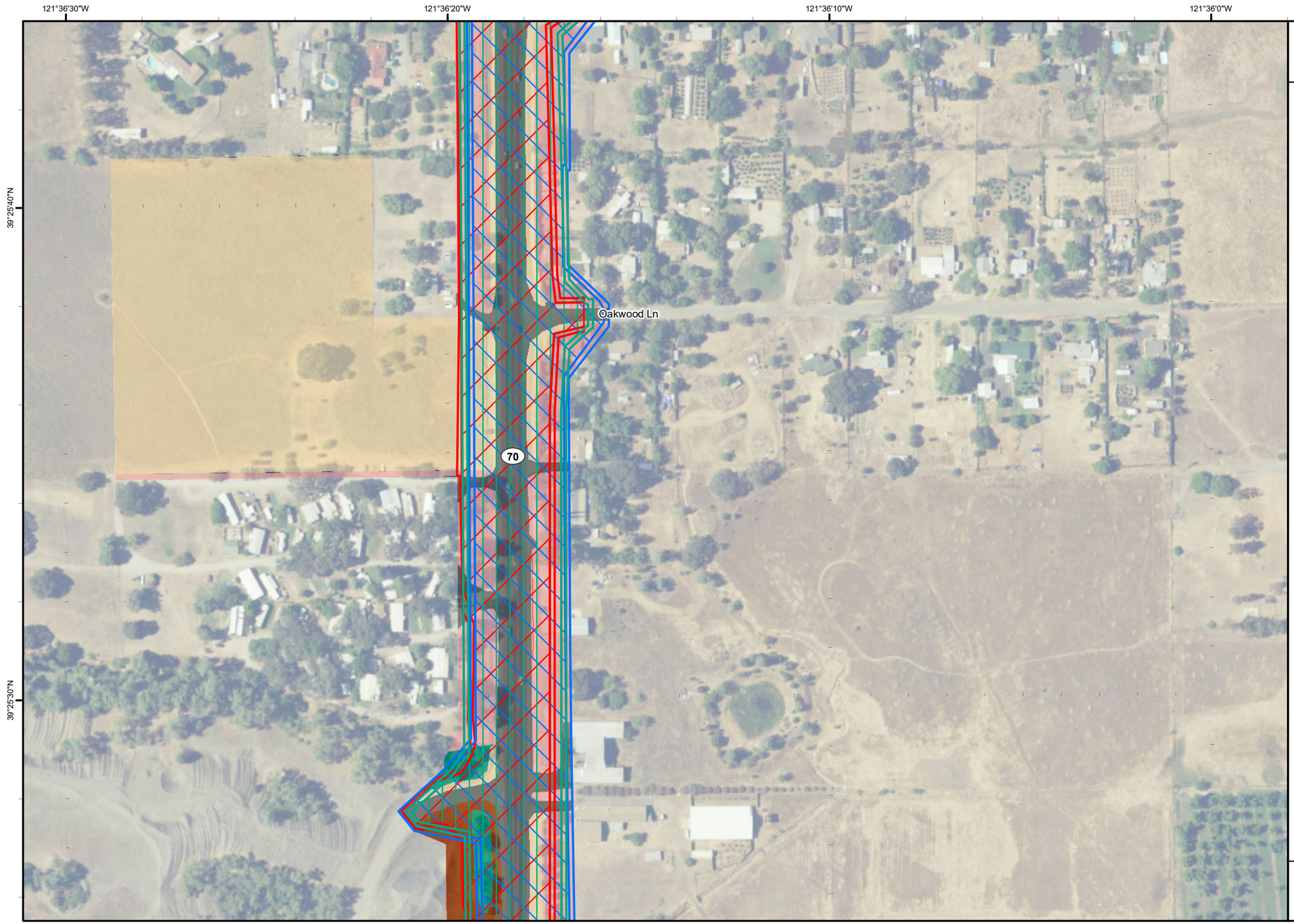
0 50 100 200
Feet
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOCH1\DSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocIS_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 9 of 17

Legend

- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

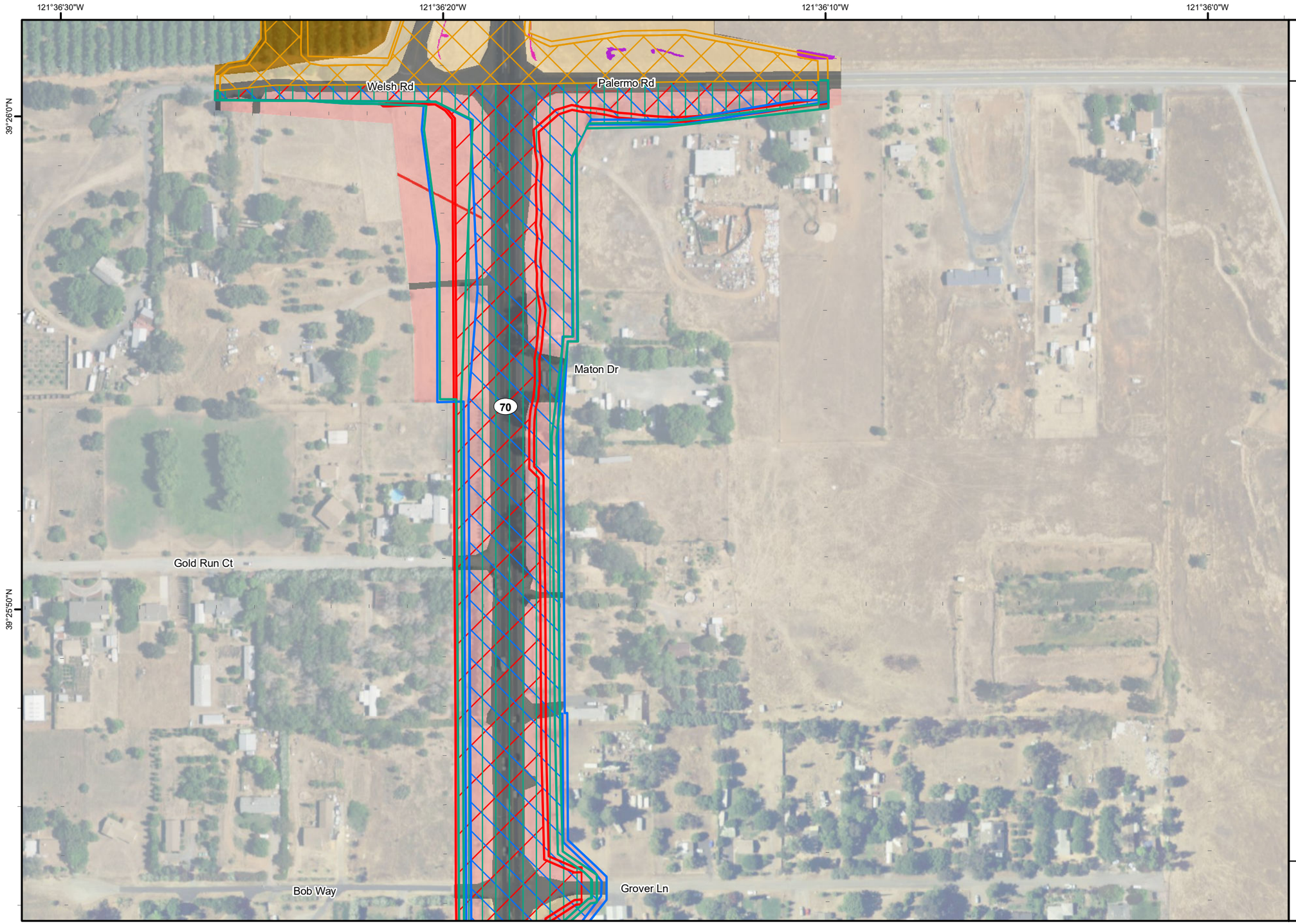

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°26'20"N
39°26'10"N
70
Pacific Heights Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 11 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- Ahart's dwarf rush
- slender Orcutt grass

0 50 100 200
Feet
1 inch = 200 feet
N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°36'10"W
121°36'0"W
121°35'50"W
39°26'30"N
39°26'20"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 12 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- Ahart's dwarf rush
- vernal pool tadpole shrimp

0 50 100 200
Feet

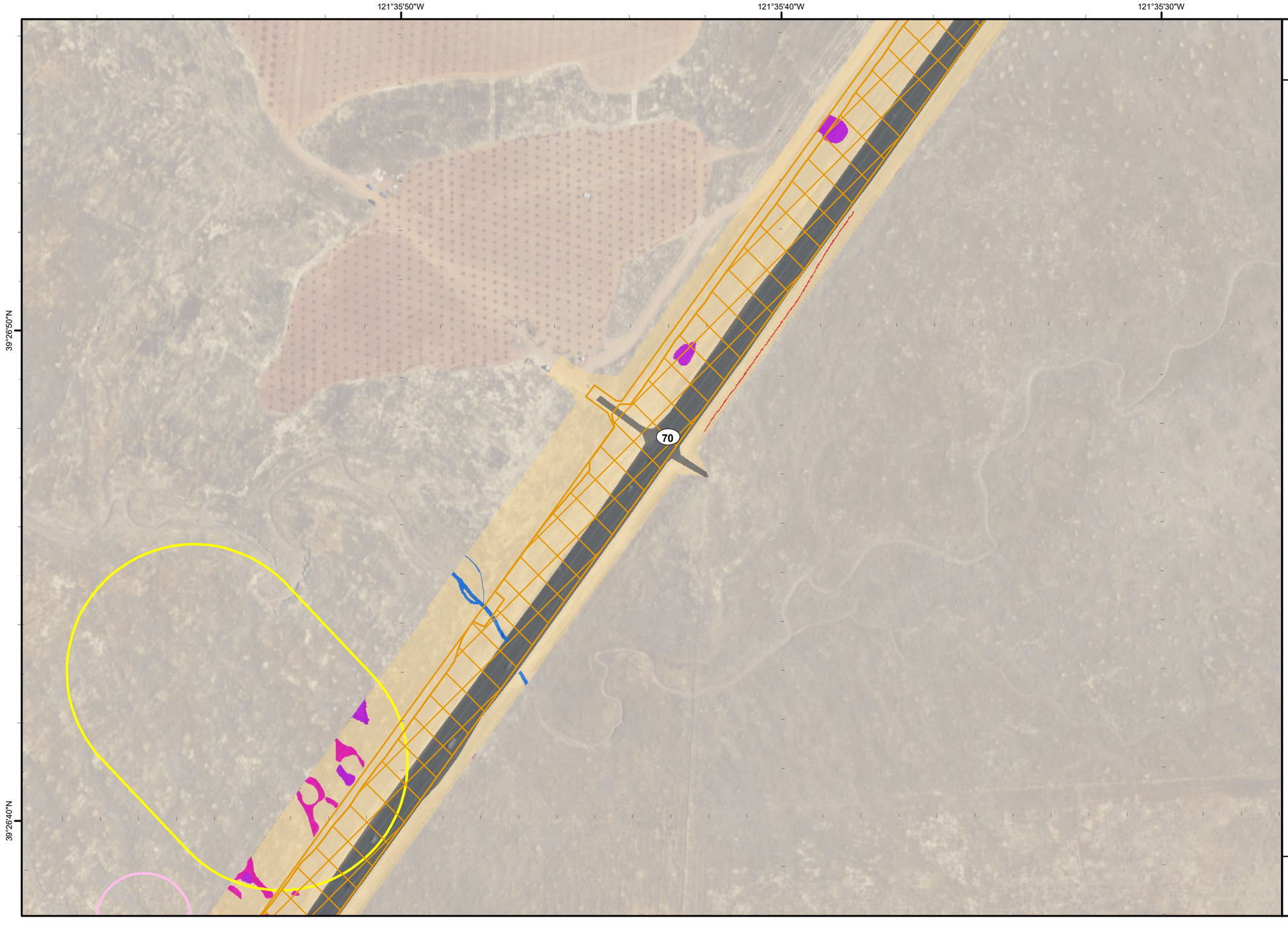
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDOC\RDSGIS\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 13 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- Ahart's dwarf rush
- vernal pool fairy shrimp

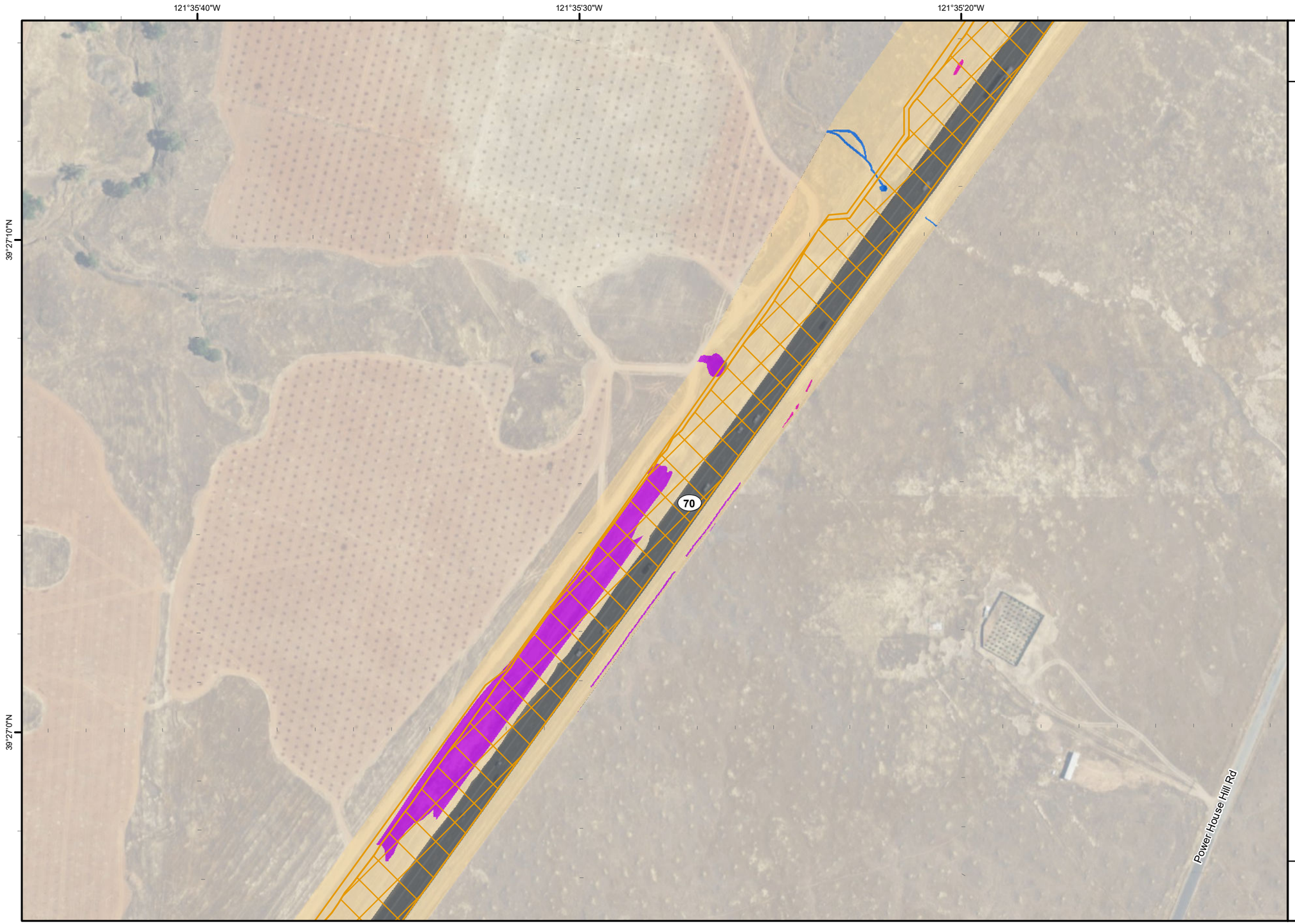
0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDC01\RDStds1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\S_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 14 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

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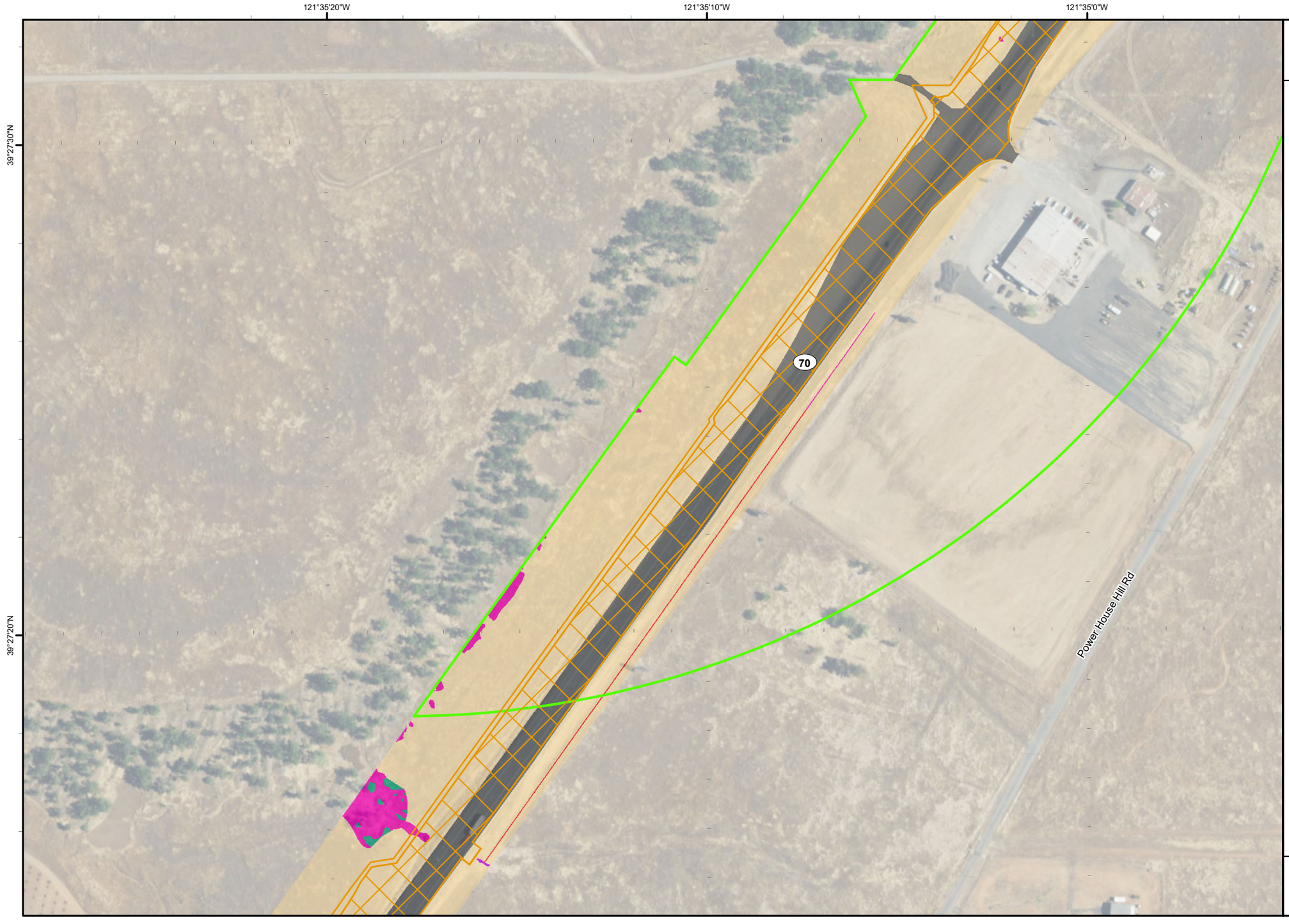
Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 15 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- recurved larkspur

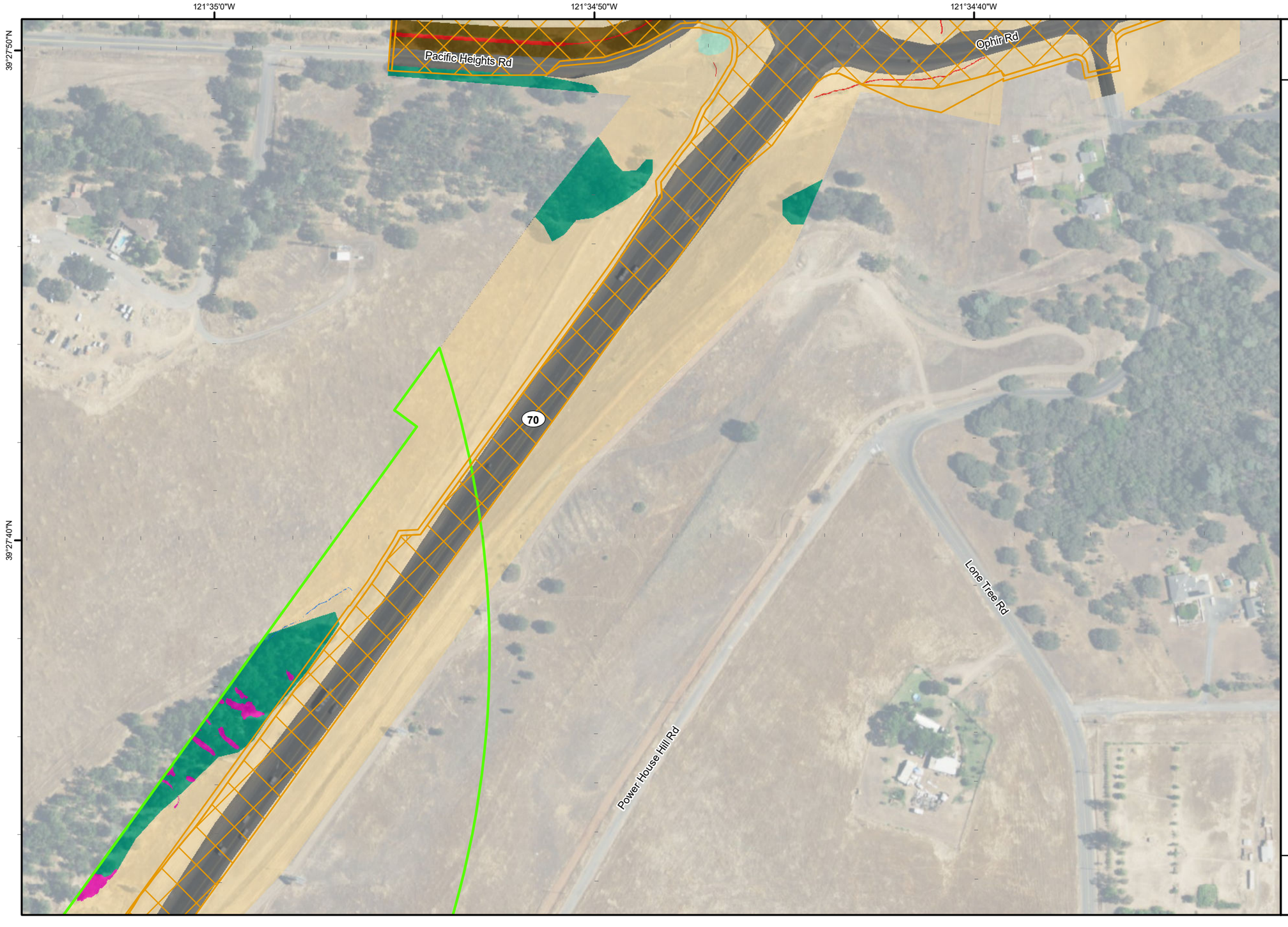
0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDCCH-RDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 16 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale

CNDDB Occurrences

- recurved larkspur

0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: \\PDC01\RDSGIS1\Projects_1\mark_thomas\00709_12_SR70_Widening\mapdocs\IS_EA\Bio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

121°34'50"W

121°34'40"W

121°34'30"W

39°28'0"N

70

Pacific Heights Rd

Feather River Blvd

Ophir Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 17 of 17

Legend

- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Agriculture
- Developed
- Ditch
- Ephemeral Drainage
- Landscaped
- Nonnative Annual Grassland
- Oak Woodland
- Oak Woodland (Planted)
- Orchard
- Riparian
- Ruderal
- Seasonal Emergent Wetland
- Seasonal Swale/Seasonal Wetland
- Vernal Pool/Vernal Swale
- Elderberry Locations

0 50 100 200
Feet

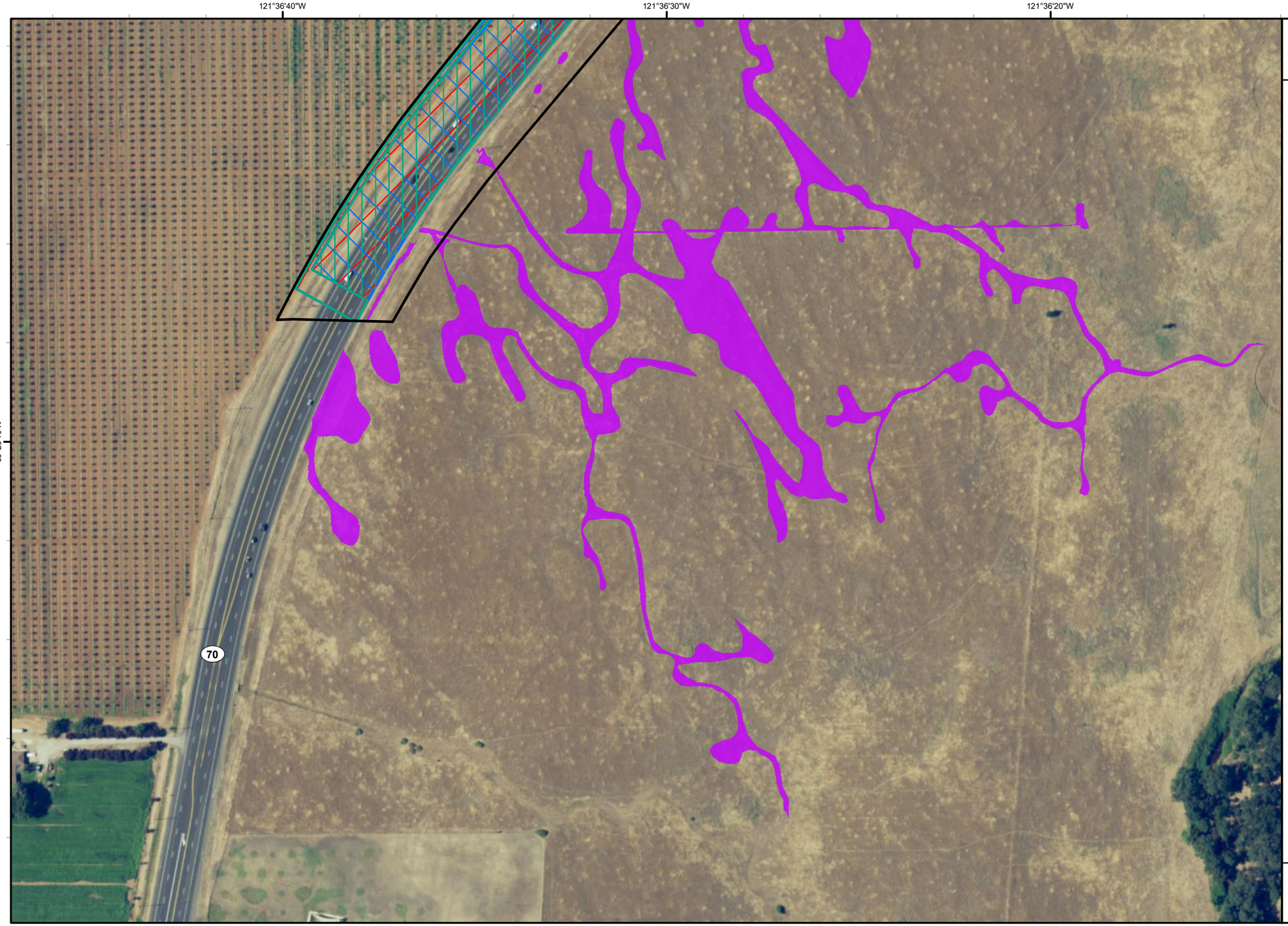
1 inch = 200 feet

N

Base Map Source: ICF, 2015
Imagery Source: NAIP 2016
Drawn By: A. Angier

Path: W:\DOCUM~1\dstsl1\Projects_1\mark_thomas\00709_12_SR70_Widening\mxd\docIIS_EABio_Resources_Impacts_20180308.mxd; Author: ; Date: 7/17/2018

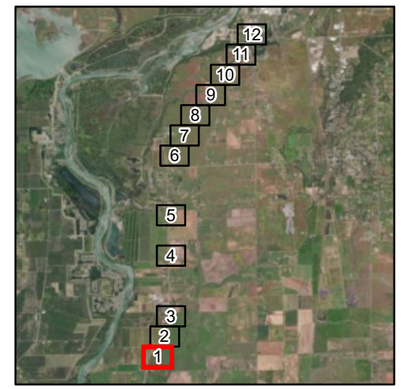
Figure 2-8
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 1 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



0 50 100 200
Feet

1 inch = 200 feet

Base Map Source: ICF, 2018
Imagery Source:NAIP 2016
Drawn By: A. Angier

Path: W:\DOCS1 RDS\cls1\Projects_1\mark_thomas\w0709_12_SR70_Widening\mapdocs\IS_EA\Fig06_Branchiopods_20180308.mxd; Author: ; Date: 7/18/2018

Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

121°36'30"W

121°36'20"W

121°36'10"W

39°23'30"N

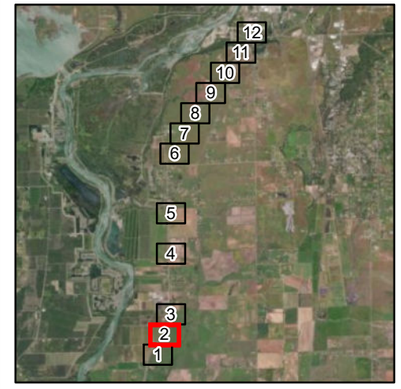
39°23'20"N

70

SR 70 Corridor Improvements Project
July 2018
Sheet 2 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

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Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

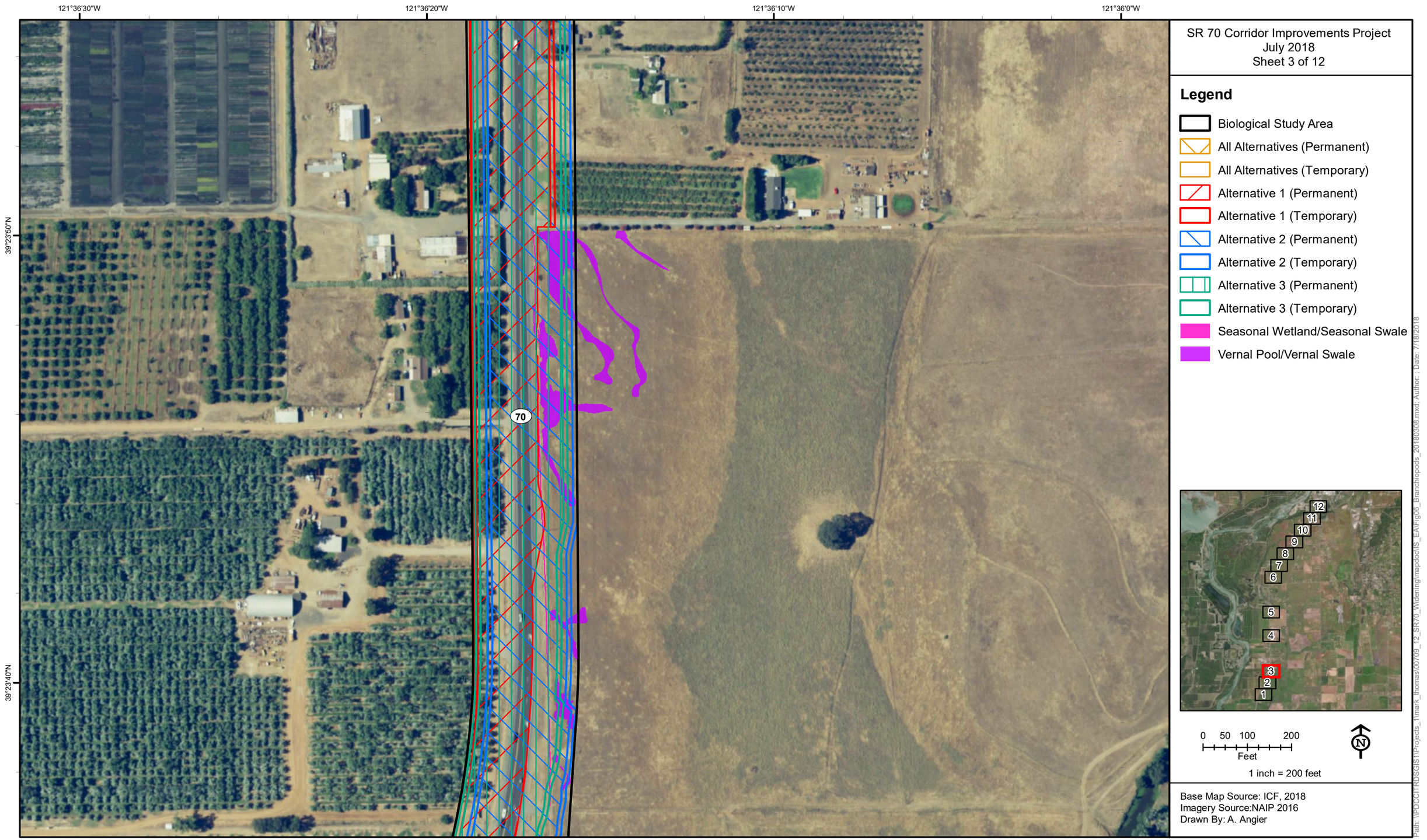


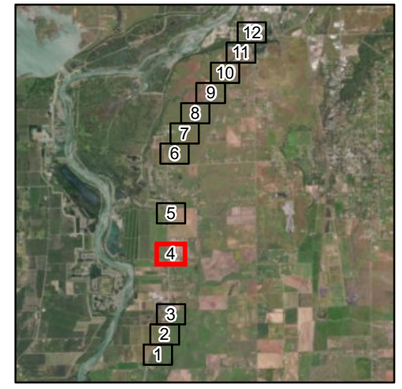
Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

121°36'30"W
121°36'20"W
121°36'10"W
121°36'0"W
39°24'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 4 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

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Imagery Source:NAIP 2016
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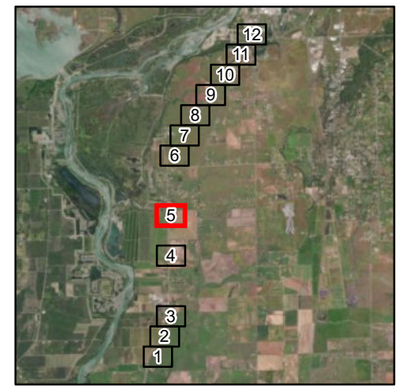
Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

SR 70 Corridor Improvements Project
July 2018
Sheet 5 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

1 inch = 200 feet

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Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

121°36'20"W

121°36'10"W

121°36'0"W

39°26'10"N

Pacific Heights Rd

70

SR 70 Corridor Improvements Project
July 2018
Sheet 6 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale

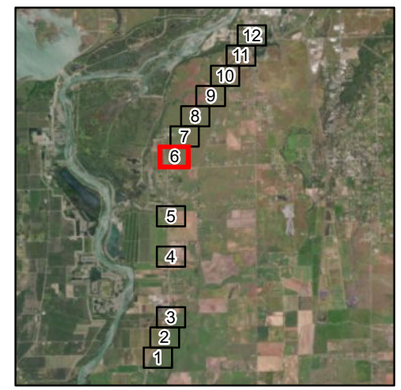

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Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

121°36'10"W
121°36'0"W
121°35'50"W
39°26'30"N
39°26'20"N
Dingerville Golf Course
70

SR 70 Corridor Improvements Project
July 2018
Sheet 7 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
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- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale

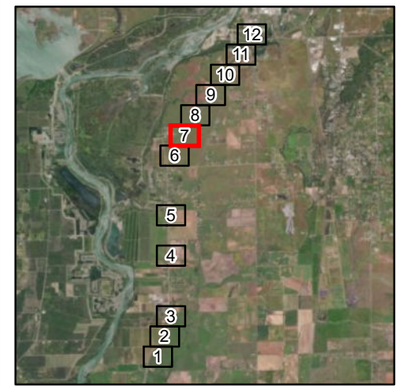

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Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

121°36'0"W
121°35'50"W
121°35'40"W
121°35'30"W
39°26'50"N
39°26'40"N
70

SR 70 Corridor Improvements Project
July 2018
Sheet 8 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
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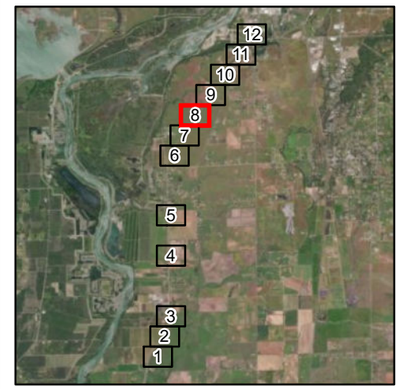
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

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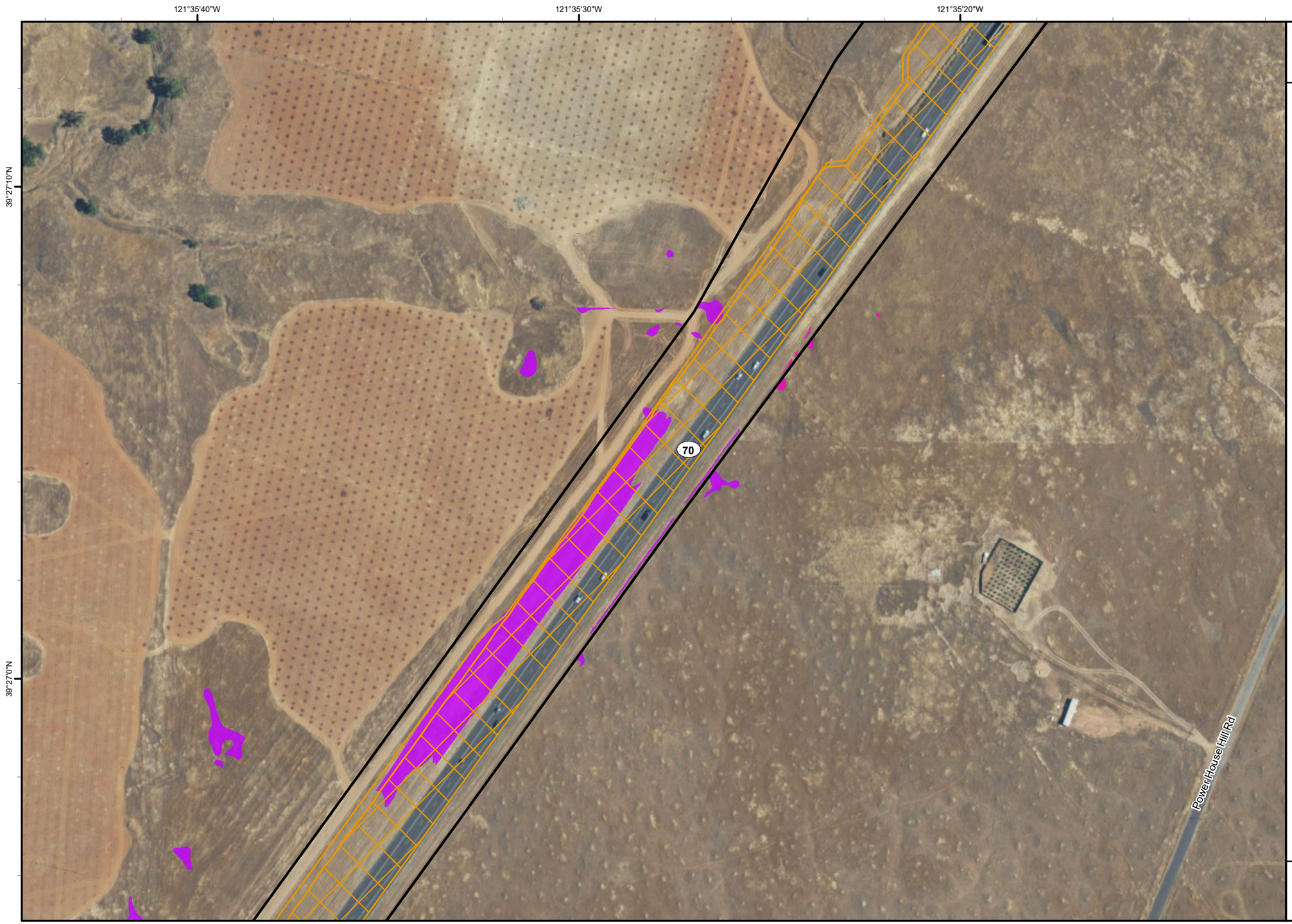
Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area



SR 70 Corridor Improvements Project
July 2018
Sheet 9 of 12

Legend

- Biological Study Area
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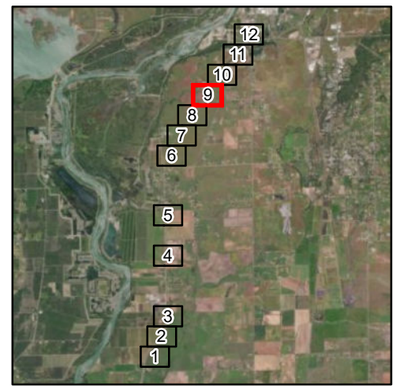
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

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Imagery Source:NAIP 2016
Drawn By: A. Angier

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Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

121°35'20"W
121°35'10"W
121°35'0"W
39°27'30"N
39°27'20"N
70
Power House Hill Rd

SR 70 Corridor Improvements Project
July 2018
Sheet 10 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
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- Alternative 3 (Temporary)
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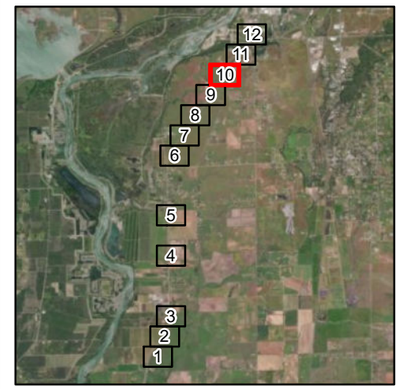
- Vernal Pool/Vernal Swale



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Feet

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Imagery Source:NAIP 2016
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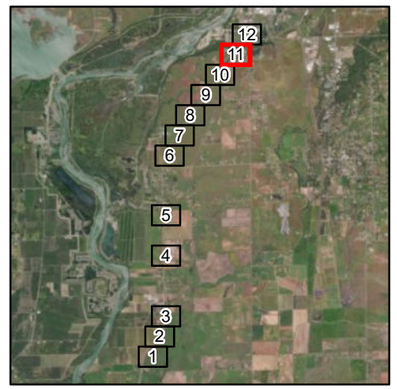
Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

SR 70 Corridor Improvements Project
July 2018
Sheet 11 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

1 inch = 200 feet

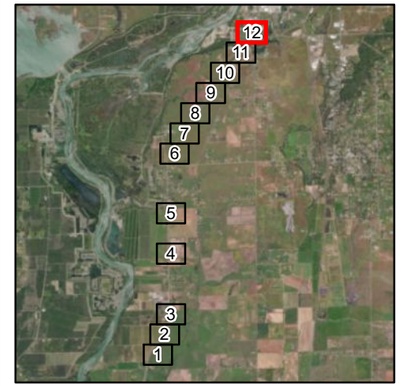
Base Map Source: ICF, 2018
Imagery Source:NAIP 2016
Drawn By: A. Angier

Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

SR 70 Corridor Improvements Project
July 2018
Sheet 12 of 12

Legend

- Biological Study Area
- All Alternatives (Permanent)
- All Alternatives (Temporary)
- Alternative 1 (Permanent)
- Alternative 1 (Temporary)
- Alternative 2 (Permanent)
- Alternative 2 (Temporary)
- Alternative 3 (Permanent)
- Alternative 3 (Temporary)
- Seasonal Wetland/Seasonal Swale
- Vernal Pool/Vernal Swale



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Feet

1 inch = 200 feet

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Figure 2-9
Direct Effects on Vernal Pool Branchiopod Habitat in the Biological Study Area

2.4 Climate Change (CEQA)

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.[1] In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest contributors of GHG emissions.[2] The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” "Greenhouse gas mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation" refers to planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

2.4.1.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management,

[1] https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014.

[2] https://www.arb.ca.gov/cc/inventory/data/data.htm.

project development and design, and operations and maintenance practices.[3] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."[4] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, 74 *Federal Register* 52117 (October 8, 2009): This federal EO set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. It instituted as policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, 80 Federal Register 15869 (March 2015): This EO reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes Executive Order 13514.

[3] https://www.fhwa.dot.gov/environment/sustainability/resilience/.

[4] https://www.sustainablehighways.dot.gov/overview.aspx.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts* v. *EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[5] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.[6]

NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth*, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

With the passage of several pieces of legislation, including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases (2002). This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

[5] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq.

[6] http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256 and https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse.

Executive Order (EO) S-3-05 (June 1, 2005). The goal of this EO is to reduce California's GHG emissions to (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below the year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB 32 in 2016.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006. AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-20-06 (October 18, 2006). This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007). This order sets forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions. This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection. This bill requires the ARB to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for its region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan. This bill requires the state's long-range transportation plan to meet California's climate change goals under AB 32.

Executive Order B-16-12 (March 2012). Orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015). Establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Finally, it

requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016. Codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

2.4.1.2 Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the *First Update to the Climate Change Scoping Plan* on May 22, 2014. ARB is moving forward with a discussion draft of an updated Scoping Plan that will reflect the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California.[7] ARB is responsible for maintaining and updating California's GHG Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 2.4-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMTCO2e.[8] The 2017 edition of the GHG emissions inventory (released June 2017) found total California emissions of 440.4 $MMTCO_2e$, showing progress towards meeting the AB 32 goals.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 $MMTCO_2e$ total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 $MMTCO_2e$.

[7] 2016 Edition of the GHG Emission Inventory Released (June 2016): https://www.arb.ca.gov/cc/inventory/data/data.htm.

[8] The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4).

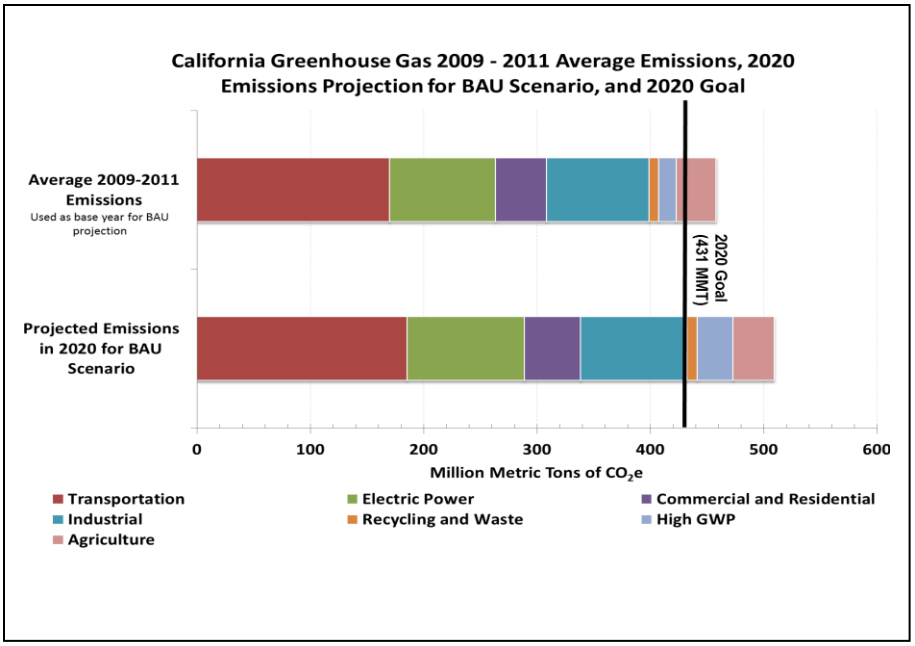


Figure 2.4-1. 2020 Business as Usual (BAU) Emissions Projection 2014 Edition

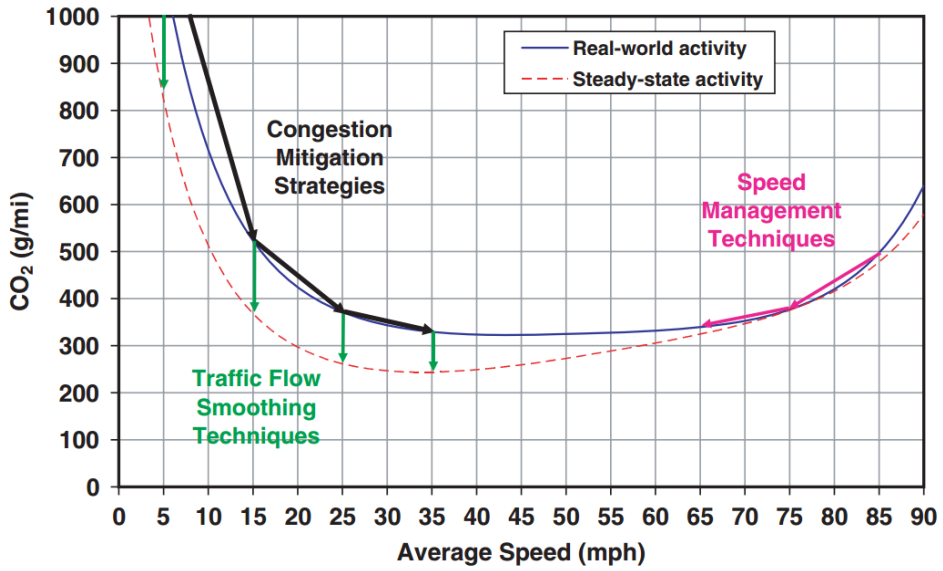
2.4.1.3 Project Analysis

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 contributions of all other sources of GHG.[9] 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 to make this determination is a difficult, if not impossible, task.

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential GHG emissions related to the proposed project.

[9] 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).

Operational Emissions



*Source: Matthew Barth and Kanok Boriboonsomsin, University of California, Riverside, May 2010 (*http://uctc.berkeley.edu/research/papers/846.pdf*).*

Figure 2.4-2. Possible Use of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity), (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective all four strategies should be pursued concurrently.

FHWA supports these strategies to lessen climate change impacts, which correlate with efforts that the state of California is undertaking to reduce GHG emissions from the transportation sector.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 2.4-2 above). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO_2, may be reduced.

Information presented in this section is based on the May 2016 *Air Quality Study Report* prepared for the proposed project (ICF 2016). From a traffic operations perspective, the three Build Alternatives differ only in terms of where the widening along State Route (SR) 70 would occur. Traffic volumes, speeds, and other operational conditions under the three alternatives are therefore identical. Accordingly, the operational impact assessment is based on a single set of traffic conditions, which is representative of all three Build Alternatives.

Tables 2.4-1 and 2.4-2 present construction year (2020) network performance metrics for the morning and evening peak periods, respectively, for the proposed project. As indicated in Tables 2.4-1 and 2.4-2, the Build Alternatives would improve overall network performance compared to No Build conditions under both morning and evening peak periods. As shown in the tables, total hours of vehicle delay and total vehicle hours of travel would decrease, indicating that the project-related

improvements would accommodate more traffic volumes more efficiently. The increased vehicle efficiency is reflected in the average travel speed, which would increase with implementation of the Build Alternatives by 7 miles per hour (mph) during the morning peak hour and 3 mph during the evening peak hour.

Table 2.4-1. Comparison of Overall Network Performance—Construction Year (2020) Morning Peak Period

			Change	
Measure of Effectiveness	No Build	Build	Relative	Percent
Total Vehicle Hours of Delay	51	21	-30	-59%
Total Stops	1,914	2,100	186	10%
Delay Per Vehicle in Project Study Area	32	13	-19	-59%
Vehicle Miles of Travel	7,274	7,182	-92	-1%
Vehicle Hours of Travel	294	226	-68	-23%
Network Average Travel Speed	25	32	7	28%

Source: Fehr & Peers 2015.

Table 2.4-2. Comparison of Overall Network Performance—Construction Year (2020) Evening Peak Period

			Change	
Measure of Effectiveness	No Build	Build	Relative	Percent
Total Vehicle Hours of Delay	43	23	-20	-47%
Total Stops	2,410	2,593	183	8%
Delay Per Vehicle in Project Study Area	20	11	-9	-45%
Vehicle Miles of Travel	9,851	9,735	-116	-1%
Vehicle Hours of Travel	339	301	-38	-11%
Network Average Travel Speed	29	32	3	10%

Source: Fehr & Peers 2015.

Tables 2.4-3 and 2.4-4 present design year (2040) network performance metrics. The same trends discussed above for construction year (2020) conditions are observed, although they are more pronounced, reflecting the full benefits of the proposed project. As shown in the tables, implementation of the Build Alternatives dramatically reduces vehicle delay and increases average travel speeds relative to the No Build condition. The performance metrics shown in Tables 2.4-3 and 2.4-4 indicate that implementation of the Build Alternatives would accommodate more traffic while improving overall network efficiency.

Table 2.4-3. Comparison of Overall Network Performance—Design Year (2040) Morning Peak Period

			Change	
Measure of Effectiveness	No Build	Build	Relative	Percent
Total Vehicle Hours of Delay	288	39	-249	-86%
Total Stops	2,764	3,094	330	12%
Delay Per Vehicle in Project Study Area	122	16	-106	-87%
Vehicle Miles of Travel	10,697	10,906	209	2%
Vehicle Hours of Travel	607	349	-258	-43%
Network Average Travel Speed	18	31	13	72%

Source: Fehr & Peers 2015.

Table 2.4-4. Comparison of Overall Network Performance—Design Year (2040) Evening Peak Period

			Change	
Measure of Effectiveness	No Build	Build	Relative	Percent
Total Vehicle Hours of Delay	919	53	-866	-94%
Total Stops	3,701	4,464	763	21%
Delay Per Vehicle in Project Study Area	269	16	-253	-94%
Vehicle Miles of Travel	16,012	16,319	307	2%
Vehicle Hours of Travel	1397	519	-878	-63%
Network Average Travel Speed	11	31	20	182%

Source: Fehr & Peers 2015.

The congestion and vehicle efficiency improvements are reflected in the operational modeling conducted for the Build Alternatives. Caltrans' CT-EMFAC model was used to estimate CO_2 emissions for existing (2014) and design year (2040) conditions and to evaluate potential emissions increases by the Build Alternatives. Table 2.4-5 summarizes the modeled emissions by scenario and compares emissions under the Build Alternatives to existing and no-build conditions. Emissions are presented with and without state mandates to reduce GHG emissions from on-road vehicles and transportation fuels.[10]

As shown in Table 2.4-5, implementation of the Build Alternatives would increase GHG emissions compared to existing conditions and the No Build Alternative in 2040. The increase in emissions over existing conditions is primarily due to growth in background vehicle miles traveled (VMT) between 2014 and 2040. The increase in emissions relative to the No Build Alternative is primarily due to efficiency improvements associated with the proposed project. The Build Alternatives would reduce vehicle delay and increase average travel speeds, resulting in a greater number of vehicles traveling between 60 and 65 mph, where emission rates are higher, when compared to the No Build

[10] Actions undertaken by the state will contribute to project-level GHG reductions. The state mandate analysis assumes implementation of Pavley and the Low Carbon Fuel Standard. Pavley will improve the efficiency of automobiles and light-duty trucks, whereas the Low Carbon Fuel Standard will reduce the carbon intensity of diesel and gasoline transportation fuels.

Alternative. Because emissions rates tend to increase with increasing speed above 50 mph, the faster travel speeds provided by the roadway widening result in a slight increase in GHG emissions relative to the No Build Alternative. Accordingly, GHG emissions in the project area are expected to increase as a result of background growth.

Currently, there are no federal or state standards set for CO_2 emissions; therefore, the estimated emissions shown in Table 2.4-5 are useful only for a comparison between the existing (2014) and design year (2040) conditions. The numbers are not necessarily an accurate reflection of what the true CO_2 emissions would be because CO_2 emissions depend on other factors that are not part of the model, such as the fuel mix,[11] the rate of acceleration, and the aerodynamics and efficiency of the vehicles.

The proposed project is listed in Butte County Association of Government's (BCAG's) financially constrained 2016 RTP/SCS. Projects included in the RTP/SCS are required to be consistent with the planning goals of SIPs adopted by local air quality management agencies. BCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted in 2016, projects a 6 and 7 percent reduction in per capita GHG emission from passenger vehicles relative to 2005 levels, by 2020 and 2035, respectively (Butte County Association of Governments 2016). The reduction in emission is attributed to the focus of the RTP/SCS, which is to create a more sustainable transportation system and land use development pattern. The plan encourages greater densities, more mixed land use, and better transit services to population centers. The RTP/SCS also heavily emphasizes bicycling and alternative modes of transportation as means of decreasing auto use and reducing traffic congestion. Altogether, the transportation improvements included in the RTP/SCS would result in a more efficient transit system, greater availability of public transit and other alternative modes of transportation, and a more efficient land use scenario, relative to business-as-usual conditions. The proposed project, while not a transit or multi-modal project, would support this outcome by providing congestion and efficiency improvements throughout the SR 70 project area and surrounding area.

BCAG is currently developing a commuter service from Butte County to Sacramento. The route would travel between Chico and downtown Sacramento on SR 70, with stops in Oroville and Marysville, in the AM and PM peak hours. The commuter bus would likely contribute to a reduction in GHG emissions by reducing the number of vehicles and VMT. This service would support the RTP/SCS.

[11] CT-EMFAC model emission rates are only for direct engine-out CO_2 emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components.

Table 2.4-5. Estimated Greenhouse Gas Emissions from Operation of the Proposed Project (metric tons per year)

		Emissions without Pavley and LCFS			Emissions with Pavley and LCFS		
Condition	Annual VMT[a]	CO_2	Other[b]	CO_2e	CO_2	Other[a]	CO_2e
2012 Existing	1,727,023,318	797,254	39,863	837,116	765,991	38,300	804,290
2040 No Build	2,658,682,312	1,237,170	61,859	1,299,029	855,681	42,784	898,465
2040 Build	2,658,567,617	1,238,467	61,923	1,300,391	856,525	42,826	899,351
Build Alternatives Analysis							
Comparison to Existing[c]	931,544,299	441,214	22,061	463,275	90,534	4,527	95,061
Comparison to 2040 No Build[d]	-114,695	1,297	65	1,362	844	42	886

Source: CT-EMFAC version 5.0.

CO_2 = carbon dioxide.
CO_2e = carbon dioxide equivalent.
LCFS = low carbon fuel standard.
VMT = vehicle miles traveled.

[a] Annual VMT values derived from Daily VMT values multiplied by 347, per ARB methodology (ARB 2008).

[b] Includes methane (CH_4), nitrous oxide (N_2O), and other trace GHGs emissions emitted by typical passenger vehicles (U.S. Environmental Protection Agency 2015).

[c] 2040 Build minus 2012 Existing.

[d] 2040 Build minus 2040 No Build.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will 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 better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM) (Version 7.1.5.1) was used to estimate CO_2 emissions from construction activities. The RCEM does not include emission factors for CH_4 or N_2O for off-road diesel equipment. Emissions of CH_4 and N_2O from diesel-powered equipment were determined by scaling the CO_2 emissions quantified by the ratio of CH_4/CO_2 (0.000056) and N_2O/CO_2 (0.000025).

Table 2.4-6 summarizes estimated GHG emissions generated by construction equipment. As discussed above, construction would occur over two 18-month segments. The emissions presented in Table 2.4-6 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 better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals

between maintenance and rehabilitation events. Measures to reduce construction emissions include maintenance of construction equipment and vehicles, limiting of construction vehicle idling time, and scheduling and routing of construction traffic to reduce engine emissions.

Table 2.4-6. GHG Emissions from Construction of the Proposed Project (metric tons per year)

	Diesel Equipment			Gasoline Vehicles		
Year	CO_2	CH_4	N_2O	CO_2	Other[a]	CO_2e
2018	905	<1	<1	141	7	1,060
2019	1,345	<1	<1	133	7	1,496
2020	772	<1	<1	140	7	926
2021	1,346	<1	<1	133	7	1,497
Total	4,368	<1	<1	546	29	4,979

CO_2 = carbon dioxide.
CH_4 = methane.
N_2O = nitrous oxide.
CO_2e = carbon dioxide equivalent.
[a] Includes CH_4, N_2O, and other trace GHGs emissions emitted by typical passenger vehicles (U.S. Environmental Protection Agency 2015).

2.4.1.4 CEQA Conclusion

Information presented in this section is based on the May 2016 *Air Quality Study Report* prepared for the proposed project (ICF 2016).

The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. As shown in Tables 2.4-6, construction of the proposed project would result in a short-term increase of 4,979 metric tons of carbon dioxide equivalent (CO_2e). Table 2.4-5 indicates that long-term operation of the Build Alternatives would increase CO_2 emissions relative to the existing and no-build conditions. The increase in emissions relative to the No Build Alternative is primarily due to efficiency improvements associated with the proposed project (e.g., reduction in vehicle delay, increase average travel speeds).

Based on currently available scientific data, however, project-level analysis of GHG emissions is limited. Although a GHG analysis is included for this project, numerous key GHG variables (e.g., fuel economy) that are likely to change dramatically during the design life of the proposed project would further reduce the projected CO_2e emissions. In addition, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the mission of greenhouse gases, as the project is consistent with BCAG's RTP/SCS and would therefore not conflict with SB 375.

2.4.1.5 Greenhouse Gas Reduction Strategies

Statewide Efforts

In an effort to further the vision of California's GHG reduction targets outlined an AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts). These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the

2030 GHG emissions target. These pillars are (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

Figure 2.4-3. The Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391(Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT per capita
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (2013).

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The following measures will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

- Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

- Landscaping reduces surface warming and, through photosynthesis, decreases CO_2. The project proposes to replace or relocate landscaping and/or trees affected by the project.
- The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost $60 to $70 each, but last 5 to 6 years, compared to the 1-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO_2 emissions. (Knoxville Business Journal 2008.)
- According to Caltrans' Standard Specifications, the contractor must comply with all local Butte County Air Quality Management District rules, ordinances, and regulations for air quality restrictions.

2.4.1.6 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—or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and 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. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the CEQ, the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011,[12] outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions."[13]

To further the DOT Policy Statement, in December 15, 2014, FHWA issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).[14] This directive established FHWA policy to strive to identify the risks of climate change and

[12] https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience.

[13] https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm.

[14] https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm.

extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs in order to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation's transportation systems.

FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.[15]

State Efforts

On November 14, 2008, then-Governor Arnold Schwarzenegger signed 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 and directed all state agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea-level rise. Sea-level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report)[16] was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided a synthesis of existing information on projected sea-level rise impacts to state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems; and a discussion of future research needs regarding sea-level rise.

In response to EO S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed *The California Climate Adaptation Strategy* (Dec 2009),[17] which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring state agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how state agencies are implementing EO B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

[15] https://www.fhwa.dot.gov/environment/sustainability/resilience/.

[16] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

[17] http://www.climatechange.ca.gov/adaptation/strategy/index.html.

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR." The March 2013 update[18] finalizes the SLR Guidance by incorporating findings of the National Academy's 2012 final Sea-Level Rise Assessment Report; the policy recommendations remain the same as those in the 2010 interim SLR Guidance. The guidance will be updated as necessary in the future to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of SLR.

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 actively engaged in in working towards identifying these risks throughout the state and will work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

The proposed project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

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[18] http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/.

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2.5 Cumulative Analysis

2.5.1.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts on resources that are posed by individual actions. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

The State CEQA Guidelines provide that cumulative context may be described through either the list approach or the plan/projections approach. The list approach involves identifying and listing the past, present, and reasonably foreseeable probable future projects that contribute to a given significant cumulative impact. The plan/projections approach relies on an adopted plan or reliable projection that describes the significant cumulative impact. This document relies on the plan approach, using cumulative impacts described in the *Butte County General Plan EIR* (Butte County 2010) as the basis for the cumulative impact analysis.

The cumulative impact analysis does not include any impacts that are not cumulatively significant. In addition, it does not include cumulative impacts to which the project will not contribute.

2.5.1.2 Cumulative Impact Analysis by Resource

Resource areas for which there is a significant cumulative impact and the project could cause direct or indirect impacts are considered below.

Land Use

The Butte County General Plan EIR concluded that there is a cumulative land use impact related to residential densities that are inconsistent with the County's Airport Land Use Compatibility Plan (ALUCP), necessitating an ALUCP override. The project is included in BCAG's 2012 Metropolitan Transportation Plan/Sustainable Communities Strategy and 2015 Federal Transportation Improvement Program. The project would not conflict with the County General Plan or the Rio d'Oro Specific Plan. While the project would improve safety and travel conditions along SR 70, it would not result in any changes in land use designations or zoning, and therefore would not contribute to any cumulative effect on land use.

Agriculture and Farmland

Unlike many other counties in the state (i.e., the San Joaquin Valley) Butte County is not experiencing a steady loss of important farmlands through conversion to nonagricultural uses. Between the years 2014 and 2016, Butte County had a net increase of important farmland, including 270 acres of prime farmland and 23 acres of farmland of statewide importance. Between 2014 and 2016, approximately 384 acres were converted to urban and built up use (California Department of Conservation 2016). As stated in Section 2.1.3, the project would convert some Important Farmland, including Farmland of Statewide Importance, to non-agricultural uses. The Butte County General Plan EIR concluded that buildout of the General Plan would result in a significant and unavoidable cumulative impact related to conversion of important farmlands to non-agricultural uses due to

growth projections in the Central Valley. The amount of farmland conversion related to the project would be relatively small (approximately 5.88 acres under Alternative 1, 7.73 acres under Alternative 2, and 7.45 acres under Alternative 3), and would not prevent the remainder parcels from continuing in agricultural production. Given the limited amount of farmland involved and the low rate of farmland conversion within Butte County, the project's contribution to the conversion of farmland would not be cumulatively considerable.

Traffic and Transportation/Pedestrian and Bicycle Facilities

This analysis is based on a projections approach that includes future traffic inputs from numerous sources to the horizon year of 2040. The projections are contained in the Draft Traffic Operations Report completed in September 2015 (Fehr & Peers 2015).

Caltrans has established route concept LOS thresholds of LOS D for SR 70 from East 24th Street to the Butte/Yuba County line and LOS E for SR 70 from the Butte/Yuba County line to 0.6 miles south of SR 162. Without the project, in horizon year 2040, the SR 70/Ophir Road intersection would operate at LOS F (an unacceptable level of service) during both the morning and evening peak hours. In addition, two side-street stop controlled intersections would operate at an unacceptable level of service for some movements during both the morning and evening peak hours. The SR 70/Palermo Road intersection would operate at LOS F for eastbound and westbound traffic during both the morning and evening peak hours. The SR 70/Power House Hill Road intersection would operate at LOS F for westbound traffic during both the morning and evening peak hours.

The queuing analysis for the 2040 horizon without the project shows that traffic at the SR 70/Ophir Road intersection would exceed available turn lane storage capacity for some southbound movements and for all eastbound and westbound movements. In addition, traffic at the SR 70/Palermo Road intersection would exceed available storage capacity for both eastbound and westbound traffic during the evening peak hour. At SR 70/Ophir Road, the eastbound left-turn lane has 60 feet of available storage capacity, but would have queue lengths of 827 feet during the morning peak hour and 561during the evening peak hour. The eastbound through and right-turn lane has 125 feet of available storage capacity, but would have queue lengths of 160 feet during the morning peak hour and 174 feet during the evening peak hour. The westbound left-turn lane has 100 feet of available storage capacity, but would have queue lengths of 127 feet during the morning peak hour and 521 feet during the evening peak hour. The westbound through and right-turn lane has 325 feet of available storage capacity, but would have queue lengths of 746 feet during the morning peak hour and 857 feet during the evening peak hour. At SR 70/Palermo Road, the eastbound left-turn and through lane has 125 feet of available storage capacity, but would have a queue length of 196 feet during the evening peak hour. The westbound left-turn and right-turn lane has 2,600 feet of available storage capacity, but would have a queue length greater than 2,600 feet.

As noted in Section 2.1.6, the project as mitigated would not affect pedestrian and bicycle facilities.

With one exception, the project will improve projected operation of the cumulative impact intersections and therefore will not contribute to a cumulative impact at most of the adversely affected intersections. However, under the with-project projection, the westbound side street stop at the SR 70 and Power House Hill Road intersection would be LOS F. The project therefore would have a cumulatively considerable contribution to congestion at that location. Table 2.1.6-5 summarizes the levels of service projected for each intersection without the project.

The with-project scenario includes improvements to these intersections storage capacity that are reasonably expected be in place by 2040. As a result, most of the above intersections would not have cumulatively significant impacts to which the project would contribute. With the project, the only queue lengths projected to exceed storage capacity are at the SR 70 and Ophir Road intersection in the AM for the eastbound left turn lane and in the PM for the westbound left turn lane. Table 2.1.6-6 summarizes projected intersection queueing with and without the project. Mitigation Measure TRA-2 would further reduce cumulative traffic impacts.

TRA-2: Provide Pedestrian and Bicycle Access during Construction

All detours or roadways that permit bicycle and pedestrian modes of travel will include provisions for pedestrian and bicycle access during construction. Bicycle or pedestrian detour routes may deviate from traffic detour routes where a more appropriate route is available.

Hydrology and Water Quality

The geographic context for the analysis of cumulative impacts associated with surface hydrology and water quality is the Lower Feather River watershed, and for groundwater hydrology, is the North Yuba Subbasin of the Sacramento Valley Groundwater Basin. This analysis accounts for anticipated cumulative growth within the potentially affected geographic area as represented by full implementation of the Butte County General Plan 2030. Current and future planned development is identified in the Rio d'Oro Specific Plan. Construction of the Rio d'Oro project will involve residential, commercial, and developed parkland between Palermo Road to the south and Ophir Road to the north, and is bisected north/south by SR 70. Planned development associated with population growth may have impacts on water quality in the project area due to increases in traffic, recreation, bridge use, and other factors. In addition, the Sutter Butte Flood Control Agency plans to improve 44 miles of levees from Thermalito Afterbay south to the Sutter Bypass.

The Butte County General Plan EIR determined that there is a cumulative impact related to development in levee and dam inundation areas. As stated in Section 2.2.1, the majority of the project is not located in the inundation area for Oroville Dam (California Department of Water Resources 2016). Only the northern-most portion approximately one mile north of Palermo to the Ophir Road/SR 70 intersection is within the inundation area. Although the proposed project is along the east bank of the Lower Feather River, it is at an elevation sufficient to protect it from most occurrences of typical river flooding. As stated in Section 2.2.1, the proposed project would lengthen the existing culvert along the portion of the Oak Knob Draw to match the widened highway. All construction activities within the Oak Knob Draw would comply with the necessary permits and requirements from regulatory agencies, and project drainage has been considered in the design, which may include bio-retention areas, vegetated slopes, bioswales, and reconstructed ditches. The minimal increase in impervious area would not cause on- or offsite flooding.

Construction of the proposed project would result in surface disturbance through grading, trenching, and compaction associated with typical development activities. Existing vegetation would be removed, thereby increasing the potential for erosion. Consistent with municipal stormwater programs for Butte County and Caltrans, project-specific SWPPPs would include implementation of construction BMPs. In addition, other necessary site-specific permits (i.e., CGP CWA Section 401 Water Quality Certification, Low-Threat Dewatering Permit, CWA Section 404 Permit) would be obtained for the project, and associated measures would be implemented to sufficiently reduce potential surface water quality impacts during construction, preventing cumulative impacts.

Therefore, the proposed project would not make a considerable contribution to a cumulative water quality impact during construction.

During project operation, the proposed project could contribute to the degradation of water quality and a cumulative impact if the project altered land use such that the type and concentration of pollutants in stormwater runoff increased. New development projects would increase impervious surface area, which would result in increased stormwater runoff. Projects would be consistent with municipal stormwater programs for Butte County and Caltrans, and, therefore, would include post-construction design measures, such as LID and vegetative areas to allow for infiltration and water quality treatment. The proposed project does not represent a significant departure from the existing land use of the area nor a substantial increase in the impervious surface area. Stormwater runoff would be directed to the proposed stormwater collection systems. Therefore, the proposed project would not make a considerable contribution to a cumulative water quality impact during operations.

Cumulative development could increase the rate and volume of stormwater runoff due to the overall increase in impervious surfaces. Increases in the rate or volume of stormwater runoff can cause localized flooding if the storm drain capacity is exceeded, or if flows exceed channel capacities and are conveyed to overbank areas where flood storage may not be available. Proposed projects within Butte County are required to comply with the Stormwater Program to maintain sufficient drainage system capacity to convey 100-year peak flows. For the most part, the cumulative projects would occur in areas that are already highly developed with impervious surfaces, so changes in flows that could increase localized flood risk would not be expected to be substantial.

All cumulative projects would be required to include design features to reduce flows to pre-project conditions, according to relevant MS4 Permit requirements, such as the Caltrans MS4 Permit, Statewide Phase II MS4 Permit, Butte County MS4 permit requirements, and other stormwater requirements (i.e., specified in *Rio d'Oro Specific Plan* and the Butte County General Plan 2030). The proposed project would be required to design a stormwater drainage system in compliance with these requirements. Thus, cumulative impacts likely would be less than significant and the project's contribution would not be cumulatively considerable. Therefore, cumulative impacts, and the project's contribution to cumulative impacts, on storm drainage capacity would not be cumulatively considerable.

Biological Resources

The proposed project would result in the loss of natural communities, including wetlands, which provide habitat for special-status plants and animals. The loss of wetlands, drainages, valley foothill riparian, and oak woodland in the project area and other development projects would contribute to the cumulative loss of these communities in Butte County. The project could also result in the injury or mortality of special-status animals, or the removal of special-status plants, which could, along with other construction projects in the region, contribute to reductions in populations of special-status plants and animals in Butte County. The Butte County General Plan EIR concluded that there would be a cumulative loss of habitat and sensitive natural communities due to ongoing development. Losses of wetlands, drainages, and valley foothill riparian, and potential impacts on special-status plants and animals from the proposed project would be avoided, minimized, and compensated for through the implementation of BMPs, avoidance and minimization measures, and compensatory mitigation. With implementation of avoidance, minimization, and mitigation measures, the project would not make a considerable contribution to cumulative impacts on biological resources.

Air Quality

Air quality analysis is by its nature cumulative. The analysis of the proposed project's pollutant emissions on regional air quality is undertaken by comparison to the regional air quality plans and emissions thresholds of the BCAQMD. See Section 2.2.6, Air Quality, for the discussion of cumulative air quality impacts and mitigation measures.

Noise

The Butte County General Plan EIR concluded that traffic noise would contribute to a condition that exceeds County noise standards and would result in a cumulatively considerable impact county-wide. Traffic noise levels from the project are predicted to increase at receptor locations by a maximum of 9 dB, under all design alternatives, which is less than the substantial increase threshold of 12 dB. However, implementation of the County's General Plan is anticipated to result in increased traffic noise levels throughout the county, including on SR 70. However, an increase in traffic noise by up to 9dB would not make a considerable contribution to the overall cumulative noise impact.

Climate Change/Greenhouse Gas Emissions

GHG analysis is by its nature cumulative. No individual project is of sufficient size to be the sole reason for climate change. Instead, climate change is the result of millions of activities that emit GHGs. The analysis of the proposed project's GHG emissions is within the context of statewide efforts to minimize the impacts of climate change. See Section 2.4, *Climate Change,* for the discussion of cumulative impacts and mitigation measures.

2.5.1.3 References Cited

Butte County. 2010. Butte County General Plan Draft EIR. April 2010. Available: http://www.buttegeneralplan.net/products/2010-04-08_Draft_EIR/ButteCountyGP_PublicReview_EIR.pdf. Accessed August 1, 2018.

California Department of Conservation. Farmland Mapping and Monitoring Program. Table A-3. Butte County 2014-2016 Land Use Conversion. Available: http://www.conservation.ca.gov/dlrp/fmmp/Pages/Butte.aspx. Accessed August 1, 2018.

Fehr & Peers. 2015. Traffic Operations Report for the State Route 70 (SR 70) Improvement Project in Butte County, CA.

Chapter 3

California Environmental Quality Act (CEQA) Evaluation

3.1 Determining Significance under CEQA

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans. BCAG is the lead agency under CEQA and Caltrans is the lead agency under NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Department to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

I. Aesthetics	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 along a 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 that would adversely affect daytime or nighttime views in the area?	☐	☒	☐	☐

3.2.1 CEQA Significance Determinations for Aesthetics

"No Impact" and "Less Than Significant with Mitigation Incorporated" determinations in this section are based on the project scope, field reviews and the Visual Impact Assessment. During the construction period, there is potential for additional light and glare sources and to degrade the existing visual character of the surrounding site. Avoidance, minimization and/or mitigation measures have been developed to reduce the potential impact to less than significant.

a, c) Less Than Significant With Mitigation Incorporated

Once built, the two segments of the proposed project would be perceived as one continuous roadway corridor. The majority of the project and its alternatives would widen into pasture lands and orchards and would not greatly alter the visual character of these areas. A grassy median would provide some visual relief compared to a continuous swath of pavement. Widening would affect landscape features, such as landscaping and fencing, in a similar manner under all alternatives and would bring the right-of-way closer to residents and businesses, creating negative impacts for high visual sensitivity views. Avoidance and minimization measures specified in the Natural Environmental Study (NES) for vegetation protection and replacement would help to improve project aesthetics. Avoidance and minimization measures would protect trees in staging areas, provide seasonal wildflower interest, and reduce impacts on landscape features. Overall, views to and from the project corridor would experience a slight reduction in overall visual quality, resulting from a change in appearance from a more rural-looking, two-lane roadway to a wider suburbanized, four-lane roadway. The impact is potentially significant; however, the changes from construction and operation would not result in a substantial adverse effect on a scenic vista or substantially degrade the existing visual character of the area with implementation of the recommended avoidance, minimization, and mitigation measures (AES-1, AES-3 and AES-4) identified in Section 2.1.7.4 in Chapter 2.

b) No Impact

As discussed in the Visual/Aesthetics section in Chapter 2, there are no roadways within or near the project area that are designated in federal, state, or local plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds (California Department of Transportation 2016a). Therefore, implementation of the proposed project would not damage scenic resources, such as trees, rock outcroppings, and historic buildings along a scenic highway.

d) Less Than Significant With Mitigation Incorporated

Nighttime construction would likely occur, and some nighttime lighting at the construction site would be required and could result in nuisance light if not properly designed. The proposed project would result in a nominal increase in daytime glare by increasing the paved area and by removing some of the roadside vegetation that provides shade. However, the pavement would be dark, which would greatly reduce glare, and roadside vegetation would still be present along the right-of-way to provide some shade.

Light and glare affects would be potentially significant; however, implementation of avoidance and minimization measures would reduce the effects of nighttime construction and light and glare impacts from lighted intersections. Therefore, these changes would not result in a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area with implementation of the avoidance, minimization, and mitigation measures (AES-2 and AES-5) identified in Section 2.1.7.4 in Chapter 2.

II. Agricultural and Forestry Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
In determining whether impacts on 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on 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 forest carbon measurement methodology provided in the 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 conflict with 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 that, 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?	☐	☐	☒	☐

3.2.2 CEQA Significance Determinations for Agriculture and Forest Resources

"No Impact" and "Less Than Significant" determinations in this section are based on the project scope, field review, and farmland mapping analysis.

a, e) Less Than Significant

As discussed in the Farmlands/Timberlands section in Chapter 2, implementation of the proposed project would involve the conversion of private land not currently used for transportation purposes to transportation right-of-way, which would require easements. Proposed project improvements requiring temporary construction disturbance, temporary easements, and permanent easements would affect lands within the project area that are mapped as Grazing Land (G), Unique Farmland (U) and Farmland of Statewide Importance (S) by the California Department of Conservation Farmland Mapping and Monitoring Program. As shown in Table 2.1.3-1 and Figure 2-3, small portions of land adjacent to the roadway would be acquired; however, this would not preclude the parcel from farming. Therefore, the impact is less than significant. No mitigation is required.

b) No Impact

As discussed in the Farmlands/Timberlands section in Chapter 2, no farmlands under Williamson Act contract are present within the project area, and therefore would not conflict with a Williamson Act contract.

c, d) No Impact

The project would not conflict with existing zoning for forestland. There is no forest land in the project area; therefore, the project would not result in a loss or conversion of forest land.

III. Air Quality	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
When 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 a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

"Less than Significant" and "Less than Significant with Mitigation Incorporated" determinations are based on the project scope, and the Air Quality Study Report. Avoidance and minimization measures will reduce emissions generated during grading/excavation, paving, and construction activities to less than significant thresholds.

3.2.3 CEQA Significance Determinations for Air Quality

"Less than Significant" and "Less than Significant with Mitigation Incorporated" determinations are based on the project scope, and the Air Quality Study Report. Avoidance and minimization measures will reduce emissions generated during grading/excavation, paving, and construction activities to less than significant thresholds.

a) Less Than Significant

The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. The proposed project is listed in Butte County Association of Governments (BCAG's) financially constrained 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2017 Federal Transportation Improvement Program (FTIP). Projects included in the RTP/SCS and FTIP are required to be consistent with the planning goals of SIPs adopted by local air quality management agencies. Long-term operation of the proposed project would result in an emissions increase relative to existing conditions, but emissions increases would be minor and would not exceed Butte County Air Quality Management District (BCAQMD) thresholds.

Implementation of the proposed project would improve overall network efficiency, reduce vehicle congestion, and increase travel speeds, all of which are consistent with the objectives and policies outlined in BCAG's RTP/SCS and BCAQMD's Clean Air Plan. No mitigation is required.

b) Less Than Significant With Mitigation Incorporated

The proposed project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. The proposed project's operational emissions are well below BCAQMD thresholds (see Table 2.2.6-5 in Air Quality section in Chapter 2). However, as shown in Tables 2.2.6-6 and 2.2.6-7 (see Air Quality section in Chapter 2), construction of the proposed project (Segment 1) would generate oxides of nitrogen (NOX) emissions in excess of the BCAQMD's numeric threshold. Mitigation Measure AQ-3 (see Air Quality section in Chapter 2) would reduce this impact by requiring heavy-duty equipment to comply with U.S. EPA Tier 3 emissions standards. In addition, the proposed project would also be subject to Caltrans Standard Specification 14, including compliance with BCAQMD dust controls (discussed in Air Quality section in Chapter 2). Mitigation Measure AQ-3, along with the avoidance and minimization measures identified in Section 2.2.6.4, Avoidance and/or Minimization Measures, would reduce NOx emissions generated during construction, below BCAQMD's thresholds.

c) Less Than Significant With Mitigation Incorporated

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard. As shown in Table 2.2.6-5 (in Air Quality section in Chapter 2), grading/excavation and paving activities during the construction of Segment 1 would generate NOX emissions in excess of BCAQMD's threshold of significance. However, implementation of Mitigation Measure AQ-3 (see Air Quality section in Chapter 2) would reduce NOX emissions to a less-than-significant level. Once construction is complete, long-term operation of the project would result in an emissions increase relative to existing conditions, but emissions would be minor and would not exceed BCAQMD thresholds (see Tables 2.2.6-8 and 2.2.6-9 in Air Quality section in Chapter 2).

d) Less Than Significant

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. Because ozone (O3) precursors (reactive organic gases [ROGs] and NOX) affect air quality on a regional scale, associated health effects are the product of emissions generated by numerous sources throughout a region. Minor increases in regional air pollution from project-generated ROGs and NOX would therefore have nominal or negligible impacts on human health. Construction of the proposed project would generate diesel particulate matter (DPM), but DPM emissions would be minor (less than 10 pounds per day) and only occur over a period of 3 years. The short-term construction period is well below the 30-year exposure period typically associated with increased cancer risks. Moreover, DPM from construction equipment would be transitory and spread throughout the entire 6-mile segment, as opposed to concentrated at a single location. Operation of the proposed project would not increase truck volumes, but ambient concentrations of DPM may be localized in areas where ambient concentrations of DPM could be higher than under existing conditions. However, the widened portions of SR 70 are neither considered by the ARB (2005) as a high-traffic road nor as a roadway with significant diesel volumes. Carbon monoxide (CO) concentrations are not anticipated to exceed the 1- or 8- hour National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS), and there is no potential

for impacts related to NOA emissions during construction activities. The impact is less than significant. No mitigation is required.

e) Less Than Significant

The proposed project would not create objectionable odors affecting a substantial number of people. Minor sources of odors (i.e., diesel engines) would be present during construction of the proposed project. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors are not anticipated to result in the adverse exposure of receptors to objectionable odorous emissions. Long-term operation of the proposed project is not anticipated to have an impact on odors because it would not increase truck volumes along SR 70. The impact is less than significant. No mitigation is required.

IV. Biological Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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, or regulations, or by the California Department of Fish and Game or U.S. 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, marshes, vernal pools, coastal wetlands, 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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

"No Impact", "Less than Significant" and "Less than Significant with Mitigation Incorporated" determinations are based on the project scope, field review, botanical studies, and Natural Environmental Study report. Associated avoidance, minimization, and/or mitigation measures have been documented to reduce the impact.

3.2.4 CEQA Significance Determinations for Biological Resources

"Less than Significant" and "Less than Significant with Mitigation Incorporated" determinations are based on the project scope, field review, botanical studies, and Natural Environmental Study report. Associated avoidance, minimization, and/or mitigation measures have been documented to reduce the impact.

a) Less Than Significant With Mitigation Incorporated

As discussed in the Threatened and Endangered Species section in Chapter 2, there are three federal or stated listed threatened or endangered plant species that have the potential to occur in the project area, which include Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*), slender Orcutt grass (*Orcuttia tenuis*), and Greene's tuctoria (*Tuctoria greenei*). Reference Section 2.3.5.2 in Threatened and Endangered Species section in Chapter 2 for a discussion of each species. Federal or stated listed threatened or endangered animal species that have the potential to occur in the project area and be affected by the proposed project include vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Swainson's hawk (*Buteo swainsoni*). Reference Section 2.3.5.2 in Threatened and Endangered Species section in Chapter 2 for a discussion of each species.

State and federally listed plants would be protected by state and federal agencies, and the loss of any plants would be potentially significant. Implementation of Mitigation Measures BIO-2, BIO-5, and BIO-6 (reference Section 2.3.3.4) would reduce the potential impacts to a less-than-significant level by avoidance and minimization, and compensation.

Permanent and temporary impacts on suitable or occupied habitat, potential removal or burial of resting cysts, and degradation of habitat for vernal pool branchiopods are potentially significant impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp. Implementation of Mitigation Measures BIO-2, BIO-8, BIO-9 (reference Section 2.3.5.4) would reduce potential impacts on these species to a less than significant level by providing training for construction employees, monitoring, compensation.

The boundaries of the proposed staging area where the elderberry shrubs are located were modified to avoid direct impacts on valley elderberry longhorn beetle. Because impacts on elderberry shrubs would be avoided, the project would have no impact on valley elderberry longhorn beetle.

b) Potentially Significant

Valley foothill riparian occurs on the west side of SR 70 north of Oak Knob Draw and on both sides of SR 70 at its intersection with Ophir Road. This community is associated with drainage ditches. Dominant species in this community include arroyo willow, narrowleaf willow (*Salix exigua*), and Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*). Valley oak (*Quercus lobata*) is intermixed with these species but is not a dominant species.

As detailed in Biological Environment in Chapter 2, construction of the proposed project would result in trimming or removal of valley foothill riparian vegetation.

Implementation of Mitigation Measure BIO-1 would reduce permanent and temporary direct impacts on valley foothill riparian to a less-than-significant level by providing compensation for the permanent loss of valley foothill riparian.

c) Less Than Significant With Mitigation Incorporated

As discussed in the Wetlands and Other Waters in Chapter 2, construction of the proposed project would result in permanent and temporary impacts on vernal pool/vernal swale, seasonal wetland/seasonal swale, and seasonal emergent wetland habitats. Impacts were considered to be

permanent if they would result in the placement of permanent fill in these wetland habitats associated with SR 70 widening. Impacts were considered to be temporary if fill would be removed following completion of construction and temporarily disturbed portions of wetlands would be restored. Temporary and permanent impacts are identified in Table 2.3.2-1 in Section 2.3.2.2 (Environmental Consequences). The loss of wetlands is a significant impact. Implementation of Mitigation Measures BIO-2 and BIO-3 would reduce direct impacts on wetlands to a less-than-significant level by providing training for construction employees and compensation.

d) Less Than Significant

As discussed in the Threatened and Endangered Species section in Chapter 2, construction noise and activities that result in disturbance during the nesting season and removal of occupied nest trees are potentially significant impacts on Swainson's hawk. Implementation of project BMPs would avoid potential impacts and no mitigation is proposed.

As discussed in the Biological Environment in Chapter 2 under direct impacts, construction activities and presence of construction equipment and personnel in areas where animals normally cross the highway could discourage animals from crossing in these areas when construction is occurring. These impacts would be in isolated locations where work would be occurring and temporary and could result in injury or mortality of individual animals, but and are unlikely to substantially impact wildlife movement. The impact is less than significant. No mitigation is required.

e, f) No Impact

Butte County has an Oak Woodland Mitigation Ordinance; however, as of June 2018, it is still in "Draft" form. The County does have an Oak Woodlands Management Plan which was adopted in 2007 and is intended to provide incentive-based, voluntary opportunities to private landowners who wish to pursue oak woodland conservation strategies as provided by the 2001 California Oak Woodlands Conservation Act. Through the Oak Woodlands Management Plan, the County acknowledges the values associated with oak woodlands, and recognizes and supports private landowners who choose to voluntarily adopt measures to ensure oak woodland viability through participation in the Oak Woodlands Conservation Program. The proposed project would not conflict with the Oak Woodlands Management Plan. Private landowners would still be able to participate in the Oak Woodlands Conservation Program. No impact would occur.

Butte County has another conservation plan in "Draft" form, the Butte Regional Conservation Plan (BRCP) that will cover approximately 560,000 acres in the western portion of the County (Leidos 2015). The BRCP is both a federal Habitat Conservation Plan (HCP) and a state Natural Community Conservation Plan (NCCP). When adopted, it will provide streamlined state and federal endangered species act and wetlands permitting for transportation projects, land development and other covered activities over the 50-year term of the permits. It will also provide comprehensive species, wetlands and ecosystem conservation and contribute to the recovery of endangered species within the Plan Area. The proposed project would be a covered state transportation project under the BRCP and would not conflict with the BRCP, but rather be consistent with and adhere to the plan. No impact would occur.

V. Cultural Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 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 dedicated cemeteries?	☐	☒	☐	☐

"Less Than Significant Impact with Mitigation Incorporated" determinations in this section are based on the project scope, Historical Properties Survey Report, Archaeological Survey Report, Historical Resources Evaluation Report, and the adoption of avoidance, minimization, and/or mitigation measures that will be implemented to reduce impact to unanticipated cultural, paleontological, or human remains found on the site.

3.2.5 CEQA Significance Determinations for Cultural Resources

a, b) Less Than Significant With Mitigation Incorporated

As discussed in the Cultural Resources section in Chapter 2, the area of potential effect (APE) encompasses no known National Register of Historic Places (NRHP)-eligible, NRHP-listed, or previously unevaluated archaeological resources. Similarly, the architectural APE encompasses no known NRHP-eligible, NRHP-listed, or previously unevaluated built environment resources. However, the potential for discovery of unknown cultural resources does exits, which would be a potentially significant impact. With implementation of Mitigation Measure CUL-1 (reference Section 2.1.8.4 in Cultural Resources section in Chapter 2), the impacts to archeological resources are less than significant with mitigation incorporated.

c) Less Than Significant With Mitigation Incorporated

As discussed in the Paleontology section in Chapter 2, there are no fossil localities in the project boundaries; however, all formations in the project area, with the exception of the dredge tailings, have the potential or are known to contain significant paleontological resources. If fossils are present in the project area, they could be damaged by earth-disturbing activities (i.e., excavation and grading) during construction. The more extensive and deeper the earth-disturbing activity, the greater the potential for damage to paleontological resources. Therefore, the impact is potentially significant. With implementation of Mitigation Measure PALEO-1 (reference Section 2.2.4.4 in

Paleontology section in Chapter 2), the impacts to paleontological resources are less than significant with mitigation incorporated.

d) Less Than Significant With Mitigation Incorporated

While there are no known cemeteries or burial sites in the project APE the potential does exist to encounter unknown human remains during construction, which would be a potentially significant impact. With implementation of Mitigation Measure CUL-1 (reference Section 2.1.8.4 in Cultural Resources section in Chapter 2), the potential to discover unknown human remains during construction is less than significant with mitigation incorporated.

VI. Geology and Soils	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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.	☐	☐	☒	☐
2. Strong seismic ground shaking?	☐	☐	☒	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
4. 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 an onsite or offsite 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 wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

"No Impact" and "Less Than Significant" determinations in this section are based on project scope and the implementations of associated BMPs, Mitigation Measures, and by adhering to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

3.2.6 CEQA Significance Determinations for Geology and Soils

a, c) Less Than Significant

As discussed in the Geology/Soils/Seismic/Topography/Mineral Resources section in Chapter 2, there are no known active faults in or near the project area. Thus, impacts to construction workers or the traveling public related to surface fault rupture would be less than significant.

The project is an area with a low potential for strong seismic ground shaking. In addition, a geotechnical field investigation would be conducted and a Geotechnical Design Report with recommended design parameters would be prepared in accordance with Caltrans' HDM (California Department of Transportation 2012). The project would be designed according to Caltrans seismic standards, as provided in the HDM, minimizing the risk to construction workers or the traveling public from strong seismic ground shaking.

The project area is subject to a low potential for seismic-related ground failure and liquefaction because of the low potential for strong ground shaking and the gently sloping topography. There would be no impact on construction workers or the traveling public.

The potential for landslides and other slope stability issues in most of the project area is low. Most of the project area is relatively flat (gently sloping) and the risk of strong shaking is low. The impact is less than significant. No mitigation is required. However, the avoidance and minimization measures GEO-1, GEO-2, and GEO-3 (reference Section 2.2.3.4 in the Geology/Soils/Seismic/Topography/Mineral Resources section in Chapter 2) would be implemented.

b) Less Than Significant

Ground-disturbing earthwork associated with road grading and construction could increase soil erosion rates and loss of topsoil. The BMPs described in Section 2.2.1, Hydrology and Floodplain, and Section 2.2.2, Water Quality and Stormwater Runoff, would minimize erosion and the loss of topsoil. The impact is less than significant. No mitigation is required.

d) Less Than Significant

The project area is located on soils known to be expansive (i.e., have a high shrink-swell potential), have low strength, and have shallow depth to the saturation zone. A final Geotechnical Design Report, per avoidance and minimization measure GEO-3, would be prepared, which would recommend minimization measures to address these soil issues. The impact would be less than significant. No mitigation is required.

e) No Impact

The project would not include a septic system. There would be no impact.

VII. Greenhouse Gas Emissions	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒

"Less Than Significant" determinations in this section are based on project scope and the Air Quality Study Report prepared for this project. The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have significant impact on the environment.

3.2.7 CEQA Significance Determinations for Greenhouse Gas Emissions

a) Less Than Significant

As discussed in the Climate Change section in Chapter 2, the proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. As shown in Table 2.4-6, construction of the proposed project would result in a short-term increase of 4,979 metric tons of carbon dioxide equivalent (CO_2e). Table 2.4-5 indicates that long-term operation of the proposed project would increase CO_2 emissions slightly relative to existing conditions. The impact is less than significant. No mitigation is required.

b) No Impact

Based on currently available scientific data, project-level analysis of GHG emissions is limited. Although a GHG analysis is included for this project, numerous key GHG variables (e.g., fuel economy) that are likely to change dramatically during the design life of the proposed project would further reduce the projected CO_2e emissions. In addition, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, as the project is consistent with BCAG's RTP/SCS and would therefore not conflict with SB 375. No impact would occur.

VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d. Be located on a site that 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. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. Be located within the vicinity of a private airstrip and 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?	☐	☐	☒	☐

3.2.8 CEQA Significance Determinations for Hazards and Hazardous Materials

"No Impact, Less Than Significant Impact, and Less Than Significant Impact with Mitigation Incorporated" determinations in this section are based on project scope and the Phase I Environmental Assessment and the Draft Limited Aerially Deposited Lead Screening.

a, b) Less Than Significant With Mitigation Incorporated

As discussed in the Hazardous Waste/Materials section in Chapter 2, humans and the environment could be exposed to hazardous conditions from the accidental release of hazardous materials during construction activities. Construction would involve the use of heavy equipment, involving small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment) that may result in hazardous conditions in the project area.

Disturbing either yellow or white pavement markings by grinding or sandblasting or removal of treated wood posts or guardrails could expose construction workers or the general public to lead chromate and other harmful chemicals unless standard removal protocols are followed. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health. Soils on agricultural parcels could contain hazardous chemicals from past pesticide/herbicide use. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health. The impact is potentially significant. Therefore, the avoidance, minimization and mitigation measures in Chapter 2, HAZ-1, HAZ-2, HAZ-3, and HAZ-4, will be incorporated. Reference Section 2.2.5.4 in the Hazardous Waste/Materials section in Chapter 2 for a description of each of these avoidance, minimization and mitigation measures. With the implementation of these measures, potential impacts would be less than significant.

c) Less Than Significant With Mitigation

The Feather River Adventist School, located at 27 Cox Lane, is the only school located within 0.25 miles of the project site. As noted above, construction would involve the use of heavy equipment, involving small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment) that may result in hazardous conditions in the project area. Exposure of school children and faculty and staff to hazardous materials or wastes could pose a possible threat to human health. The impact is potentially significant. Therefore, the avoidance, minimization and mitigation measures in Chapter 2, HAZ-1, HAZ-2, HAZ-3, and HAZ-4, will be incorporated. Reference Section 2.2.5.4 in the Hazardous Waste/Materials section in Chapter 2 for a description of each of these avoidance, minimization and mitigation measures. With the implementation of these measures, potential impacts would be less than significant.

d) No Impact

According to the Initial Site Assessment (Chico Environmental 2013) prepared for the project, there are no Cortese List hazardous waste and substances sites within the 0.125-mile search radius of the project site. No impact would occur.

e, f) No Impact

The closest public airport is the Oroville Municipal Airport, which is approximately 2.25 miles northwest of the Ophir Road/SR 70 intersection. There are no private airstrips in the project vicinity. No aspect of the project would result in a safety hazard for people residing or working in the project area. No impact would occur.

g) Less Than Significant

As discussed in the Utilities/Emergency Services section in Chapter 2, there may be temporary disruptions to the existing highway during the construction period, but detour routes would be available along Cox Lane, Palermo Road, Pacific Heights Road, Power House Hill Road, Ophir Road, Georgia Pacific Way, and Feather River Road. SR 162 could also provide a detour route to and from SR 99. Any required closures would be coordinated with emergency service providers so as not to hinder emergency responses, as specified in Chapter 2, Section 2.1.5.3, Avoidance, Minimization, and Mitigation Measures. Project operation would improve traffic congestion and allow for formal passing opportunities. This would be safer, more reliable, and more efficient for emergency service providers and would be a benefit to those served by these providers.

h) Less Than Significant

There is the potential for wildland fires in the region given the relatively dry summer climate, with hot days and wind; however, the project site is not located in a fire hazard severity zone according to the California Department of Forestry and Fire Protection's fire hazard severity zone map for Butte County (California Department of Forestry and Fire Protection, 2007). The impact would be less than significant. No mitigation is required.

IX. Hydrology and Water Quality	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that 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 that would result in substantial erosion or siltation onsite or offsite?	☐	☐	☒	☐
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 that would result in flooding onsite or offsite?	☐	☐	☒	☐
e. Create or contribute runoff water that 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 that would impede or redirect floodflows?	☐	☐	☒	☐
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. Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.2.9 CEQA Significance Determinations for Hydrology and Water Quality

"No Impact" and "Less Than Significant" determinations in this section are based on project scope, field reviews and water quality report.

a, e, f) Less Than Significant

The project area is within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). This region includes the Sacramento River and San Joaquin River basins, including all areas from the crest of the Sierra Nevada range west to the Coast Range and Klamath Mountains. Drainage from SR 70 sheet flows into adjacent properties or is collected in roadside toe-gutters. Run-off collected in toe-gutters is not discharged into any water body. The two ephemeral drainages are naturally occurring drainages that primarily carry flow after rain events. Non-jurisdictional roadside ditches occur along sections of SR 70. These ditches were constructed in uplands and function in draining runoff from the road pavement. However, these ditches do not replace existing natural drainages or connect a natural drainage to a downstream tributary.

Potential temporary impacts to existing water quality would result from staging and active construction areas, which could result in the release of fluids, concrete material, construction debris, sediment, and litter beyond the perimeter of the site. Sediment from construction would be minimized by the use of Caltrans' construction BMPs for stormwater, including silt fence, fiber roll, check dam, DI protection, concrete wash-out, and street sweeping.

Because the intended acreage of disturbed soil area would be more than one acre, a SWPPP (reference avoidance and minimization measure WQ-1 in Section 2.2.2.4 in Chapter 2) would be completed to minimize pollution and stormwater runoff during construction. A SWPPP would be prepared by the contractor and approved by Caltrans, pursuant to Department 2015 Standard Specification 13-3. The SWPPP would address potential temporary impacts via implementation of appropriate BMPs. Therefore, impacts to water quality would be less than significant. No mitigation is required.

b) Less Than Significant

As discussed in the Hydrology and Floodplain section in Chapter 2, increased impervious surfaces could reduce the ability for groundwater recharge within the localized groundwater aquifer system. However, to address the additional flows and ensure that the proposed project does not exceed existing flow conditions, the project would include stormwater runoff BMPs to collect and retain or detain the additional flows within the project limits, as required by the California Department of Transportation National Pollution Discharge Elimination System municipal separate storm sewer systems (MS4) permit and a Storm Water Management Plan. In addition, the proposed project would only minimally affect groundwater resources because the excavations would occur on a temporary, short-term basis during the construction period. The impact is less than significant. No mitigation is required.

c, d) Less Than Significant

The proposed project would not substantially alter the existing drainage pattern in the area. As discussed in the Hydrology and Floodplain section in Chapter 2, project drainage has been

considered in the design, which may include bio-retention areas, vegetated slopes, bioswales, and reconstructed ditches. The minimal increase in impervious area would not cause on- or offsite flooding. The proposed project design includes side slopes of 6H:1V or flatter, where feasible, to maintain pre-project sheet-flow drainage patterns (i.e., flow and rates) and improved storm drainage facilities. The impact is less than significant. No mitigation is required.

g) No Impact

The project site is partially within a Federal Emergency Management Agency (FEMA) 100-year floodplain; however, the project does not include housing. No impact would occur.

h) Less Than Significant

As noted above, the project site is partially within the FEMA 100-year floodplain. The majority of the project alignment is within Zone X (unshaded), areas of minimal flood hazard, usually depicted on Flood Insurance Rate Maps (FIRMs) as above the 500-year flood level. However, some portions of the proposed project are within Zone A, the 100-year Floodplain Zone, though no depths or base flood elevations are determined within these zones (Federal Emergency Management Agency 2011). Although the proposed project is along the east bank of the Lower Feather River, it is at an elevation sufficient to protect it from most occurrences of typical river flooding. The impact is less than significant. No mitigation is required.

i) Less Than Significant

The headwaters of the Feather River is the Oroville Dam at Lake Oroville. The inundation map for the Oroville Dam, which was updated in June 2016, shows that the majority of the project alignment is out of the inundation area (California Department of Water Resources 2016). Only the northern-most portion approximately one mile north of Palermo to the Ophir Road/SR 70 intersection is within the inundation area. However, the project would not expose people or structures to a significant risk of loss as a result of failure of the Oroville Dam or levees lining the Feather River because the project would not affect the Oroville dam or any levees. The impact is less than significant. No mitigation is required.

j) No Impact

The project alignment is not near a large body of water capable of producing a seiche event. The project is not near the ocean so is not subject to a tsunami event. The project area is relatively flat and not subject to a mudflow event. No impact would occur.

X. Land Use and Planning		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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, a 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?	☐	☐	☐	☒

3.2.10 CEQA Significance Determinations for Land Use and Planning

"No Impact" determinations in this section are based on project scope and analysis of consistency with the associated land use plan, policy or regulation, including the Butte County General Plan.

a) No Impact

The project includes the widening of SR 70 south of Oroville from two to four lanes for a 6.1-mile section. Therefore, the project would not physically divide an established community. No impact would occur.

b) No Impact

The project is included in BCAG's 2012 Metropolitan Transportation Plan/Sustainable Communities Strategy and 2015 Federal Transportation Improvement Program, where it is listed under two separate project descriptions: "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd" and "Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln." According to Caltrans' Interregional Transportation Strategic Plan, SR 70 is identified as one of 34 High Emphasis Routes that are of particular importance from a statewide perspective and is further designated as one of 10 Focus Routes in California. Additionally, the project would not conflict with the County General Plan or the Rio d'Oro Specific Plan. The project would not conflict with any plan adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

c) No Impact

See Response IV, Biological Resources e, and f.

XI. Mineral Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒

3.2.11 CEQA Significance Determinations for Mineral Resources

"No Impact" determinations in this section are based on project scope and review of the Butte County General Plan and mineral resource zones.

a, b) No Impact

As discussed in the Geology/Soils/Seismic/Topography/Mineral Resources section in Chapter 2, there are no designated mineral resource areas (MRZ-2) in the project area or vicinity, and the project would not impede the extraction of any known mineral resources. There would be no impact.

XII. Noise		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☒	☐
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.2.12 CEQA Significance Determinations for Noise

"No Impact and Less Than Significant" determinations in this section are based on the noise analysis, Noise Study technical report, project scope, and field reviews.

a, c) Less Than Significant

As discussed in the Noise section in Chapter 2, the traffic noise modeling documented in the Noise Study Report indicates that traffic noise levels would increase relative to existing conditions by up to nine dB under the proposed project. These values do not exceed the threshold for a substantial increase in noise levels as defined by Caltrans (i.e., 12 dB above existing levels). Therefore, the impact is less than significant. No mitigation is required.

b) Less Than Significant

Construction of the proposed project would require some equipment that could potentially generate groundborne vibration, such as a jackhammer. However, these activities would be short-term impacts that would cease after construction has been completed. The project would not include any pile driving or any other activities that would generate excessive groundborne vibration or noise.

The project would, therefore, not generate excessive groundborne vibration or groundborne noise levels. The impact would be less than significant. No mitigation is required.

d) Less Than Significant

As discussed in the Noise section in Chapter 2, during construction, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction activities include demolition of existing structures, building of new structures, and implementation of detours. No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. The impact is less than significant. No mitigation is required.

e, f) No Impact

The closest public airport is the Oroville Municipal Airport, which is approximately 2.25 miles northwest of the Ophir Road/SR 70 intersection. According to the Butte County Airport Land Use Compatibility Plan (ALUCP), the project alignment is outside all compatibility zones of the Oroville Municipal Airport (Butte County 2000). There are no private airstrips in the project vicinity. No impact would occur.

XIII. Population and Housing	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

3.2.13 CEQA Significance Determinations for Population and Housing

"Less Than Significant" determinations in this section are based on the project scope and the Community Impact Assessment.

a, b, c) Less Than Significant

As discussed in the Community Impacts section of Chapter 2, the proposed project would involve the widening of an existing roadway. The project would not change land uses surrounding the project alignment and would not provide new access to areas that are currently inaccessible via SR 70. However, the project would indirectly contribute to growth by increasing the efficiency with which vehicles are able to move through the project vicinity. Growth in the project vicinity is reasonably foreseeable, and the project would serve the transportation needs of such growth. However, the project would not permanently remove housing, so no displacement would occur. Therefore, the project would not contribute to changes in the demographic characteristics of the region and study area. Impacts would be less than significant. No mitigation is required.

XIV. Public Services	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

3.2.14 CEQA Significance Determinations for Public Services

"No Impact" and "Less Than Significant" determinations in this section are based on the project scope and an online review of public services in the project area.

a) Less Than Significant

3.2.14.1 Fire and Police Protection

Fire protection services are provided by the Butte County Fire Department, the Palermo Fire Department, the El Medio Fire Department, and the Gridley Fire Department. Police protection services in the project area are provided by the Butte County Sheriff's Department. Table 2.1.5-1 in Chapter 2 shows the locations of fire and police protection facilities in the project vicinity, none of which are within a 0.5-mile radius of the project site.

There may be temporary disruptions to the existing highway during construction, but detour routes would be available along Cox Lane, Palermo Road, Pacific Heights Road, Power House Hill Road, Ophir Road, Georgia Pacific Way, and Feather River Road. SR 162 could also provide a detour route to and from SR 99. Any required closures would be coordinated with emergency service providers so as not to hinder emergency responses. Project operation would improve traffic congestion and allow for formal passing opportunities. This would be safer, more reliable, and more efficient for emergency service providers and would be a benefit to those served by these providers. Impacts would be less than significant, and no mitigation is required; however, a Traffic Control Plan would be implemented to provide controlled access through the work site during construction.

3.2.14.2 Schools, and Other Public Facilities

The Feather River Adventist School is located at the southern terminus of the project at 27 Cox Lane. It is the only school located within 0.25 miles of the project site. There are no other public facilities within close proximity to the project alignment. The project would not result in an increase in population or facilities that would require the provision of schools, or other public facilities, or result in the need for physically altered facilities. The demand for schools, or other public facilities would be the same as under existing conditions after construction of the project. Therefore, no impact on schools or other public facilities would occur from the project.

3.2.14.3 Parks

For a discussion of parks, see Section XV. Recreation.

XV. Recreation	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. 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. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

3.2.15 CEQA Significance Determinations for Recreation

"Less Than Significant" determinations in this section are based on the project scope and the Community Impact Assessment.

a, b) Less Than Significant

With the exception of the Dingerville USA golf course, there are no other local, state, or federally designated parks or recreational areas within a 0.5-mile radius of the project site. The golf course is closed to the public, and the recreational areas within the resort are set aside for use by the resort residents. The project is adjacent to a driveway access for the California Department of Fish and Wildlife's (CDFW's) Oroville Wildlife Area. The driveway is on SR 70 approximately 0.6 mile north of Power House Hill Road. The majority of the 11,800-acre Oroville Wildlife Area is not within the study area.

The project would require sliver right-of-way acquisitions from the properties fronting SR 70, including Oroville Wildlife Area. Temporary construction easements (TCEs) would also be required with up to an additional 10 feet beyond the right-of-way acquisition. The project would temporarily affect a small of strip of land (less than 0.2 acre) west of SR 70 during construction and permanently incorporate 0.21 to 1.12 acres of land into the SR 70 right-of-way. The Oroville Wildlife Area facilities and related activities are primarily located west of Feather River or occur at a distance from the proposed project, not adjacent to the area proposed for widening. Furthermore, the improvements associated with widening SR 70 would not interfere with Oroville Wildlife Area's function to preserve wildlife values and habitat and would be coordinated with CDFW. Impacts would be less than significant, and no mitigation is required; however, avoidance and minimization measure REC-1 (Minimize Harm to the Oroville Wildlife Area Property) (See Section 2.1.1.3 in Chapter 2) would be implemented to reduce any potential impacts to the Oroville Wildlife Area.

XVI. Transportation/Traffic	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 because of 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?	☐	☐	☒	☐

3.2.16 CEQA Significance Determinations for Transportation/Traffic

"No Impacts" and "Less Than Significant" determinations in this section are based on the project scope and the Traffic Operations Report for the project. During construction, accessibility for vehicles may be affected, but associated avoidance and minimization measures will reduce potential impacts.

a) No Impact

The project is consistent with BCAG's 2012 Metropolitan Transportation Plan/Sustainable Communities Strategy and 2015 Federal Transportation Improvement Program where it is listed under two separate project descriptions: "Widen SR 70 from 2 to 4 lanes from Ophir Rd to Palermo Rd" and "Widen SR 70 from 2 to 4 lanes from Palermo Rd to Cox Ln." The project is also consistent

with Caltrans' Interregional Transportation Strategic Plan, which identifies SR 70 as one of 34 High Emphasis Routes that are of particular importance from a statewide perspective. SR 70 is further designated as one of 10 Focus Routes in California. The project would not conflict with any plans, rather it would implement these plans. No impact would occur.

b) Less Than Significant

As discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section in Chapter 2, without the project, in construction year 2020, the SR 70/Ophir Road intersection would operate at an unacceptable level of service during the morning peak hour. At the intersection of SR 70 and Palermo Road, the westbound left-turn and through lanes would operate at LOS F during the evening peak hour. With the project, in construction year 2020, all study intersections would operate at acceptable levels of service during both the morning and evening peak hours. Reference Section 2.1.6.3 in the Transportation/Pedestrian and Bicycle Facilities section in Chapter 2 for more detailed information. Impacts would be less than significant, and no mitigation is required; however, a Traffic Control Plan would be prepared as part of the project to provide controlled access through the work site during construction.

c) No Impact

The closest public airport is the Oroville Municipal Airport, which is approximately 2.25 miles northwest of the Ophir Road/SR 70 intersection. No aspect of the project would result in a change in air traffic patterns or substantial safety risks for people residing or working in the project area. No impact would occur.

d) Less Than Significant

No incompatible uses or hazardous design features are associated with operation of the proposed project. The project would widen a 6.1-mile section of rural SR 70 and improve traffic operations and safety along this segment of the highway. The impact is less than significant.

During construction activities, a short-term increase in the potential for accidents involving motor vehicles and bicycles could occur. Because of the temporary disruption to traffic flow, the presence of construction equipment in the public ROW, and the localized increase in traffic congestion, drivers would be presented with unexpected driving conditions and obstacles, potentially resulting in an increase in automobile accidents. These potential impacts would not substantially increase hazards because people are used to driving through construction areas, and one lane of travel in both directions would be open at all times during construction. Impacts would be less than significant, and no mitigation is required. A Traffic Control Plan would be prepared as part of the project to provide controlled access through the work site during construction.

e) Less Than Significant

The Traffic Control Plan to be prepared and implemented would provide controlled access through the work site during construction. Although traffic would be slowed during construction, continuous access would be provided. This would avoid significant effects that could result from traffic stoppage, such as interruption of emergency access or access to residences and commercial businesses. The impact is less than significant. No mitigation is required.

f) Less Than Significant

As discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section in Chapter 2, bicycle traffic is allowed on SR 70 through the project area; however, there is no designated bicycle facility on the corridor and no parallel facility present. Given the rural location of the project, the large distances between destination points, and the lack of formal facilities such as sidewalks and bike lanes, bicycle and pedestrian travel is not a common mode of transportation along the project corridor. B-Line Butte Regional Transit operates one bus line within the project area, the 30 bus line, which travels from Biggs to the southwest of the project alignment to Oroville to the north of the project alignment.

The proposed project provides no new pedestrian or bicycle facilities. Bicycle traffic would continue to be permitted on SR 70 and local roadways, and the 30 bus line would continue to travel from Biggs to Oroville. The impact is less than significant. No mitigation is required.

XVII. Tribal Cultural Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

3.2.17 CEQA Significance Determinations for Tribal Cultural Resources

"No Impact" determinations in this section are based on consultation with the CEQA lead agency, BCAG.

a, b) No Impact

To date, BCAG has not received requests from tribes with traditional cultural affiliations to the project area to be notified of opportunities to consult on specific projects (Newsum pers. comm.). Accordingly, no consultation for the proposed project was initiated or conducted under the requirements of AB 52. There would be no impact.

XVIII. Utilities and Service Systems	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 stormwater 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 would new or expanded entitlements be needed?	☐	☐	☒	☐
e. Result in a determination by the wastewater treatment provider that 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?	☐	☐	☐	☒

3.2.18 CEQA Significance Determinations for Utilities and Service Systems

"No Impact and Less Than Significant Impact" determinations in this section are based on the project scope. There may be temporary disruptions to the existing highway during the construction period, but detour routes would be available, and any required closures would be coordinated with emergency service providers.

a, e) Less Than Significant

No wastewater would be generated by the project. If dewatering is necessary in areas where groundwater is encountered, depending on surface and groundwater levels at the time of construction, a permit for discharge of extracted groundwater would be obtained from the RWQCB. This discharge shall be consistent with RWQCB requirements and as such would not result in a

violation of water quality standards or waste discharge requirements. The impact is less than significant. No mitigation is required.

b) No Impact

The proposed project would not require water or wastewater treatment as no potable water and/or toilets would be provided as part of the project. No impact would occur.

c) Less Than Significant

The proposed project design includes improved storm drainage facilities, which would minimize the potential for discharges of pollutants to nearby storm drains and the Lower Feather River. Biofiltration strips, bioswales, and roadside retention ditches are proposed to provide BMP treatment and would increase groundwater recharge and capture the roadway pavement runoff. The project would be designed in accordance with the objectives of Caltrans' NPDES Permit requirements and related stormwater requirements to reduce runoff and the volume of entrained sediment. Caltrans stormwater quality manuals also include BMPs to be implemented for erosion and sediment control and material management. The implementation of BMPs would minimize impacts on drainage and water quality during long-term operations at the site. The project would only minimally affect groundwater resources because excavations and dewatering would occur on a temporary, short-term basis during the construction period. The impact is less than significant. No mitigation is required.

d) Less Than Significant

The project would not require any water during operation. During construction, water would only be used for dust control along the project corridor. Due to the minimal amount of water that would be required for dust control, the impact to the existing water supply would be less than significant. No mitigation is required.

f) Less Than Significant

Construction of the proposed project would generate solid waste. The amount of construction waste would not be substantial, would be limited to the construction time period, and would not result in a substantial reduction in the capacity of a landfill.

Most municipal wastes in Butte County are hauled to the Neal Road Recycling and Waste Facility, which is owned by Butte County and managed by the Butte County Department of Public Works. The facility is permitted to accept municipal solid waste, inert industrial waste, demolition materials, special wastes containing nonfriable asbestos, and septage. The facility's maximum permitted capacity is 25,271,900 cubic yards and its remaining capacity is 20,847,970, with an estimated closure year of 2059 (CalRecycle 2018). There is sufficient capacity in the landfill to serve the project; therefore, construction of the project would not result in an impact to the capacity of this landfill. The impact is less than significant. No mitigation is required.

g) No Impact

The project would comply with all federal, State, and local statutes and regulations related to solid waste. No impact would occur.

XIX. Mandatory Findings of Significance		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

3.2.19 CEQA Significance Determinations for Mandatory Findings of Significance

a) Less Than Significant With Mitigation Incorporated

The project is located in a rural environment along an existing 6.1-mile section of SR 70. Implementation of the mitigation measures recommended in this Initial Study would ensure that the construction and operation of the proposed project would not reduce the habitat, population, or range of a plant or animal species; or eliminate important examples of California history or prehistory. Chapter 2, includes avoidance, minimization, and mitigation measures to minimize impacts to the Oroville Wildlife Area, oak woodlands, valley foothill riparian, wetlands, non-wetland waters, special-status plants, western spadefoot, Swainson's hawk, western pond turtle, northern harrier, white-tailed kite, western burrowing owl, loggerhead shrike, tricolored blackbird, bats, migratory birds, vernal pool branchiopods. Impacts would be less than significant after mitigation.

b) Less Than Significant

Cumulative impacts related to development accommodated by the County's General Plan were analyzed in the Butte County General Plan 2030 EIR (Butte County 2010). Although the project is not specifically called out in the General Plan, the project is consistent with the policies in the General Plan and would help the County achieve its level of service standard of "C" during the pm peak hour. The project is considered a project accommodated for in the General Plan.

Cumulative impacts related to development accommodated by the County's General Plan over the next 12+ years were found to be less than significant in the General Plan 2030 EIR, except for potential significant cumulative impacts related to agriculture, biological resources, GHG emissions, hydrology and water quality, land use, noise, and transportation and circulation (Butte County 2010: 2-4).

The cumulative impacts for agriculture, biological resources, GHG emissions, hydrology and water quality, land use, noise, and transportation and circulation were found to be significant due to the growth in population that would occur from future development projects. The General Plan 2030 EIR identifies the following:

- **Agriculture**. Development under General Plan 2030 would contribute to cumulative agricultural impacts.
- **Biological Resources**. Development allowed by General Plan 2030 would contribute to the on-going loss of undeveloped lands that support such sensitive biological resources in Butte County.
- **GHG Emissions**. The global increase in GHG emissions that has occurred and will occur in the future is the result of the actions and choices of individuals, businesses, local governments, states, and nations.
- **Hydrology and Water Quality**. As development proceeds within Butte County, impervious surfaces and the amount of pollutants will increase, thereby impacting surface and groundwater quality.
- **Land Use**. Inconsistencies between jurisdictions and the ALUCP would contribute to cumulative impacts.
- **Noise**. Cumulative development and growth would result in noise increases associated with the traffic increases.
- **Transportation and Circulation**. Cumulative development and growth would exacerbate existing deficiencies along State Routes 65, 70, and 99.

Although cumulative impacts on agriculture, biological resources, GHG emissions, hydrology and water quality, land use, noise, and transportation and circulation are potentially significant according to the General Plan 2030 EIR, the project's contribution to the cumulative impacts would be less than significant. As described in Impact II (a, e), only small portions of land adjacent to the roadway would be acquired, which would not preclude any parcels from continued farming operations. Because the project would not remove Important Farmlands from agricultural production, the project's contribution to a cumulative agricultural resources impact would be less than significant.

As described in Impact IV (a, b, c), impacts to special-status species, riparian areas and wetlands would be less than significant with implementation of mitigation measures. Because the project would not result in impacts to special-status species, riparian areas and wetlands, the project's contribution to cumulative biological resources impacts would be less than significant.

As described in Impact VII (a, b), long-term operation of the proposed project would increase CO_2 emissions slightly relative to existing conditions. Because the project would not substantially increase GHG emissions in the region, the project's contribution to a cumulative GHG emissions impact would be less than significant.

As described in Impact IX, potential impacts to water quality, depletion of groundwater, erosion, flooding, and polluted runoff were determined to be less than significant. Because the project would not have a significant impact on hydrology and water quality resources, the project's contribution to a cumulative hydrology and water quality impact would be less than significant.

As described in Impact X (a, b, c), the project would not physically divide a community, conflict with an applicable land use plan or policy, or a conservation plan. Because the project would not be inconsistent with any land use plan or policy, the project's contribution on a cumulative land use impact would be less than significant.

As described in Impact XII (a, c, d), the project would not exceed the threshold for a substantial increase in noise levels as defined by Caltrans (i.e., 12 dB above existing levels), and construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Because the project would not substantially increase noise during construction and operation, the project's contribution to a cumulative noise impact would be less than significant.

As described in Impact XVI (b), the project would improve level of service along the 6.1-mile section of SR 70 and all study intersections would operate at acceptable levels of service during both the morning and evening peak hours. Because the project would improve level of service on SR 70, the project's contribution to a cumulative traffic impact would be beneficial.

c) Less Than Significant With Mitigation Incorporated

As described in this document, the implementation of the proposed project could result in impacts to aesthetics, air quality, and hazards; however, implementation of the mitigation measures recommended in this document would ensure that the proposed project would not result in environmental effects that would cause substantial adverse effects on human beings. Impacts would be less than significant after mitigation.

3.3 References Cited

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Chapter 4
List of Preparers

4.1 Caltrans

This document was prepared by the following Caltrans North Region staff:

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Appendix A
Relocation Assistance Program

A.1 California Department of Transportation Relocation Assistance Program

A.1.1 Relocation Assistance Advisory Services

This appendix is general in nature and is not intended to be a complete statement of federal and state relocation laws and regulations. Any questions about relocation should be addressed to Caltrans Right-of-Way. This section provides some general descriptive information on Public Law (PL) 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. This is often referred to simply as the "Uniform Act." The information in this appendix is provided only as background and is not intended as a complete statement of all the state or federal laws and regulations; for specific details, the environmental planner should contact the appropriate Caltrans District or Regional Right-of-Way Relocation Branch. After presenting an outline of the basic legal foundation for relocation policy, the appendix looks at important relocation assistance information, including advisory services and the payment program. Refer to the Caltrans Right-of-Way Manual Chapter 10, for more detailed and specific information on relocation and housing programs.

A.1.1.1 Declaration of Policy

"The purpose of this title is to establish a ***uniform policy for fair and equitable treatment*** of persons displaced as a result of federal and federally assisted programs in order that such persons ***shall not suffer disproportionate injuries*** as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations (CFR) Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

A.1.1.2 Fair Housing

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to

provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

A.1.1.3 Relocation Assistance Advisory Services

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are "decent, safe and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans.

A.1.1.4 Residential Relocation Payments

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum combination of these three supplemental payments that the owner-occupant can receive is $22,500. If the total entitlement (without the moving payments) is in excess of $22,500, the Last Resort Housing Program will be used (see the explanation of the Last Resort Housing Program below).

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by Caltrans prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when Caltrans determines that the cost to rent a comparable "decent, safe and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. The maximum amount payable to any eligible tenant and any owner-occupant of less than 180 days, in addition to moving expenses, is $5,250. If the total entitlement for rent supplement exceeds $5,250, the Last Resort Housing Program will be used.

To receive any relocation benefits, the displaced person must buy or rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 180 days and tenants in legal occupancy prior to Caltrans' initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of $5,250. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the $22,500 and $5,250 limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.
- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

A.1.1.5 Nonresidential Relocation Assistance

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the right-of-way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $20,000.

A.1.1.6 Additional Information

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, ***except*** for any federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization that has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from Caltrans Right-of-Way. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Include as applicable:

Residential Relocation Payments Program

The links below are to the Relocation Assistance for Residential Relocation Brochure. Print them and place them in the environmental document as applicable.

- http://www.dot.ca.gov/hq/row/pubs/residential_english.pdf
- http://www.dot.ca.gov/hq/row/pubs/residential_spanish.pdf

If the project requires relocation of mobile homes, print and include the following:

- http://www.dot.ca.gov/hq/row/pubs/mobile_eng.pdf
- http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf

The Business and Farm Relocation Assistance Program

If the project requires relocation of businesses and/or farms, print and include the following:

- http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf
- http://www.dot.ca.gov/hq/row/pubs/business_sp.pdf

Appendix B
Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

Flex your power!
Be energy efficient!

March 2013

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

Appendix C

Noise Modeling Results

NOISE MEASUREMENT SITE INFORMATION SHEET

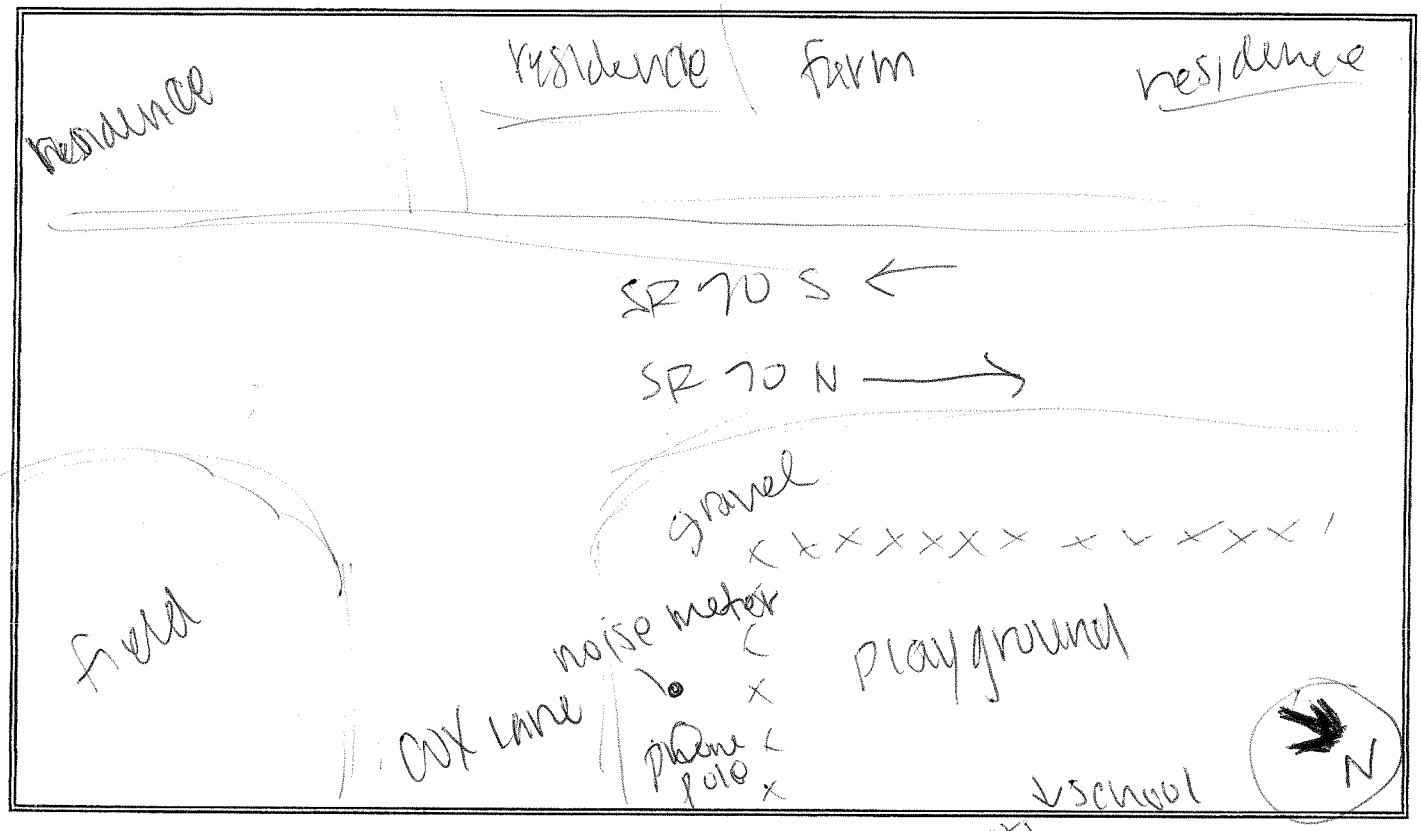
Jones & Stokes

PROJECT NAME: SR 70 PROJECT #:

SITE NUMBER: M01 DATE/TIME:

LOCATION/ADDRESS: SR 70 & Cox Lane ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

62.3°F, 4.7mph NW, sunny & clear, 48.2% breezy up to 9mph

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LTX

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SR 70 N	112	4	17	[illegible] 65mph		
SR 70 S	88	6	12			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 70 PROJECT #:

SITE NUMBER: M01 DATE/TIME: 10/29/2015 10:25A

LOCATION/ADDRESS: ENGINEERS:

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							Leq 64.2
15							Lmax 79.7
16							Lmin 44.6
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

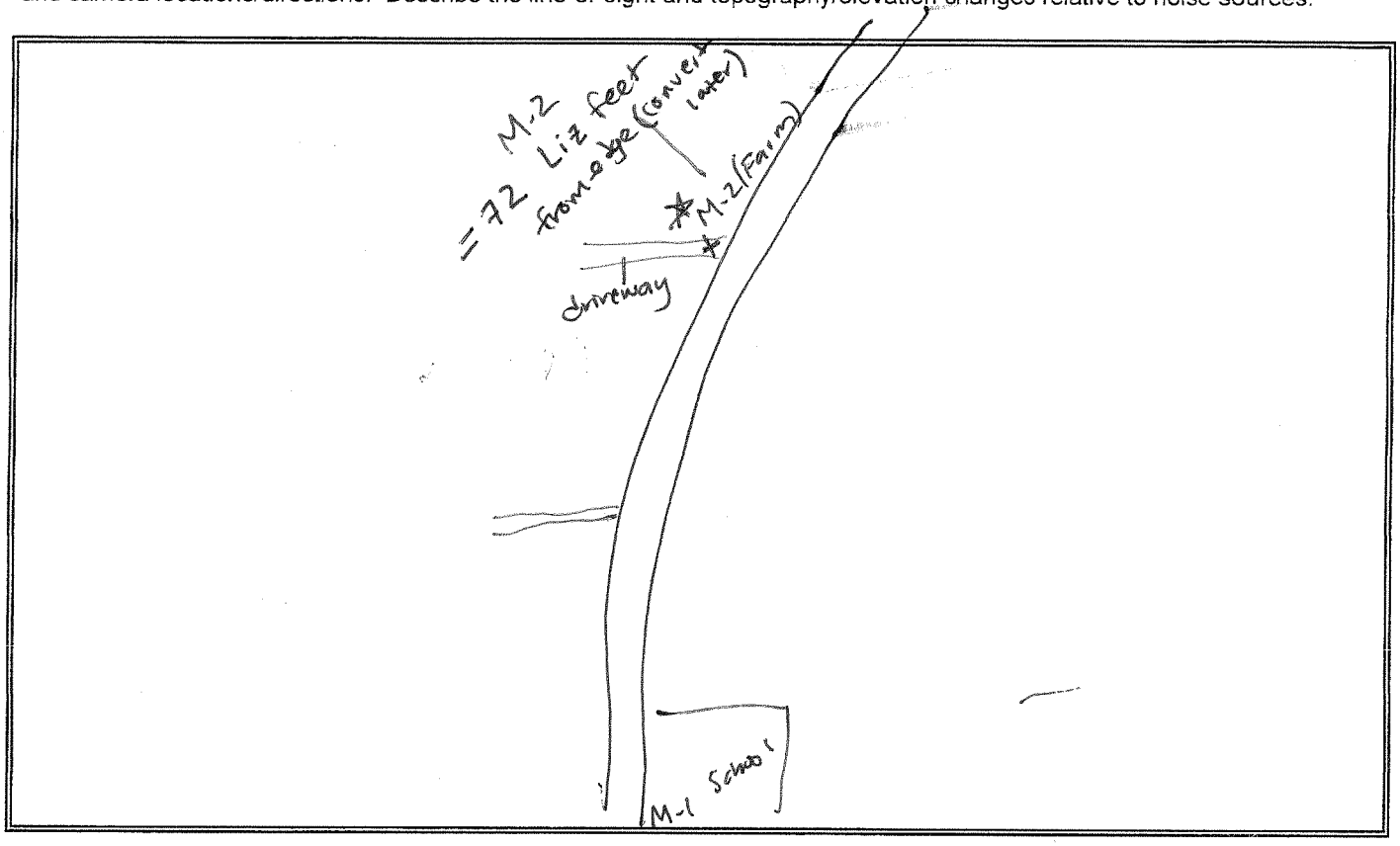
Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-2 DATE/TIME: 10/29/15 - 10:30

LOCATION/ADDRESS: near farm/orchard ENGINEERS: Liz & Cory

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

See M-1

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 COMMENTS: Many loud trucks, slight sprinkler background noise

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SB	88	6	12	65		
NB	112	4	17	65		

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-2 DATE/TIME: 10/29/15 – 1030 AM

LOCATION/ADDRESS: Farm ENGINEERS: Liz & Cory

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						minor sprinkler noise in background throughout
2	0:01						
3	0:02						
4	0:03						
5	0:04						
6	0:05						
7	0:06						
8	0:07						
9	0:08						
10	0:09						
11	0:10						
12	0:11						
13	0:12						
14	0:13						
15	0:44			SB TOTALS			
16				88	6	12	
17				NB			
18				112	4	17	
19							
20							

Leq	66.3
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 66.3 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

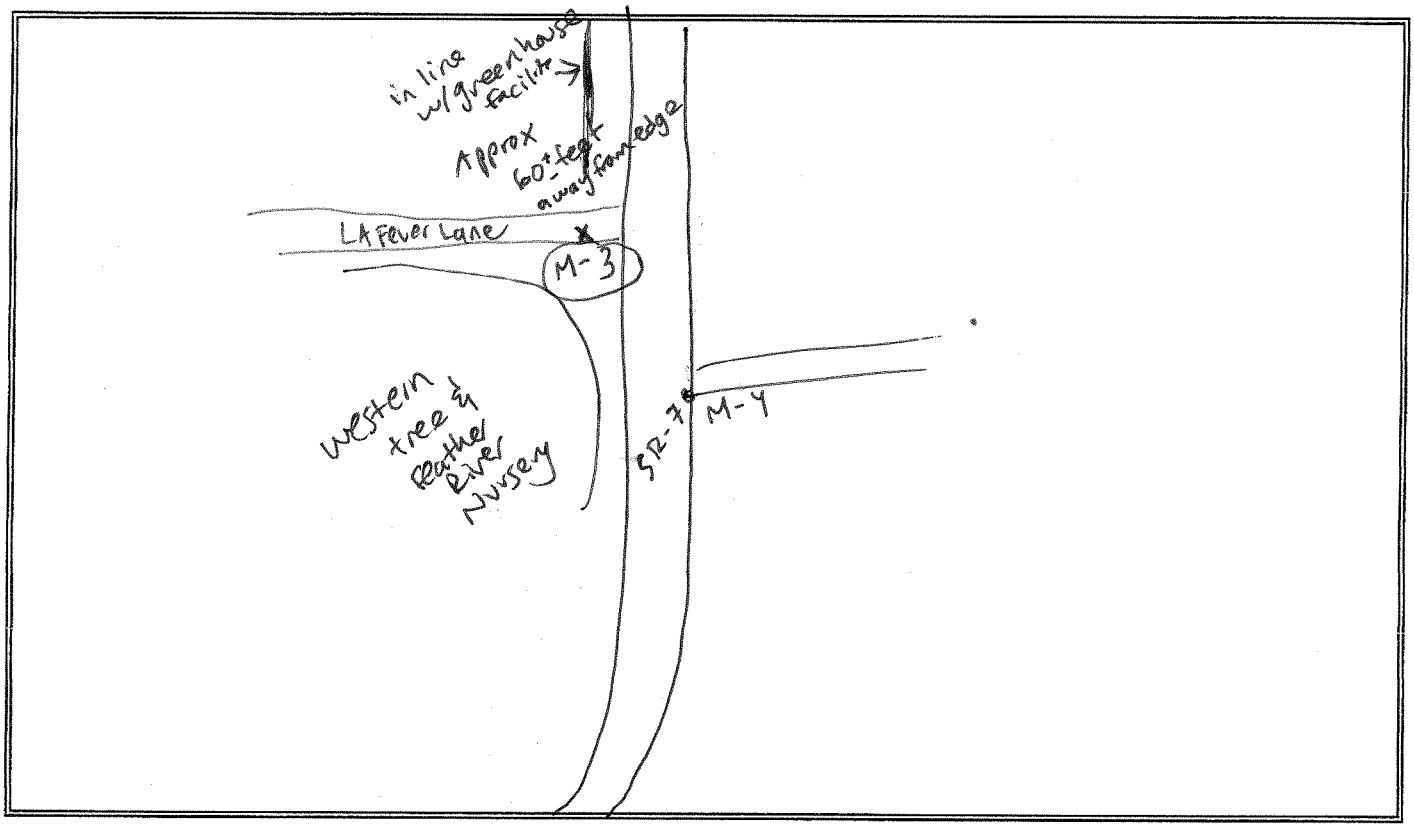
Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-3 DATE/TIME: 10/29/15 ~~12:30~~ 11:20

LOCATION/ADDRESS: Western Tree & Feather River wholesale Nursery ENGINEERS: Liz Scott & Cory Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

See M-4

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SB	102	4	16	65		
NB	80	9	11			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-3 DATE/TIME: 10/29/15

LOCATION/ADDRESS: Western Tree & Feather River Wholesale nursery ENGINEERS: Liz Scott & Cory Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						Voices talking at a distance @ 50sec
2	0:01						
3	0:02						
4	0:03						light engine idling in nearby greenhouse
5	0:04			•			↑ car driving by on farm/nursery property
6	0:05						↓ very slowly (~4:30 - 5:30)
7	0:06						
8	0:07						*7:40 2 cars drove right by on gravel driveway
9	0:08						8:30
10	0:09						*9:40
11	0:10						Heavy Peaskoy truck drove right by on gravel. 10:10 *10:50 - Truck started on nurseries
12	0:11						*11:20 tractor starts
13	0:12						*11:40 Truck drives by on gravel 11:55
14	0:13						
15	0:14			totals			
16				102	4	16	
17							
18							
19							
20							

Leq	66.1
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 66.1 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

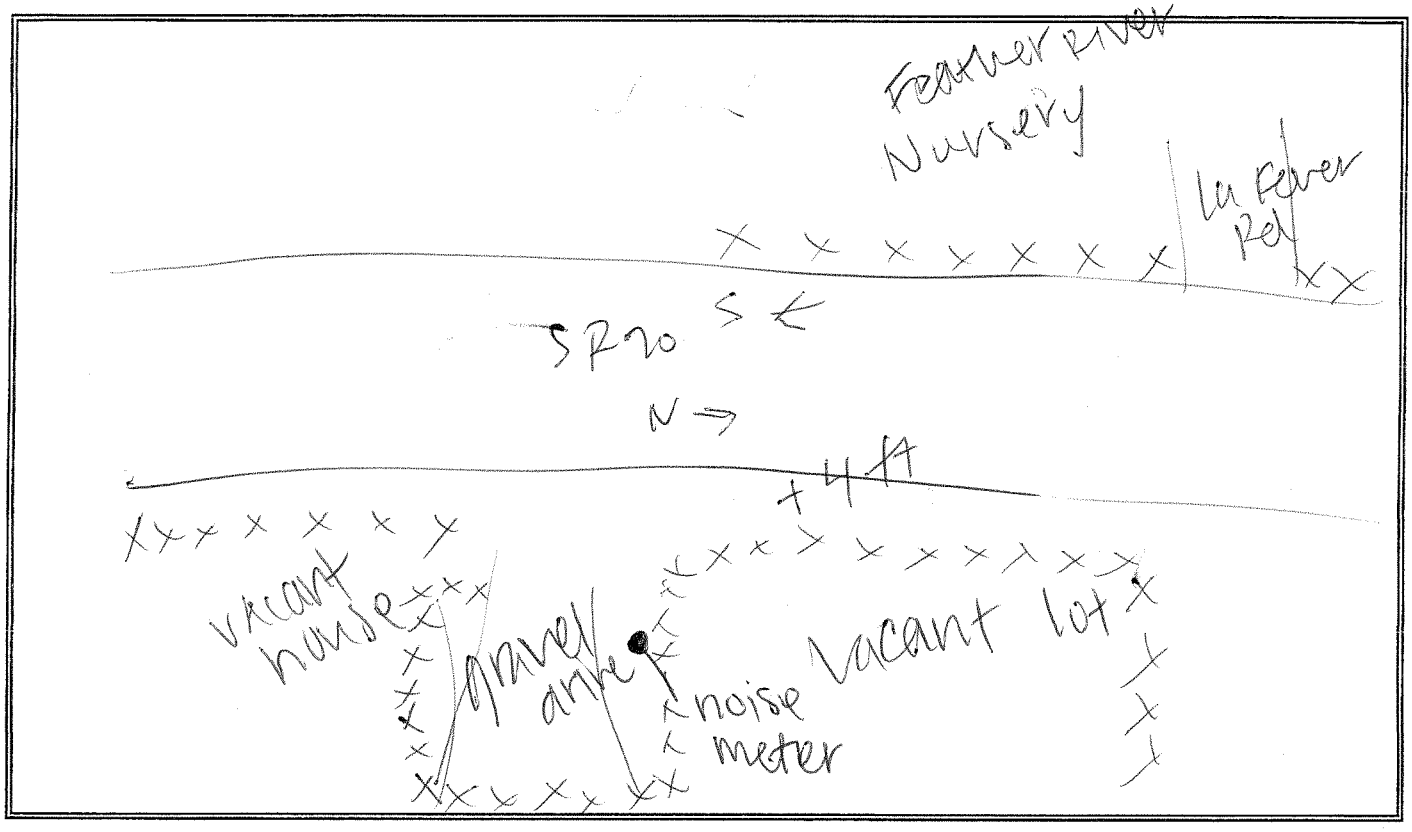
Jones & Stokes

PROJECT NAME: SR70 PROJECT #:

SITE NUMBER: MD4 DATE/TIME:

LOCATION/ADDRESS: 2492-2500 SR70, Gridley ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

gusts up to 9mph

69.0°F, 4.6 mph NW, Sunny+clear, 54.0%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LTX

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SR70 N	80	9	11	65		
SR70 S	102	4	16			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR70 PROJECT #:

SITE NUMBER: M04 DATE/TIME: 10/29/15 11:15A

LOCATION/ADDRESS: 2442-2500 SR70, Gridley, CA ENGINEERS:

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							Leq 66.7
15							Lmax 91.3
16							Lmin 42.0
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

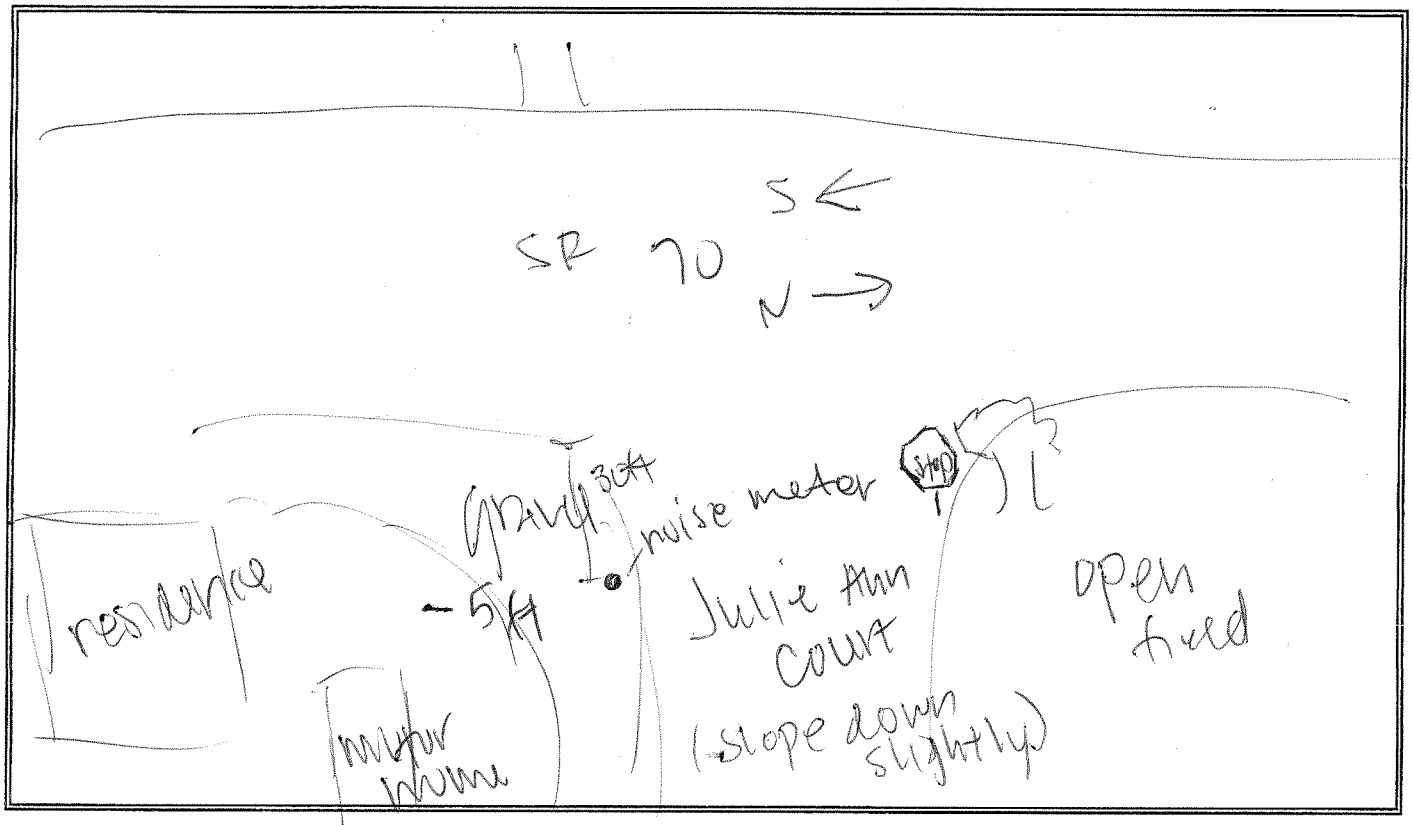
Jones & Stokes

PROJECT NAME: _____ PROJECT #: _____

SITE NUMBER: _____ DATE/TIME: _____

LOCATION/ADDRESS: _____ ENGINEERS: _____

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

71.7°F, 3.1 mph NW (gusts up to 8 mph), sunny & clear, 45.1%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LTX

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) _____

POSTED SPEED: _____ COMMENTS: _____

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SR 70 N	100	2	7	65		
SR 70 S						

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 70 PROJECT #:

SITE NUMBER: M05 DATE/TIME: 10/29/15 12PM

LOCATION/ADDRESS: Julie Ann Ct/SR 70 ENGINEERS:

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							neighbour's music across SR 70
3							running engine
4							
5							
6							
7							
8							
9							dogs barking
10							
11							
12							
13							
14							neighbor across SR 70 engine revving
15							
16							
17							
18							
19							
20							

Leq	65.8
Lmax	79.9
Lmin	43.9
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

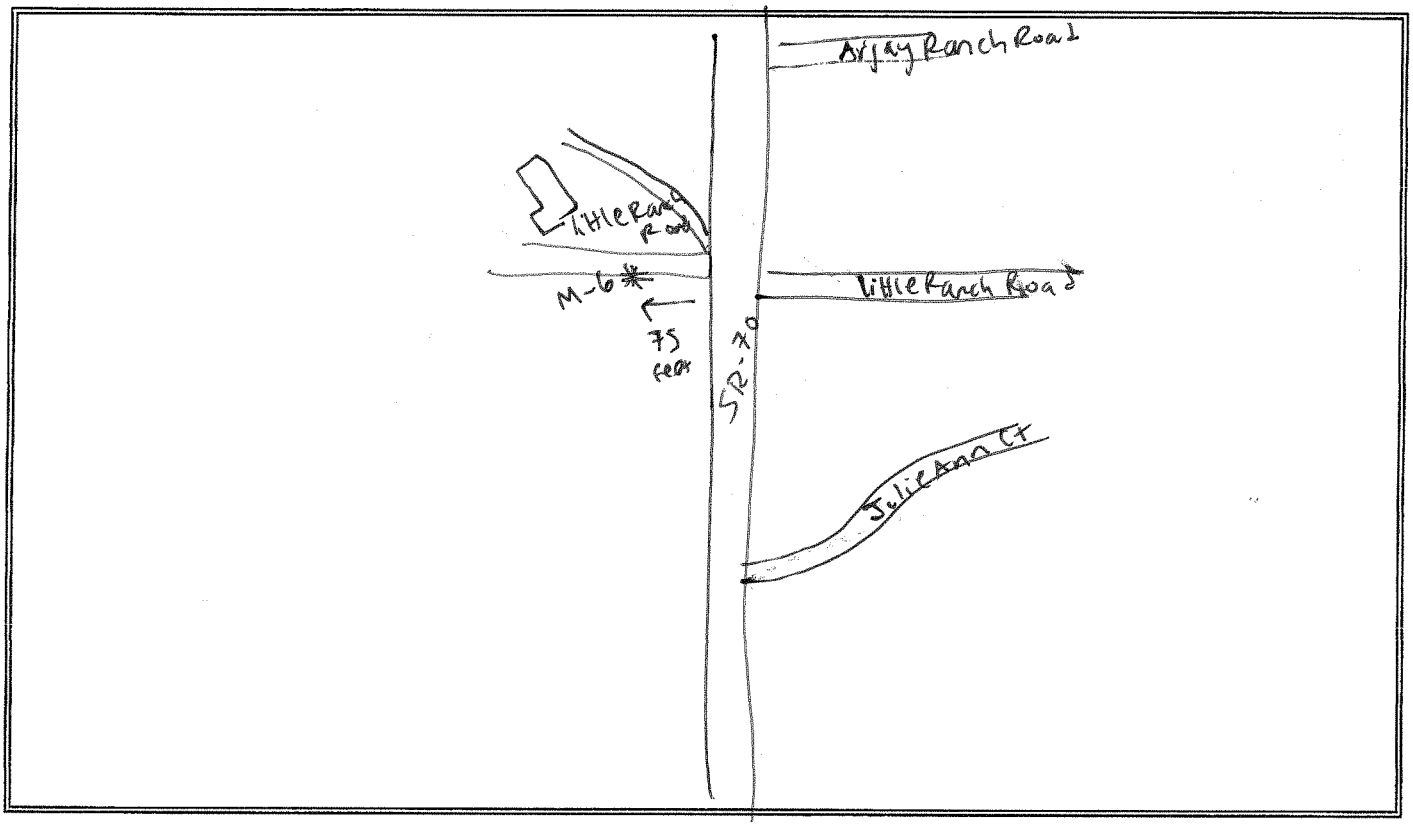
Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-6 DATE/TIME:

LOCATION/ADDRESS: 36 little Ranch Road ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

See M-5

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Bus	Speed	Start Time	Duration
SB SR-70	107	6	5	1	65		
					65		

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70
SITE NUMBER: M-6
LOCATION/ADDRESS:

PROJECT #:
DATE/TIME: 10/29/15 - 12:07
ENGINEERS: Liz Scott & Cory Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						
2	0:01						
3	0:02						2:15 - 2:25 car drove by on gravel Road
4	0:03						- 3:05 - Liz sneezed
5	0:04						
6	0:05						
7	0:06						
8	0:07						
9	0:08						- 8:50 - 9:10 very loud Fedex van driver drove right by on gravel
10	0:09						- 9:30 - 10:00 voice talking on driveway
11	0:10						- 10:42 car door slammed
12	0:11						11:00 - 11:30 - metal dragging on gravel 11:35 - 11:55 - Fedex van drove by
13	0:12						12:20 - Fedex on gravel on gravel
14	0:13						13:30 - 13:50 intermittent chicken noises
15	0:14			Cars	Total MT	Ht	Bus
16				107	6	5	1
17							
18							
19							
20							

Leq	63.5
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 63.5 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

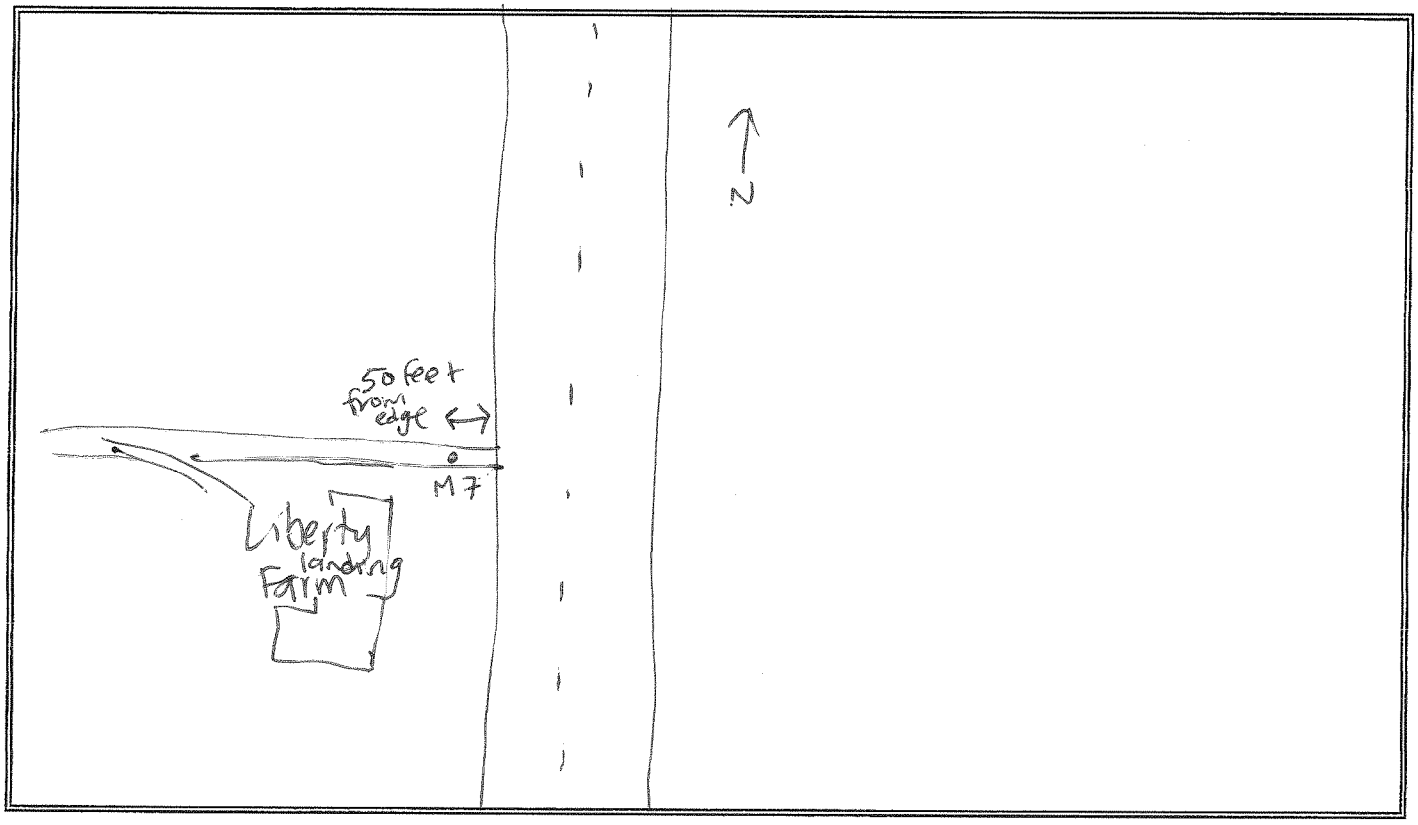
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: SR-70 widening
PROJECT #:
SITE NUMBER: M7
DATE/TIME: 12/15 @ 9:00 AM
LOCATION/ADDRESS: Liberty Farm
ENGINEERS: Liz Scott & Covy Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

42°F, 3.5 mph, 64% relative humidity, clear sky

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD 831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS: Cars Traveling 55-60

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
NB SR 70	98	2	6			
SB SR 70	89	3	9			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 widdening
PROJECT #:
SITE NUMBER: M7
DATE/TIME: 12/15 9:10 AM
LOCATION/ADDRESS: Liberty Landing Farm
ENGINEERS: Liz Scott & Cory M.

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						
2	0:01						Rooster in distance
3	0:02						
4	0:03						
5	0:04						
6	0:05						
7	0:06						
8	0:07						↑ little bird chirps throughout (more noticible this minute) ↓
9	0:08						
10	0:09						
11	0:10						loud beeping around minute 10:00
12	0:11						
13	0:12						
14	0:13						
15	0:14						
16				Auto	MT	HT	
17		NB:		98	02	06	
18		SB:		89	03	09	
19							
20							

Leq	69.2
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 69.2 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

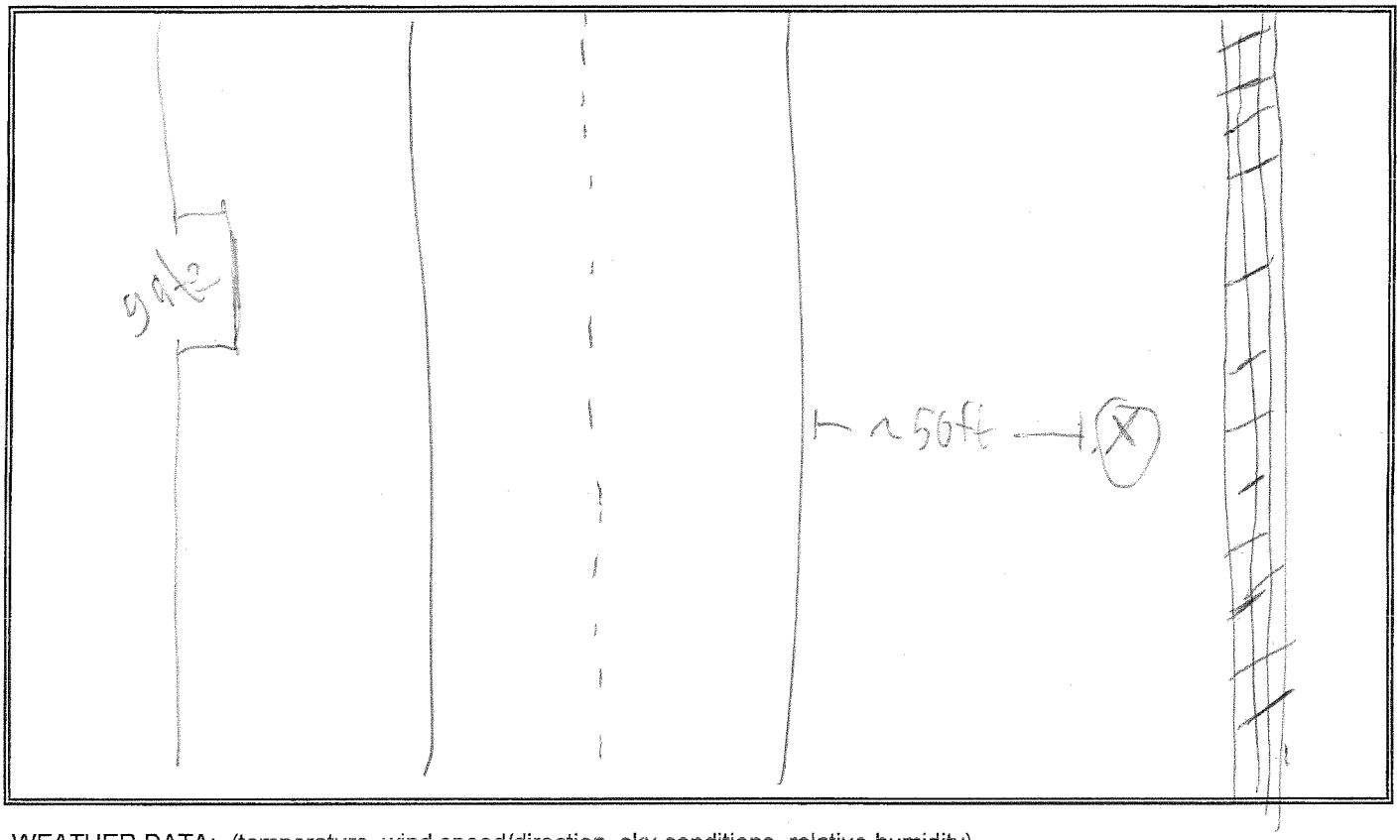
Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: 7A DATE/TIME: 12/15/15

LOCATION/ADDRESS: ENGINEERS: Cory Matsui Liz Scott

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

45°F, 4 mph, clear, 57%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

831, 114.0

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 6 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Mid	Speed	Start Time	Duration
SR 70 NB	86	2	6				
SR 70 SB	71	3	9	2	55-60	9:55	15 min

Bus 1

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: 7A DATE/TIME: 12/15/15

LOCATION/ADDRESS: ENGINEERS: Cory Matsui & Liz Scott

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							Leq 69.8
15							Lmax
16							Lmin
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

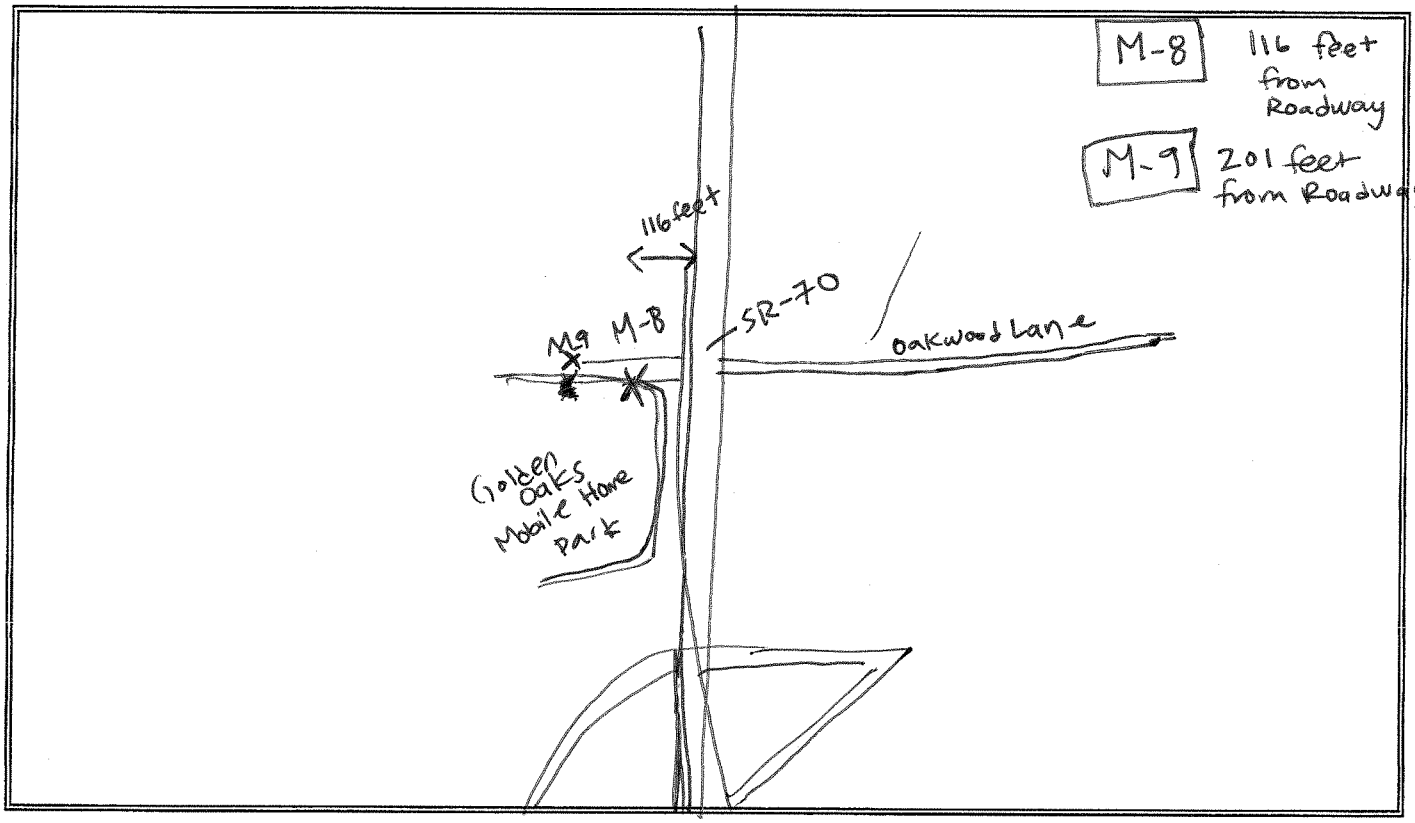
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: SR-70
PROJECT #:
SITE NUMBER: M-8
DATE/TIME: 10/29 ~3:45 approx
LOCATION/ADDRESS: Mobile Home Lot
ENGINEERS: Liz Scott & Cory Mabry

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

see M-9

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	motor	Speed	Bus	Start Time	Duration
SB SR70	159	9	6	2		2		
NB SR-70	149	9	9	1	65mph			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-8 DATE/TIME: 10/29 ~ 3:55

LOCATION/ADDRESS: Mobile home ENGINEERS: Liz Scott & Cory Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						Wind Rustling leaves = slight increase in ambient noise
2	0:01						1:35 - 1:50 glass bottles clanking
3	0:02						2:42 - bottles clanking
4	0:03						3:20-3:40 - Truck drove by close on gravel
5	0:04						Childs whistle, bottles clanking ~ 4:20-4:30
6	0:05						
7	0:06						
8	0:07						
9	0:08						
10	0:09						Motorcycle revving in distance @ ~9:30
11	0:10						10:40-10:55 Truck drove by real close
12	0:11						
13	0:12						
14	0:13						
15	0:14						door slam at 14:40
16							
17							
18							
19							
20							

Leq	62.5
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 62.5 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: SR 70 PROJECT #:

SITE NUMBER: M09 DATE/TIME:

LOCATION/ADDRESS: ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.

WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

→ west/NW

3-6 mph winds, 77°F, 35% H, sunny & clear

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LXT

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SR 70 N	149	9	9	65	1 moto	
SR 70 S	159	9	6		2 moto + 2 bus	

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 70 PROJECT #:

SITE NUMBER: MP 9 DATE/TIME:

LOCATION/ADDRESS: Garden Oaks Mobile Home Park ENGINEERS:

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							Residents talking & sorting glass + plastic recyclables
2							
3							
4							• Car exiting park + kid blowing whistle whistle
5							
6							
7							
8							
9							
10							• Car driving into park slowly
11							
12							
13							
14							Leq 55.7
15							Lmax 63.4
16							Lmin 43.9
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

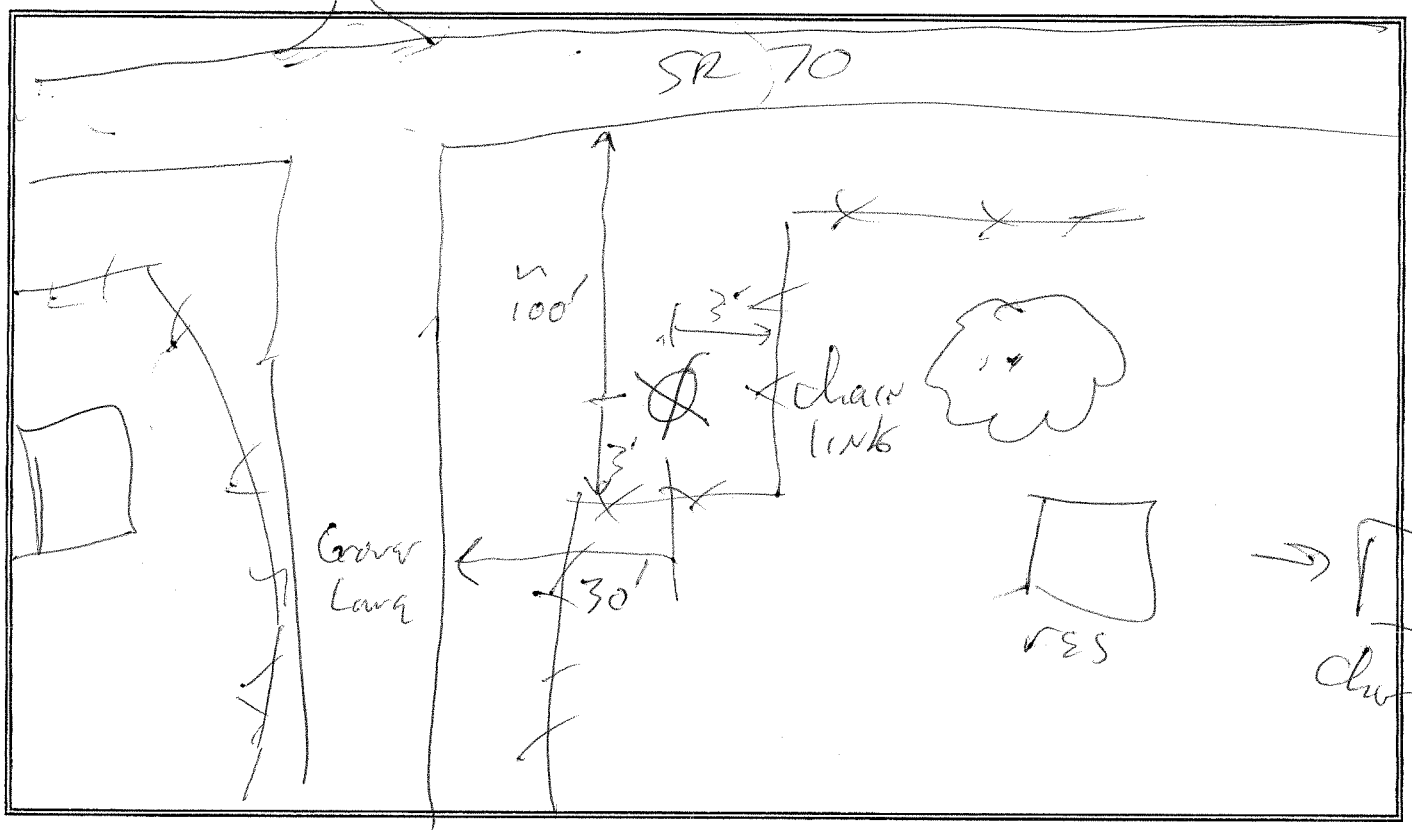
Jones & Stokes

PROJECT NAME: SR 70 PROJECT #:

SITE NUMBER: M10 DATE/TIME: 10/22/15 3:10p

LOCATION/ADDRESS: Grover Lane & SR 70 ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

60°F, Wind from NW. 35% Wind 5-10 mph gust 14 mph.

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LXT

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
Northbound	125	4	7	55-65		
& Grover	1					
south	159	6	7			
			2 motor	1 bus		

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: _____ PROJECT #: _____

SITE NUMBER: _____ DATE/TIME: _____

LOCATION/ADDRESS: _____ ENGINEERS: _____

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1		64.0					SR 70.
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							Leq
15							Lmax
16							Lmin
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

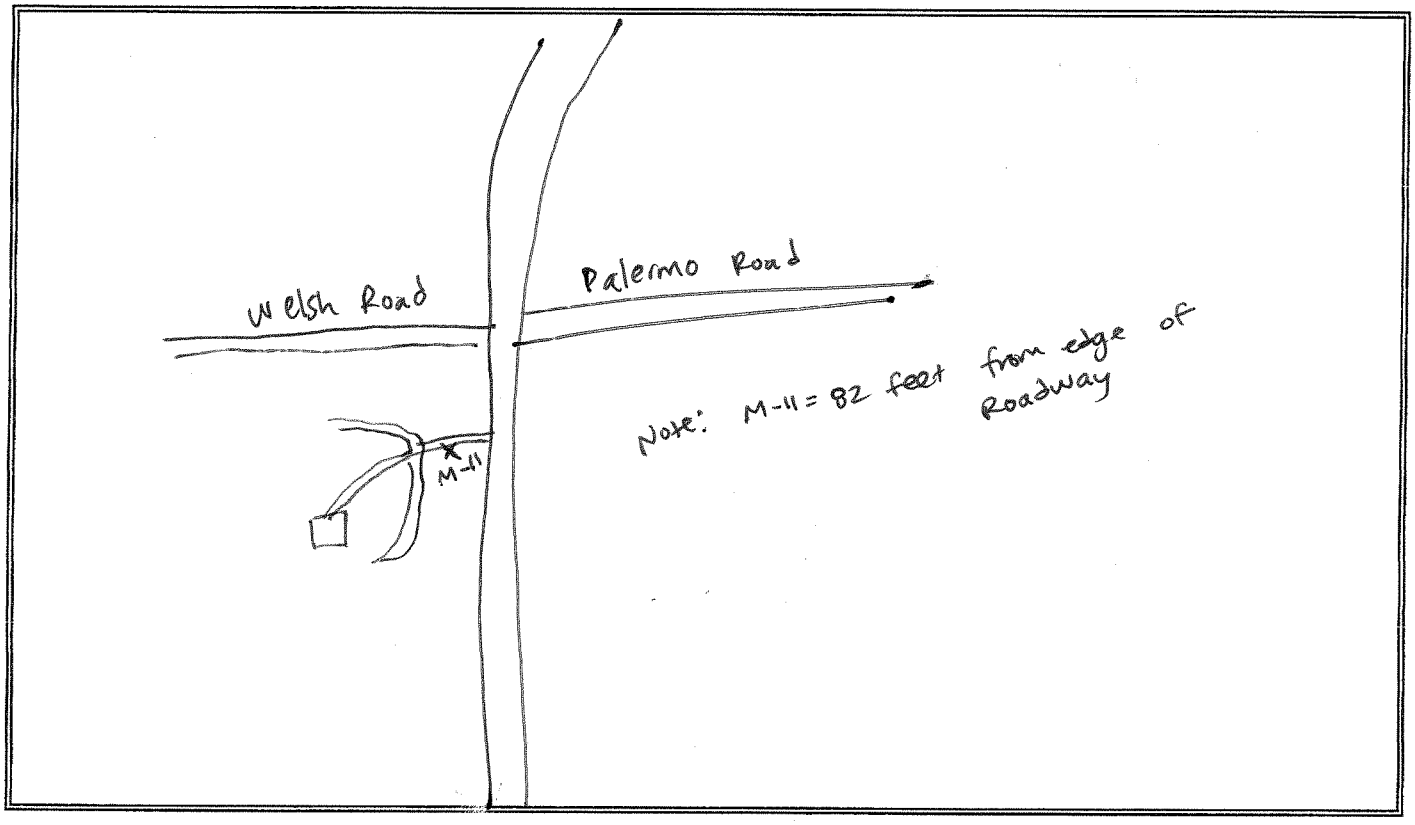
Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-11 DATE/TIME: 10/29 3:08

LOCATION/ADDRESS: near 3455 CA-70, Oroville ENGINEERS: Liz Scott & Cory Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

See M-10

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy (Motor / 3axl)	Speed	Start Time	Duration
SB SR-70	159	6	7 / 2 / 1	65	4pm	
NB SR-70	125	4	7			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-11 DATE/TIME: 10/29 ~3:10pm

LOCATION/ADDRESS: ENGINEERS: Liz Scott & Cory Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						
2	0:01						
3	0:02						
4	0:03						
5	0:04						higher winds Rushed nearby tree leaves (slightly louder than ambient)
6	0:05						
7	0:06						
8	0:07						
9	0:08						loudish car music 8:50 ↓ across the street 9:15
10	0:09						
11	0:10						
12	0:11						
13	0:12						
14	0:13						13:50 wind Rushed leaves
15	0:14						1435 Bus engine starting slightly
16							
17							
18							
19							
20							

LDA Totals	MT	HT	M	B
159	6	7	2	1

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: SR-70 widening

PROJECT #:

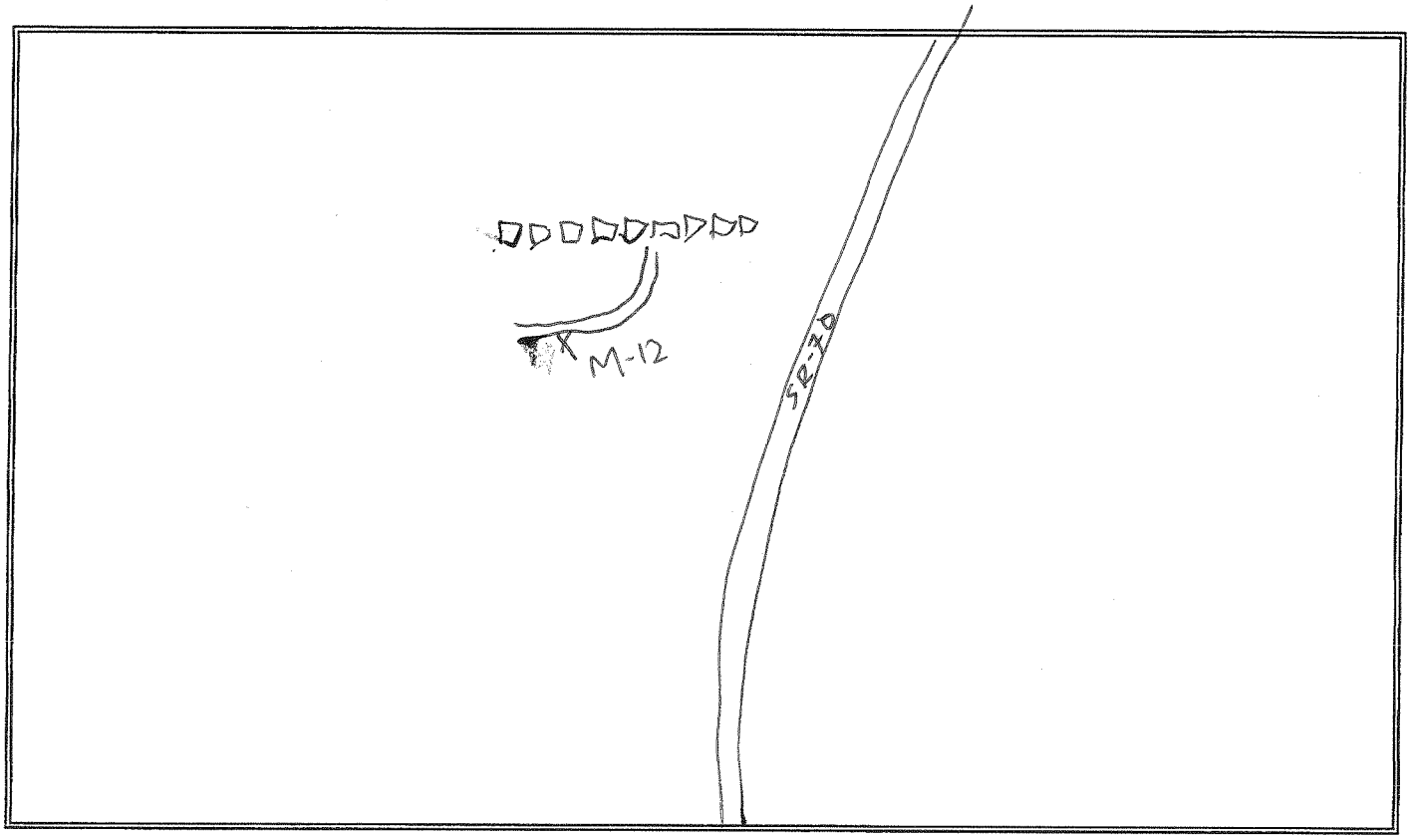
SITE NUMBER: M12

DATE/TIME:

LOCATION/ADDRESS: Vineyard

ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

47°F, 56% Humidity, clear skies, 3 mph wind SE

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD 831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
NB	85	6	12			
SB	90	9	7			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 70 widening
SITE NUMBER: M12
LOCATION/ADDRESS:

PROJECT #:
DATE/TIME: 12/15/2015 ~10:30
ENGINEERS: Liz Scott & Cory Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							Dog barking in distance, not very loud
3							
4							
5							Horse drinking water
6							close by (& splashing in water)
7							
8							- neighing very close, ~~but~~ quietly - Horse chewing quietly
9							
10							
11							
12	0:11						
13	0:12						12:45 horse waiting in water intermittently
14	0:13						13:40
15	0:14						
16							
17							
18							
19							
20							

Leq	46.8
Lmax	
Lmin	
L10	
L33	
L50	
L90	

	AUTO	MT	HT
NB: 85	6	12
90	9	7

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 46.8 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: SR-70

SITE NUMBER: M13

LOCATION/ADDRESS:

PROJECT #:

DATE/TIME: 12/15/15

ENGINEERS: Cory Matsui & Liz Scott

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.

WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

52°F, 4.6mph, clear, 66%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD 831, 114.0

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SB (SR70)	80	1	5	55-60		
NB (SR 70)	86	5	8	55-60		

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: DATE/TIME: 12/15/15

LOCATION/ADDRESS: ENGINEERS: Cory Matsui & LTZ

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								Leq 69.9
15								Lmax
16								Lmin
17								L10
18								L33
19								L50
20								L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

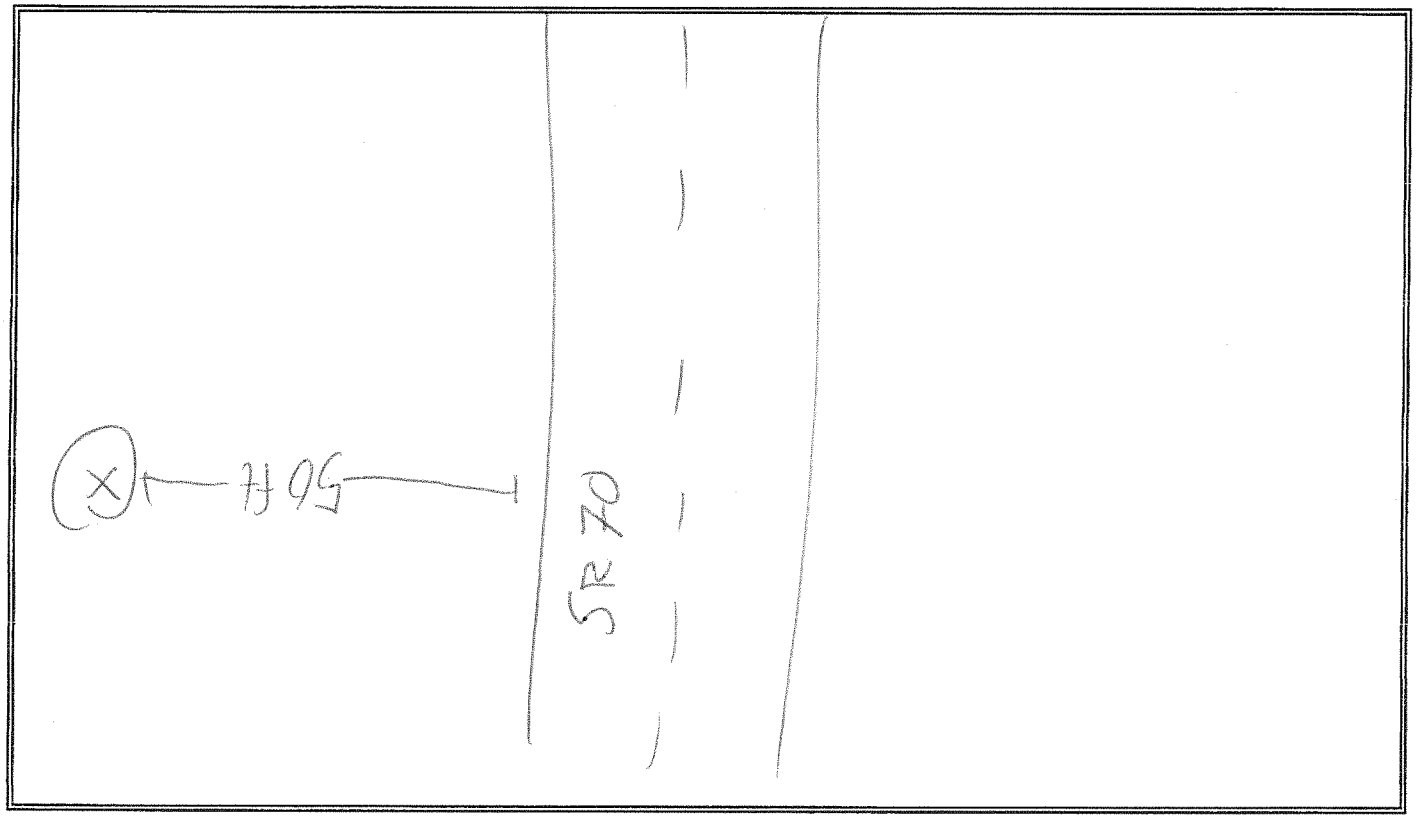
Jones & Stokes

PROJECT NAME: SR-70 | PROJECT #: 1

SITE NUMBER: M14 | DATE/TIME: 12/15 3:10

LOCATION/ADDRESS: 70 But R10 50 (marker | ENGINEERS: Cory Matsui & Liz Scott

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

53° F, ~~4~~ 2.5 mph, clear 49%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD 831 114.0S

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: ~50-55? COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SR 70 NB	109	5	2			
SR 70 SB	133	6	2			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70

PROJECT #:

SITE NUMBER: M14

DATE/TIME: 12/15 3:10

LOCATION/ADDRESS:

ENGINEERS: Cory Mayse & Liz Scott

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Leq	67.3
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

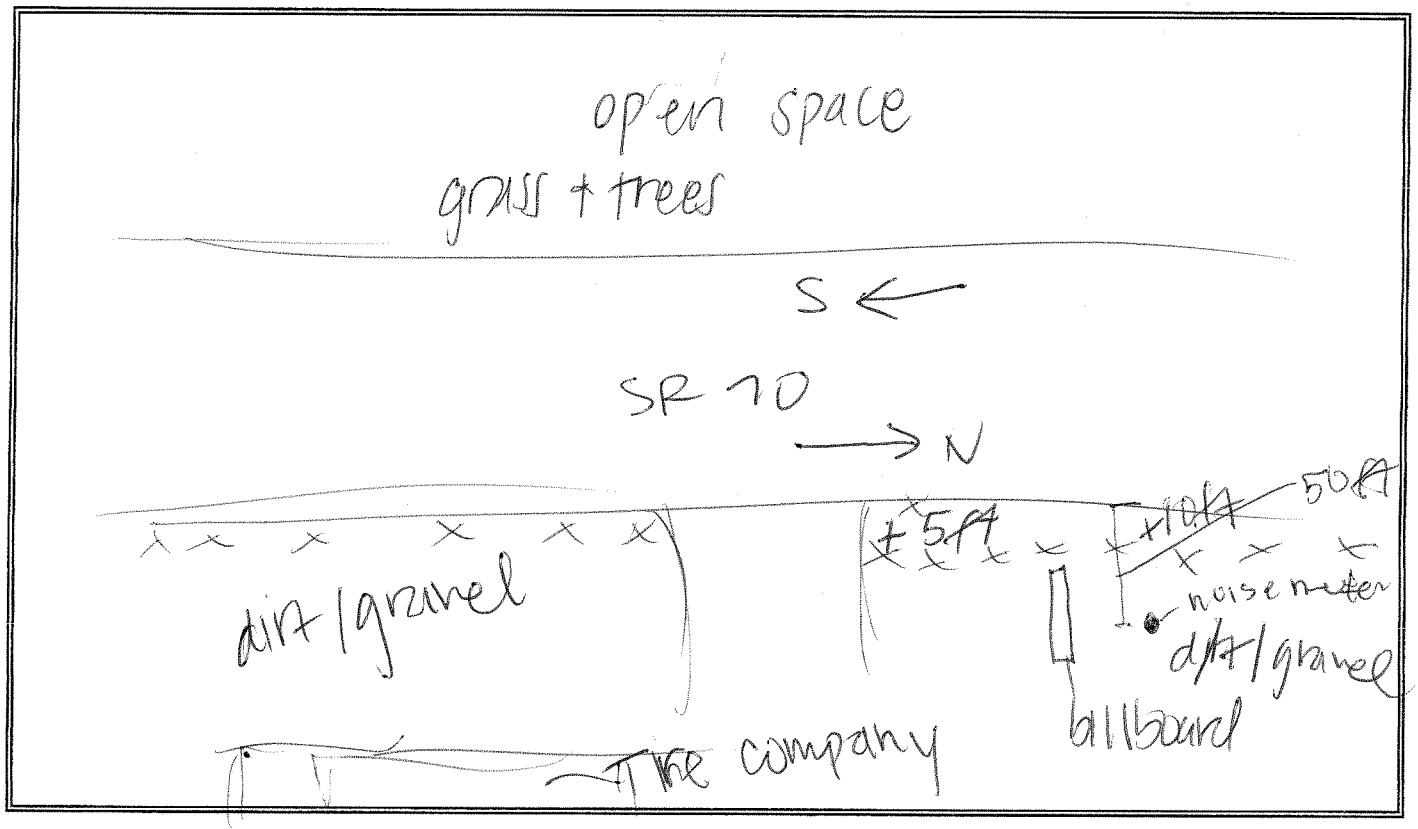
Jones & Stokes

PROJECT NAME: SR 70 | PROJECT #:

SITE NUMBER: M15 | DATE/TIME: 10/29/15 2:30PM

LOCATION/ADDRESS: 4298 SR 70 | ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

75.6° F, 3.5 mph W (gusts up to 11.5 mph), sunny & clear, 34.2%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LXT

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
SR 70 N	109	3	13	65		
SR 70 S	124	8	11			
			SR 70 S photo			

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: _____ PROJECT #: _____

SITE NUMBER: _____ DATE/TIME: _____

LOCATION/ADDRESS: _____ ENGINEERS: _____

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							Leq 65.5
15							Lmax 74.5
16							Lmin 43.1
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

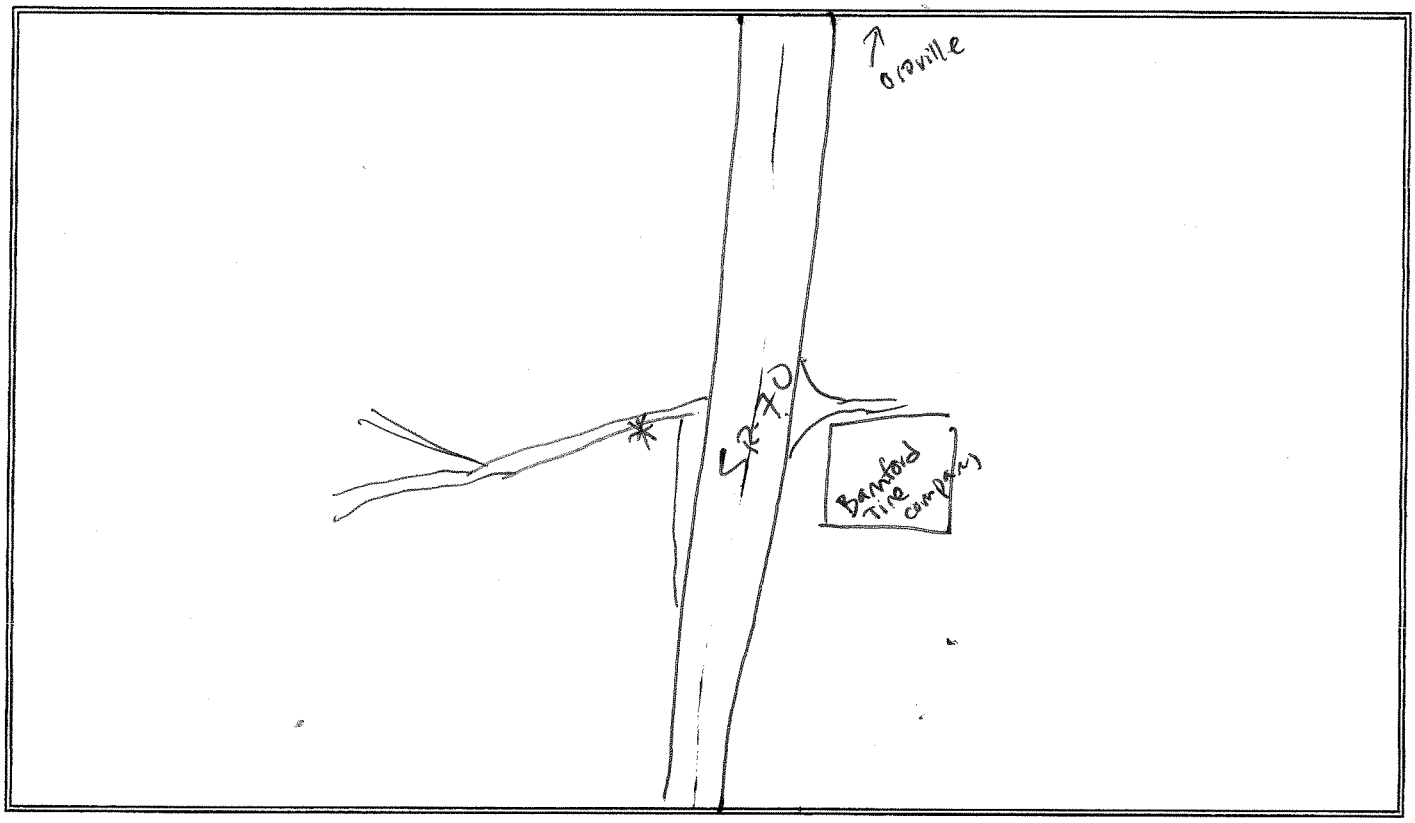
Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-16 DATE/TIME: 10/29/15 – 2:30 ish

LOCATION/ADDRESS: ENGINEERS:

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

See M-15

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	MOT's	Speed	Start Time	Duration
SB SR-70	124	8	11	1	65mph		
NB SR-70	109	3	13	0	65mph		

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 PROJECT #:

SITE NUMBER: M-16 DATE/TIME: 10/29 ~11:30 ish

LOCATION/ADDRESS: access from Bamford Tire Co. ENGINEERS: Liz Scott & Cory Mabu

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	0:00						
2	0:01						potentially light construction noise in far off distance, not very loud
3	0:02						
4	0:03						construction noise in distance - 48-49 dBA Lmax w/no cars driving by
5	0:04						
6	0:05						
7	0:06						
8	0:07						7:00 - This whole minute has louder const. activity - up to 58 Lmax
9	0:08						
10	0:09						
11	0:10						construction w/Lmax of 52 ↑ w/no traffic
12	0:11						
13	0:12						
14	0:13						
15	0:14			CDA	MT	HT	Moto
16				124	8	11	1
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

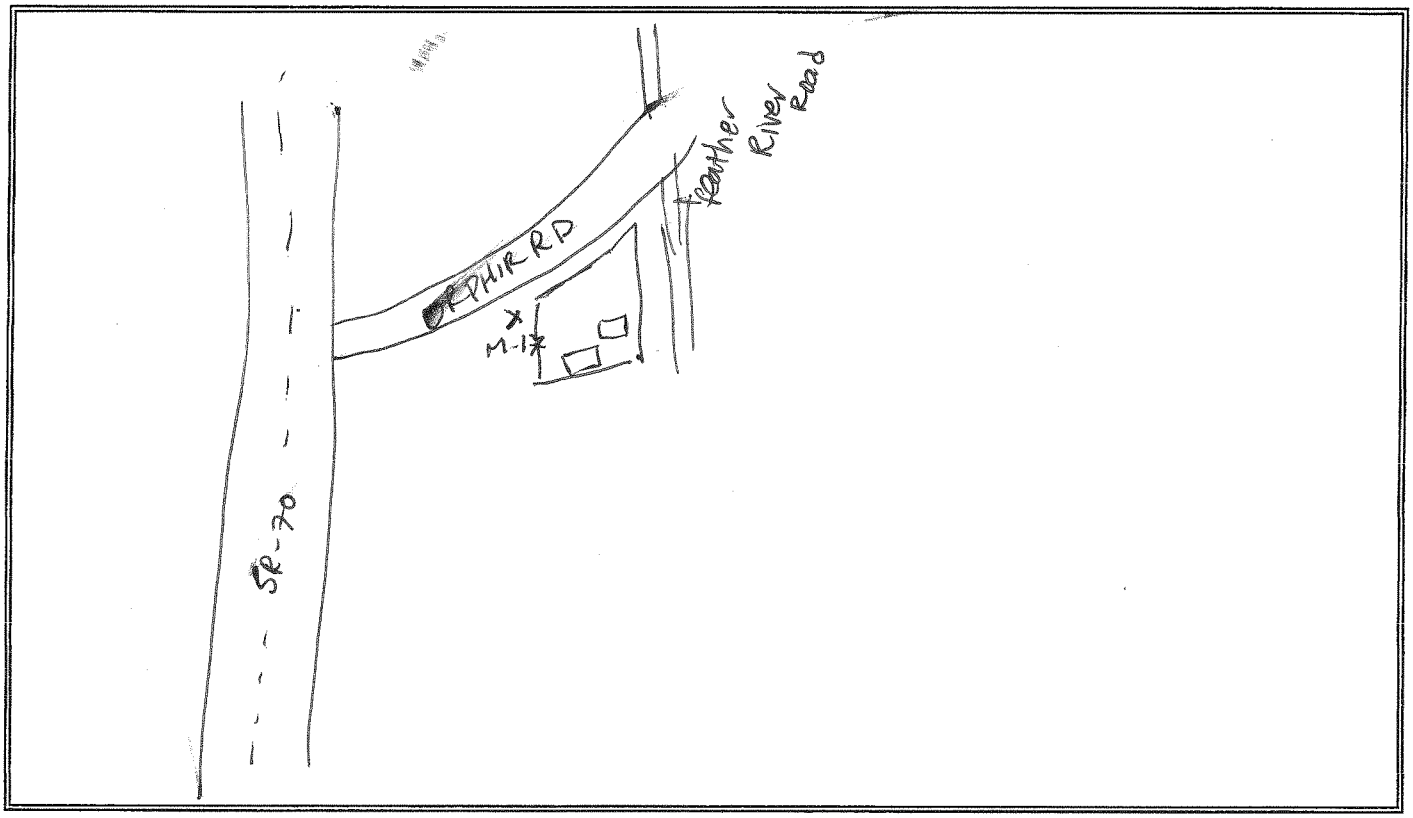
"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: SR-70 widening
PROJECT #:
SITE NUMBER: M-17
DATE/TIME: 12/15/2015 ~2:32 pm
LOCATION/ADDRESS:
ENGINEERS: Cory Matsui & Liz Scott

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

53.8 °F, 29.3% humidity, clear skies, 5.5 mph

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD-831

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: posted on orphir =55 COMMENTS:

TRAFFIC COUNTS: travel speed = 40 on orphir

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR-70 widening
PROJECT #:
SITE NUMBER: M-17
DATE/TIME: 12/15/15 ~2:35
LOCATION/ADDRESS: near Ophir Road & Feather River Rd.
ENGINEERS: Cory & Liz

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1							
2							
3		Video Counts					
4		for all Roadway segments					
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							Leq 67.4
15							Lmax
16							Lmin
17							L10
18							L33
19							L50
20							L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = 67.4 **dBA**

Subset Leq (Exclude "O" and "X" minutes) = **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Appendix D
Plant Species Observed

Scientific Name[a]	Common Name	Wetland Indicator Status[b]
Trees		
Ailanthus altissima	Tree of heaven	FACU
Eucalyptus camaldulensis	Red river gum	FAC
Juglans hindsii	Northern California black walnut	FAC
Morus alba	Mulberry	FACU
Pinus sabiniana	Gray pine	UPL
Populus deltoides	Cottonwood	FAC
Quercus douglasii	Blue oak	UPL
Quercus lobata	Valley oak	FACU
Quercus wislizeni	Interior live oak	UPL
Salix gooddingii	Gooding's willow	FACW
Salix lasiandra	Pacific willow	FACW
Salix lasiolepis	Arroyo willow	FACW
Shrubs		
Frangula californica	California coffeeberry	UPL
Nerium oleander	Oleander	UPL
Salix exigua	Sandbar willow	FACW
Sambucus nigra	Blue elderberry	FACU
Woody Vines		
Rubus armeniacus	Himalayan blackberry	FACU
Toxicodendron diversilobum	Poison-oak	UPL
Vitis californica	Wild grape	FACU
Forbs		
Achyrachaena mollis	Soft blow wives	FAC
Acmispon americanus	American bird’s foot trefoil	UPL
Alisma lanceolatum	Water plantain	OBL
Alisma triviale	Northern water plantain	OBL
Allium amplectens	Narrow leaved onion	UPL
Anagallis arvensis	Scarlet pimpernel	UPL
Anagallis minima	Chaffweed	UPL
Anthriscus caucalis	Bur chervil	UPL
Brodiaea nana	Dwarf brodiaea	UPL
Calandrinia ciliata	Red maids	FACU
Carduus pycnocephalus	Italian thistle	UPL
Castilleja attenuata	Narrow leaved owl's clover	UPL
Castilleja campestris	Yellow owl’s clover	FACW
Centaurea solstitialis	Yellow starthistle	UPL
Centromadia fitchii	Spikeweed	FACU

Scientific Name[a]	Common Name	Wetland Indicator Status[b]
Cerastium glomeratum	Large mouse ears	UPL
Chamaesyce maculata	Spotted spurge	UPL
Chlorogalum angustifolium	Narrow leaved soaproot	UPL
Cichorium intybus	Chickory	FACU
Clarkia purpurea ssp. *quadrivulnera*	Purple clarkia	UPL
Convolvulus arvensis	Field bindweed	UPL
Cotula coronopifolia	Brass buttons	OBL
Croton setiger	Turkey-mullein	UPL
Crucianella angustifolia	Narrow leafed crucianella	UPL
Daucus carota	Carrot	UPL
Delphinium variegatum ssp. *variegatum*	Royal larkspur	UPL
Dichelostemma multiflorum	Many flowered brodiaea	UPL
Dichelostemma volubile	Twining brodiaea	UPL
Downingia ornatissima var. *ornatissima*	Horned downingia	OBL
Elatine sp.	Waterwort	OBL
Epilobium brachycarpum	Willow herb	UPL
Epilobium campestre	Smooth boisduvalia	OBL
Erigeron canadensis	Horseweed	FACU
Eriogonum vimineum	Wicker stemmed eriogonum	UPL
Erodium botrys	Large heron's bill	FACU
Erodium cicutarium	Coastal heron's bill	UPL
Eryngium castrense	Coyote thistle	OBL
Geranium dissectum	Wild geranium	UPL
Gratiola ebracteata	Common hedge hyssop	OBL
Grindelia camporum	Gumweed	FACW
Hedypnois cretica	Crete weed	UPL
Hypericum concinnum	Goldwire	UPL
Lactuca serriola	Prickly lettuce	FACU
Lasthenia californica	Goldfields	FACU
Lasthenia fremontii	Vernal pool goldfields	OBL
Lasthenia glaberrima	Smooth goldfields	OBL
Lathyrus tingitanus	Tangier pea	UPL
Leontodon saxatilis	Hawkbit	FACU
Lepidium didymum	Lesser swine cress	UPL
Lessingia sp.	Lessingia	UPL
Limnanthes alba ssp. *alba*	Typical white meadowfoam	FACW
Logfia gallica	Narrowleaf cottonrose	UPL
Lotus corniculatus	Bird's-foot trefoil	FAC
Lupinus nanus	Valley sky lupine	UPL
Lythrum hyssopifolium	Hyssop loosestrife	OBL
Lythrum salicaria	Purple loosestrife	OBL
Matricaria discoidea	Pineapple weed	FACU

Scientific Name[a]	Common Name	Wetland Indicator Status[b]
Medicago polymorpha	California burclover	FACU
Melilotus albus	White sweetclover	UPL
Mentha pulegium	Pennyroyal	OBL
Microseris acuminata	Sierra foothills microseris	UPL
Mimulus guttatus	Yellow monkey flower	OBL
Mimulus tricolor	Snouted monkey flower	OBL
Navarretia leucocephala ssp. *leucocephala*	White headed navarretia	OBL
Navarretia pubescens	Downy navarretia	UPL
Physalis sp.	Groundcherry	UPL
Plagiobothrys fulvus var. *campestris*	Tawny popcorn flower	UPL
Plagiobothrys greenei	Greene's allocarya	FACW
Plagiobothrys stipitatus	Common vernal pool allocarya	FACW
Plantago coronopus	Cut leaf plantain	FACW
Plantago erecta	Foothill plantain	UPL
Plantago lanceolata	Ribwort	FAC
Pogogyne zizyphoroides	Sacramento mint	OBL
Polycarpon tetraphyllum	Four leaved allseed	UPL
Polygonum aviculare	Common knotweed	FACW
Psilocarphus brevissimus var. *brevissimus*	Woolly marbles	FACW
Psilocarphus tenellus	Slender woolly marbles	OBL
Ranunculus bonariensis	Vernal pool buttercup	OBL
Ranunculus muricatus	Spiny fruited buttercup	FACW
Ranunculus occidentalis var. *occidentalis*	Western buttercup	FAC
Rumex crispus	Curly dock	FAC
Sanicula crassicaulis	Pacific sanicle	UPL
Scandix pecten-veneris	Shepherd's needle	UPL
Sidalcea hartwegii	Hartweg's checkerbloom	UPL
Silene gallica	Windmill pink	UPL
Silybum marianum	Milk thistle	UPL
Sonchus oleraceus	Sow thistle	UPL
Spergularia rubra	Purple sand spurry	FAC
Stellaria media	Common chickweed	FACU
Torilis arvensis	Field hedge parsley	UPL
Tribulus terrestris	Puncture vine	UPL
Trichostema lanceolatum	Vinegarweed	FACU
Trifolium depauperatum	Sack clover	FAC
Trifolium dubium	Shamrock	UPL
Trifolium fragiferum	Strawberry clover	FACU
Trifolium glomeratum	Clustered clover	UPL
Trifolium hirtum	Rose clover	UPL
Trifolium incarnatum	Crimson clover	UPL
Trifolium subterraneum	Subterranean clover	UPL

Scientific Name[a]	Common Name	Wetland Indicator Status[b]
Triglochin scilloides	Flowering-quillwort	OBL
Triteleia hyacinthina	White brodiaea	FAC
Triteleia laxa	Ithuriel's spear	UPL
Verbena lasiostachys var. *lasiostachys*	Vervain	FAC
Vicia villosa ssp. *villosa*	Hairy vetch	UPL
Xanthium strumarium	Cocklebur	FAC
Grasses and Grass-Like Plants		
Aegilops triuncialis	Goatgrass	UPL
Aira caryophyllea	Silver hair grass	UPL
Avena barbata	Slender wild oat	UPL
Avena fatua	Wild oats	UPL
Briza maxima	Rattlesnake grass	UPL
Briza minor	Little quaking grass	FAC
Bromus diandrus	Ripgut brome	UPL
Bromus hordeaceus	Soft chess	FACU
Crypsis schoenoides	Swamp grass	OBL
Cynodon dactylon	Bermuda grass	FACU
Cynosurus echinatus	Dogtail grass	UPL
Cyperus difformis	Variable flatsedge	OBL
Cyperus eragrostis	Umbrella sedge	FACW
Deschampsia danthonioides	Annual hairgrass	FACW
Diplachne fusca	Bearded sprangletop	FACW
Echinochloa crus-galli	Barnyard grass	FACW
Eleocharis palustris	Spike rush	OBL
Elymus caput-medusae	Medusa head	UPL
Elymus glaucus	Blue wildrye	FACU
Festuca myuros	Rattail sixweeks grass	FACU
Festuca perennis	Perennial rye grass	FAC
Gastridium phleoides	Nit grass	FACU
Glyceria declinata	Waxy mannagrass	FACW
Hordeum brachyantherum	Meadow barley	FACW
Hordeum marinum	Mediterranean barley	FAC
Hordeum murinum	Wall barley	FACU
Juncus bufonius	Toad rush	FACW
Juncus capitatus	Leafy bracted dwarf rush	FACU
Juncus effusus	Pacific rush	FACW
Juncus ensifolius	Swordleaf rush	FACW
Juncus uncialis	Inch high rush	OBL
Melica sp.	Melick grass	UPL
Paspalum dilatatum	Dallis grass	FAC
Poa annua	Annual blue grass	FACU
Polypogon australis	Chilean beard grass	FACW

Scientific Name[a]	Common Name	Wetland Indicator Status[b]
Polypogon monspeliensis	Annual beard grass	FACW
Schoenoplectus acutus	Tule	OBL
Sorghum halepense	Johnsongrass	FACU
Stipa pulchra	Purple needle grass	UPL
Typha angustifolia	Narrowleaf cattail	OBL
Typha latifolia	Broadleaf cattail	OBL
Vulpia bromoides	Brome fescue	FAC

[a] Scientific names follow The National Wetland Plant List: 2014 Update of Wetland Ratings (Lichvar et al. 2014) and online updates (http://rsgisias.crrel.usace.army.mil/NWPL/#). Names in [ ] are from Baldwin et al. 2012.

[b] Wetland indicator status ratings and definitions are from Lichvar et al. (2012, 2014)

- OBL (Obligate Wetland Plants)—Almost always occur in wetlands.
- FACW (Facultative Wetland Plants)—Usually occur in wetlands, but may occur in non-wetlands.
- FAC (Facultative Plants)—Occur in wetlands and nonwetlands.
- FACU (Facultative Upland Plants)—Usually occur in non-wetlands, but may occur in wetlands.
- UPL (Upland Plants)—Almost never occur in wetlands.
- Undetermined—cannot be assigned an indicator status because plant could not be identified to species.

Baldwin, B.G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, eds. 2012. The Jepson Manual: Vascular Plants of California, second edition. Berkeley, CA: University of California Press.

Lichvar, R. W., M. Butterwick, N. C. Melvin, and W. N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1–42. Published 2 April 2014. ISSN 2153 733X. Available: http://www.phytoneuron.net/2014Phytoneuron/41PhytoN-2014NWPLupdate.pdf.

Lichvar, R. W., N. C. Melvin, M. L. Butterwick, and W. N. Kirchner. 2012. National Wetland Plant List Indicator Rating Definitions. ERDC/CRREL TR-12-1. U.S. Army Corps of Engineers: Engineer Research and Development Center. Prepared for Wetland Regulatory Assistance Program, U.S. Army Corp of Engineers, Washington, DC.

Appendix E

USFWS, CNPS, and CNDDB Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: May 04, 2018
Consultation Code: 08ESMF00-2016-SLI-0407
Event Code: 08ESMF00-2018-E-05933
Project Name: State Route 70 Corridor Improvements Project

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

To Whom It May Concern:

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

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

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2016-SLI-0407

Event Code: 08ESMF00-2018-E-05933

Project Name: State Route 70 Corridor Improvements Project

Project Type: TRANSPORTATION

Project Description: A 6.1-mile segment of SR 70 would be widened from 2 lanes to 4 lanes from 0.3 mile north of Cox Lane to 0.3 mile north of Ophir Road.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.42732749726974N121.6070449747953W

Counties: Butte, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Slender Orcutt Grass *Orcuttia tenuis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Inventory of Rare and Endangered Plants - 7th edition interface

v7-16aug 8-16-17

Status: search results - Tue, Nov. 7, 2017, 19:33 ET b

{QUADS_123} =~ m/560A|576C|576D|559B|559C|575C|560B|560(Search

Tip: Words meant to be searched as a unit should be wrapped in quotes, e.g., "coastal dunes".
[all tips and help.][search history]

Your Quad Selection: Palermo (560A) 3912145, Shippee (576C) 3912156, Oroville (576D) 3912155, Bangor (559B) 3912144, Loma Rica (559C) 3912134, Oroville Dam (575C) 3912154, Biggs (560B) 3912146, Gridley (560C) 3912136, Honcut (560D) 3912135

Hits 1 to 16 of 16

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

To save selected records for later study, click the ADD button.
ADD checked items to Plant Press | check all | check none
Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
	☑	1	**Astragalus tener var. ferrisiae**	Ferris' milk-vetch	Fabaceae	List 1B.1
	☑	1	**Balsamorhiza macrolepis**	big-scale balsamroot	Asteraceae	List 1B.2
	☑	1	**Castilleja rubicundula var. rubicundula**	pink creamsacs	Orobanchaceae	List 1B.2
	☑	1	**Clarkia mosquinii**	Mosquin's clarkia	Onagraceae	List 1B.1
	☑	1	**Delphinium recurvatum**	recurved larkspur	Ranunculaceae	List 1B.2
	☑	1	**Fritillaria eastwoodiae**	Butte County fritillary	Liliaceae	List 3.2
	☑	1	**Fritillaria pluriflora**	adobe-lily	Liliaceae	List 1B.2
	☑	1	**Hibiscus lasiocarpos var. occidentalis**	woolly rose-mallow	Malvaceae	List 1B.2
	☑	1	**Juncus leiospermus var. ahartii**	Ahart's dwarf rush	Juncaceae	List 1B.2
	☑	1	**Juncus leiospermus var. leiospermus**	Red Bluff dwarf rush	Juncaceae	List 1B.1
	☑	1	**Limnanthes floccosa ssp. californica**	Butte County meadowfoam	Limnanthaceae	List 1B.1
	☑	1	**Orcuttia tenuis**	slender Orcutt grass	Poaceae	List 1B.1
	☑	1	**Paronychia ahartii**	Ahart's paronychia	Caryophyllaceae	List 1B.1
	☑	1	**Sagittaria sanfordii**	Sanford's arrowhead	Alismataceae	List 1B.2
	☑	1	**Trifolium jokerstii**	Butte County golden clover	Fabaceae	List 1B.2
	☑	1	**Tuctoria greenei**	Greene's tuctoria	Poaceae	List 1B.1

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

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

Selections will appear in a new window.

No more hits.

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Bangor (3912144) OR Biggs (3912146) OR Gridley (3912136) OR Honcut (3912135) OR Loma Rica (3912134) OR Oroville (3912155) OR Oroville Dam (3912154) OR Palermo (3912145) OR Shippee (3912156))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

State Route 70 Corridor Improvements Project

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S2	
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3G4T1	S1	FP
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha pop. 6*	AFCHA0205A	Threatened	Threatened	G5	S1	
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
greater sandhill crane *Grus canadensis tabida*	ABNMK01014	None	Threatened	G5T4	S2	FP
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
North American porcupine *Erethizon dorsatum*	AMAFJ01010	None	None	G5	S3	
northern harrier *Circus cyaneus*	ABNKC11010	None	None	G5	S3	SSC
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G5	S3S4	
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G3G4	S2	SSC
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
yellow warbler *Setophaga petechia*	ABPBX03010	None	None	G5	S3S4	SSC

Record Count: 27

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Bangor (3912144) OR Biggs (3912146) OR Gridley (3912136) OR Honcut (3912135) OR Loma Rica (3912134) OR Oroville (3912155) OR Oroville Dam (3912154) OR Palermo (3912145) OR Shippee (3912156))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

State Route 70 Corridor Improvements Project

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
California macrophylla round-leaved filaree	PDGER01070	None	None	G4	S4	1B.2
Castilleja rubicundula var. rubicundula pink creamsacs	PDSCR0D482	None	None	G5T2	S2	1B.2
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Clarkia mosquinii Mosquin's clarkia	PDONA050S0	None	None	G2	S2	1B.1
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Fritillaria eastwoodiae Butte County fritillary	PMLIL0V060	None	None	G3Q	S3	3.2
Fritillaria pluriflora adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
Great Valley Willow Scrub Great Valley Willow Scrub	CTT63410CA	None	None	G3	S3.2	
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	PMJUN011L2	None	None	G2T2	S2	1B.1
Limnanthes floccosa ssp. californica Butte County meadowfoam	PDLIM02042	Endangered	Endangered	G4T1	S1	1B.1
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Northern Basalt Flow Vernal Pool	CTT44131CA	None	None	G3	S2.2	
Northern Basalt Flow Vernal Pool						
Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Hardpan Vernal Pool						
Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	G1	S1.1	
Northern Volcanic Mud Flow Vernal Pool						
Orcuttia tenuis	PMPOA4G050	Threatened	Endangered	G2	S2	1B.1
slender Orcutt grass						
Paronychia ahartii	PDCAR0L0V0	None	None	G3	S3	1B.1
Ahart's paronychia						
Sagittaria sanfordii	PMALI040Q0	None	None	G3	S3	1B.2
Sanford's arrowhead						
Trifolium jokerstii	PDFAB40310	None	None	G2	S2	1B.2
Butte County golden clover						
Tuctoria greenei	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Greene's tuctoria						

Record Count: 25

Appendix F
Wildlife Species Observed

Common Name	Scientific Name
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Turkey vulture	*Cathartes aura*
White-tailed kite	*Elanus leucurus*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
Belted kingfisher	*Ceryle alcyon*
Acorn woodpecker	*Melanerpes formicivorus*
Western scrub jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Northern mockingbird	*Mimus polyglottos*
White-crowned sparrow	*Zonotrichia leucophrys*
Brewer's blackbird	*Euphagus cyanocephalus*
House finch	*Carpodacus mexicanus*
Raccoon (tracks)	*Procyon lotor*

Appendix G
Avoidance, Minimization and/or Mitigation Summary

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] which follows) would be implemented. During project design, avoidance, minimization, and /or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. As the following ECR is a draft, some fields have not been completed, and will be filled out as each of the measures is implemented. Note: Some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR.

REC-1: Minimize Harm to the Oroville Wildlife Area Property.

- Access to Oroville Wildlife Area from SR 70 will be maintained at all times and will be coordinated with CDFW. If access is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular and pedestrian access around the construction area or provide signs directing vehicles to the Pacific Heights Road access point. Pedestrian access around the construction zone will be maintained at all times.
- In the event that any inadvertent damage occurs to the lands or entrance signs, the property will be restored to the condition that existed prior to the construction activities or better.
- Caltrans' Division of Right of Way and Land Surveys will coordinate with CDFW to provide the compensation required under the Park Preservation Act.

TRA-1: Prepare a Traffic Control Plan

The California Department of Transportation (Caltrans), in cooperation with the Butte County Association of Governments (BCAG), will prepare and implement a traffic control plan as part of the overall construction management plan. Contractor compliance with the traffic control plan will be required as part of the construction contracts and will be used throughout the course of project construction. The traffic control plan will include, but will not be limited to, the following elements.

- Advance notice will be provided to transit operators, emergency service providers, businesses, and residences of construction work, any anticipated delays, and temporary road closures.
- When traffic control measures occur, advance notice will be provided to local fire and police departments to ensure that alternate evacuation and emergency routes are designed to maintain response times.
- Vehicular access to driveways and private roads will be maintained to the extent possible and compensation will be afforded by Caltrans and BCAG for loss of access.
- Existing non-motorized access or detours and warning signs will be maintained at all times.

- Parked construction-related vehicles will not disrupt automobile, bicycle, or pedestrian traffic.
- Traffic controls will be used in the construction area if the normal traffic flow is affected by construction activities. Such controls may include flag persons wearing safety gear consistent with current codes of safe practices using a "Stop/Slow" paddle to control oncoming traffic.
- Traffic controls will be used at haul route crossings. Controls may include flag persons wearing safety gear consistent with current codes of safe practices using a "Stop/Slow" paddle to control oncoming traffic.
- Signs giving advance notice of upcoming construction activities will be posted at least 1 week in advance so that motorists, if they choose, can avoid traveling through the project area during these times.
- Construction warning signs will be posted in accordance with local standards or those set forth in the *Manual on Uniform Traffic Control* in advance of the construction area and at any intersection that provides access to the construction area.
- Written notification will be provided to contractors regarding appropriate routes to and from the construction site, plus the weight and speed limits on local roads used to access the construction site.

TRA-2: Provide Pedestrian and Bicycle Access during Construction

All detours or roadways that permit bicycle and pedestrian modes of travel will include provisions for pedestrian and bicycle access during construction. Bicycle or pedestrian detour routes may deviate from traffic detour routes where a more appropriate route is available.

AES-1: Avoid and Protect Trees in Staging Areas during Construction

Trees that are located within staging areas will be avoided and protected during construction. Tree protection zones for all trees will be the dripline radius plus 1 foot. The fencing will remain in place throughout the course of the project. Tree protection fencing must be a minimum 6-foot-tall chain link or substitute fencing. The location of the fencing will be indicated on the project design engineer's grading plans. The fencing will be erected before demolition, grading, or any other construction activity begins. Fencing should not be placed on private property without written authorization from property owners. The following activities are prohibited throughout the course of the project within the tree protection zone:

- Storage or parking of vehicles, building materials, refuse, or excavated soil material.
- Use, access, or parking of heavy equipment, such as backhoes, tractors, and other heavy vehicles and equipment.
- Dumping of poisonous chemicals or materials, or chemicals or materials with unknown properties that potentially could be deleterious to tree health, such as paint, petroleum products, concrete or stucco mix, or dirty water.
- The use of tree trunks for winch support, anchorage, power pole, sign post, or any other function.
- Drainage changes, grade changes, soil disturbance.

AES-2: Minimize Fugitive Light from Portable Sources Used for Construction

At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights will be operated at the lowest allowable wattage and height and will be raised to a height no greater than 20 feet. All lights will be screened and directed downward toward work activities and away from the night sky and highway users and highway neighbors, particularly residential areas, to the maximum extent possible. The number of nighttime lights used will be minimized to the greatest extent possible.

AES-3: Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix

The project proponent will require construction contractors to incorporate native grass and wildflower seed in standard seed mixes, which may be non-native, for erosion control measures that will be applied to all exposed slopes and within the medians. Wildflowers will provide seasonal visual interest to areas where trees and shrubs are removed and grasslands are disturbed. Only wildflower and grass species that are native will be incorporated into the seed mix, and under no circumstances will any invasive grass or wildflower plant species be used as any component in any erosion control measures. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. If not appropriate to the surrounding habitat, wildflowers should not be included in the seed mix.

AES-4: Replace or Relocate Site Features and Landscaping Affected by the Project

Where appropriate and to the degree possible, landscaping and related appurtenances, such as fencing, privacy walls, and other similar features, removed from private properties as a result of construction will be relocated, replaced, or restored in place and in kind to mitigate for visual impacts. In addition, to the degree possible, buildings and structures, such as residences, barns, sheds, and other similar features, removed from private properties as a result of construction will be relocated or rebuilt on the affected parcel to mitigate for visual impacts. If the site cannot accommodate this relocation or replacement, then Caltrans will compensate parcel owners for features that would be removed or damaged as a result of the project. Replacement would be of value at least equal to that of existing features. To determine compensation for trees, an arborist certified in appraising a tree for the value it adds to that property will be used to determine monetary compensation for tree removal. Similarly, a person(s) qualified in evaluating buildings, structures, and landscape features other than trees, such as fencing, privacy walls, or similar features, will be used to determine compensation values for the loss of those features at such locations. The County or its contractor will coordinate these appraisals. In the event that a parcel owner deems the appraised value unfair, the parcel owner may hire an independent appraisal at their own expense. Negotiations to settle upon a fair appraisal value can take place between the County or its contractor and the parcel owner in question. If a fair appraisal value cannot be agreed upon, then an independent mediator will be used to resolve negotiations in a manner that is fair to all parties involved. The results of the assessment of private-property tree and landscape features will be used to determine the budget needed to implement this avoidance and minimization measure and will be included in the costs to construct it as part of the project. Before final project acceptance (i.e., prior to final acceptance of design plans and

specifications that will be released for construction contract advertisement and award), funding source(s) for replacement of these features will be in place.

AES-5: Apply Minimum Lighting Standards

All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using Illuminating Engineering Society's design guidelines and in compliance with International Dark-Sky Association–approved fixtures. All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, and the number of nighttime lights needed to light an area will be minimized. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing. LED lighting will avoid the use of BRWL lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the International Dark-Sky Association's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

CUL-1: Implement Plan to Address Discovery of Unanticipated Buried Cultural Resources or Human Remains

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Kelly McNelley, Caltrans District 3 Environmental Branch Manager, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

WQ-1: Implement a Storm Water Pollution Prevention Plan and Caltrans' Best Management Practices to Avoid and Minimize Potential Effects on Water Quality

Implementation of the SWPPP, Caltrans BMPs, and stormwater guidance measures will minimize the potential for construction-related surface water pollution and ensure that water quality will not be compromised during construction. Specific BMPs designed to minimize water quality effects from construction will be determined by the construction contractor in the SWPPP with Caltrans approval. All construction would conform to the NPDES General Construction Permit requirements to maintain water quality within the project area and vicinity; these requirements include stormwater and non-stormwater quality protection measures for all construction activities within the Caltrans right-of-way.

GEO-1: Minimize Impacts from Seismic Events

To minimize potential impacts from seismic events, the project will be constructed in accordance with all applicable Caltrans standards and regulations and will be designed for the maximum credible earthquake. All construction activities will adhere to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

GEO-2: Minimize Soil Instability

To minimize the potential for soil instability from shrink-swell potential, soils with high shrink-swell potential will be compacted at the highest moisture content possible and not be allowed to dry out prior to covering with other material.

GEO-3: Conduct Geotechnical Investigation

A geotechnical investigation is necessary to determine the engineering characteristics of native soil in undeveloped areas. Special treatments could be required to increase the suitability of native soils for highway construction, or imported material may be used. Imported soil for highway embankments will have a minimum R-value of 15 and have the appropriate environmental certifications to ensure contaminated soil is not used on site. Other treatments could include removal of loose and compressible material, placement of subgrade enhancement geotextile, or use of a cementitious binder.

HAZ-1: Avoid and Minimize the Potential for Effects from Hazardous Waste or Materials during Project Construction

Contractors would be required to work under a health and safety plan and soil management plan. These plans would be prepared to address worker safety when working with potentially hazardous materials, including soils potentially containing aerially deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans would provide for identification of potential hazardous materials at the work site and for specific actions to avoid worker exposure.

HAZ-2: Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow/White Traffic Striping along Existing Roadways

As required by Caltrans' standard special provisions, the construction contractor will sample and test yellow/white traffic striping scheduled for removal to determine whether lead or chromium is present. The construction contractor will also implement a project specific lead compliance plan prepared by a Certified Industrial Hygienist (CIH) as required by Cal/OSHA.

All aspects of the project associated with removal, storage, transportation, and disposal will be in strict accordance with appropriate regulations of the California Health and Safety Code. The stripes will be disposed of at a Class 1 disposal facility. These grindings (which consist of the roadway material and the yellow color traffic stripes) will be removed and disposed of in accordance with Standard Special Provision 15-1.03B (Residue Containing High Lead Concentration Paints) (http://www.dot.ca.gov/hq/env/haz/hw_sp.htm) which requires a Lead Compliance Plan.

The responsibility of implementing this measure will be outlined in the contract between Caltrans and the construction contractor. Implementing this measure will minimize potential effects from these hazardous materials.

HAZ-3: Perform Soil Testing and Dispose of Contaminated Soils Appropriately

To prevent exposure of workers and the public to contaminated soils, requirements as detailed in the DTSC Agreement will be followed. In addition, surface soils from potentially contaminated areas would be screened and contaminated soils disposed of appropriately. Soil excavated from the surface to a depth of 1 foot can be reused within Caltrans right of way if covered with at least one foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within Caltrans ROW, then the excavated soil should be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Therefore, screening of surface soils for residual chemical contamination should occur if soils are to be moved off agricultural parcels, to non-agricultural parcels. Soils testing positive should be removed off site to a permitted treatment/disposal facility. This testing should be completed before construction activities.

HAZ-4: Develop a Lead Compliance Plan

The Contractor shall prepare a project-specific Lead Compliance Plan to minimize worker exposure to lead-impacted materials. The plan will include protocols for environmental and personal monitoring, requirements for person protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted materials.

HAZ-5: Develop and Implement Plans to Address Worker Health and Safety

As necessary, and as required by Caltrans and federal and state regulations, plans such as a health and safety plan, BMPs, and/or an injury and illness prevention plan will be prepared and implemented to address worker safety when working with potentially hazardous materials, including potential TWW, lead or chromium in traffic stripes, ADL, and other construction-related materials within the right-of-way during any soil-disturbing activity.

If project components are removed that may contain TWW (e.g., sign posts, metal beam guardrail wood posts, and lagging on retaining walls), the contractor must prepare and submit a safety and health work practices plan for handling TWW approved by an American Board of Industrial Hygiene Certified Industrial Hygienist. TWW must be disposed of in an approved TWW facility. Construction workers who handle this material must be provided training that includes the following.

- All applicable requirements of Title 8 CCR;
- Procedures for identifying and segregating TWW;
- Safe handling practices;
- Requirements of Title 22 CCR, Division 4.5, Chapter 34; and
- Proper disposal methods.

AQ-1: Implement California Department of Transportation Standard Specification Section 14

To control the generation of construction-related PM10 emissions, the project proponent will follow Standard Specification Section 14, Environmental Stewardship, which addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience for the public; and damage or injury to any person or property as a result of any construction operation. Standard Specification Section 14-9.02 requires compliance with BCAQMD rules, regulations, ordinances, and statutes that apply to work performed under the contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code Section 11017 (Public Contract Code Section 10231). Standard Specification Section 14-9.03 addresses dust control and palliative requirements.

AQ-2: Implement Additional Control Measures for Construction Emissions of Fugitive Dust

Additional measures to control dust will be borrowed from BCAQMD's recommended list of dust control measures and implemented to the extent practicable when the measures have not already been incorporated and do not conflict with requirements of Caltrans' Standard Specifications, Special Provisions, the National Pollutant Discharge Elimination System permit, and the Biological Opinions, Clean Water Act Section 404 permit, Clean Water Act Section 401 Certification, and other permits issued for the proposed project. The following measures are taken from BCAQMD's (2014) *CEQA Handbook*.

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District-approved alternative method will be used.

- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities.
- Exposed ground areas that will be reworked at dates greater than 1 month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with County regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

PALEO-1: Prepare and Implement a Paleontological Mitigation Plan

1. A non-standard provision for paleontology mitigation will be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with paleontological salvage.
2. If paleontological resources are discovered during earth-moving activities, the construction crew will immediately cease work within a 60-foot radius of the find and notify the resident engineer. In the event paleontological resources are discovered, fossil specimens will be properly collected and sufficiently documented to be of scientific value.
3. The collection and treatment actions described in the PMP will occur during the grading and construction process and after recovery of specimens if fossils are found, including sampling for microfossils, conducting paleomagnetic analysis, identifying and preparing fossils, arranging for a repository, and preparing a final report.

PALEO-2: Comply with Caltrans Standard Specifications Section 14-7

For all excavations, contactors will be required to implement the provisions of Caltrans Standard Specifications Section 14-7, which include a work stoppage and appropriate follow-up if paleontological resources are encountered during project construction.

BIO-1: Compensate for the Permanent Loss of Valley Foothill Riparian

Caltrans will compensate for the permanent loss of valley foothill riparian at a minimum ratio of 1:1 (1 acre planted for every 1 acre permanently affected). Replacement plantings for valley foothill riparian may be planted onsite and/or at offsite locations. Caltrans will prepare a restoration plan, including a species list and number of each species, planting locations, and maintenance requirements. Plantings will consist of cuttings taken from local plants or plants grown from local material. Planted species for the mitigation plantings will be similar to those removed from the project area and will include native species, such as arroyo willow, narrowleaf willow, and Fremont's cottonwood, and other locally appropriate species. All plantings will be fitted with exclusion cages or other suitable protection from herbivory.

Plantings will be monitored as required in the project permits.

BIO-2: Conduct Environmental Awareness Training for Construction Employees

Caltrans will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel and will brief them on the need to avoid effects on listed, threatened, and candidate species and vernal pool habitat. The education program will include a brief review of the listed and candidate species with the potential to occur in the BSA (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the BSA in which the species may occur, as well as their legal status and protection. The program also will cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. This will include the steps to be taken if a listed or candidate species is found within the construction area (i.e., notifying the crew foreman, who will call a designated biologist). An environmental awareness handout that describes the candidate and listed species and the vernal pool habitat to be avoided during project construction and identifies all relevant permit conditions will be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.

BIO-3: Compensate for Loss of Wetlands

Caltrans will compensate for the permanent fill of waters of the United States/waters of the State (a direct impact associated with roadway construction) in seasonal wetland/seasonal swale and seasonal emergent wetland. The minimum wetland compensation ratio to ensure no net loss of wetland functions and values for seasonal wetland/seasonal swale and seasonal emergent wetland habitats will be 1:1 (1 acre of wetland habitat credit for every 1 acre of permanent impact). Final compensatory ratios will be determined during the permitting process. Caltrans will compensate for permanent loss of seasonal wetland/seasonal swale and seasonal emergent wetland through one or more of the following mitigation options:

- Purchase compensatory credits for the affected wetland habitat types at a USACE-approved mitigation bank, such as Sycamore Creek Conservation Bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.

- Pay into the Butte County In-Lieu Fee program, if it is in place at the time of project permitting.
- Temporarily disturbed wetlands will be returned to pre-construction condition following construction. Caltrans also will implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

BIO-4: Compensate for the Placement of Permanent Fill into Ephemeral Drainages

Caltrans will compensate for the permanent fill of other waters of the United States/waters of the State (a direct impact associated with roadway construction) in ephemeral drainages. The minimum ephemeral drainage compensation ratio will be 1:1 (1 acre of ephemeral drainage habitat credit for every 1 acre of permanent impact) to ensure no net loss of habitat functions and values. The final compensatory ratio will be determined during the permitting process. Caltrans will compensate for permanent loss of ephemeral drainage through one or more of the following mitigation options:

- Purchase compensatory credits at a USACE-approved mitigation bank. Mitigation banks with service areas for Butte County currently include Porter Ranch Mitigation Bank and Sycamore Creek Conservation Bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.
- Pay into the Butte County In-Lieu Fee program, if it is in place at the time of project permitting.

Temporarily disturbed ephemeral drainages will be returned to preconstruction condition following construction. All additional conditions and requirements of state and federal permits that will be obtained for the proposed project will also be implemented.

BIO-5: Conduct Floristic Surveys for Special-Status Plants during Appropriate Identification Periods and Implement Protective Measures as Feasible

Caltrans will retain a qualified botanist to survey the BSA to document the presence or absence of special-status plants before project construction. The botanist will conduct a floristic survey that follows the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the blooming period. To account for special-status plant identification periods, a field survey will be conducted prior to any project construction and in the months of April and June or July. The botanist will photograph and map locations of all special-status plants identified during the surveys, document the location and extent of the special-status plant population on a CNDDB Survey Form, and submit the completed Survey Form to the CNDDB.

Wherever feasible, avoidance and minimization measures will be implemented to reduce direct impacts on special-status plants found in or adjacent to the construction area by creating a 100-foot buffer around the plants and by installing and maintaining exclusion fencing, as described in the project BMPs. The buffer size may be reduced if site-specific conditions indicate that the hydrology where the plants are located would not be affected by construction and if CDFW or

USFWS (for federally listed species) concur. BCAG will redesign or modify the proposed project wherever feasible in order to avoid indirect or direct effects on special-status plants identified within the project construction area during the surveys. Any special-status plants in the proposed staging areas will be avoided.

BIO-6: Compensate for Permanent Impacts on Special-Status Plants

If complete avoidance of special-status plants is not feasible, Caltrans will compensate for unavoidable permanent direct effects on special-status plants through protection of suitable habitat that is of equal or greater function than the impacted habitat at a 2:1 ratio (habitat preserved: habitat impacted), or as agreed upon through coordination with CDFW (for state-listed or CNPS-ranked species) or USFWS (for federally listed species). The final compensation acreage will be based on the results of the preconstruction surveys of the selected project alternative.

Suitable habitat for affected special-status plant species will be purchased within a conservation area, preserved, and managed in perpetuity. Detailed information will be provided to CDFW and USFWS, if necessary, on the location and quality of the preservation area, the feasibility of protecting and managing the area in perpetuity, and the responsible parties involved. Other pertinent information will also be provided, to be determined through future coordination with CDFW and USFWS, if necessary. Alternatively, credits for affected special-status plant species may be purchased at a mitigation bank, if available.

BIO-7: Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work

To avoid potential injury or mortality of western pond turtles, Caltrans will retain a qualified wildlife biologist to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. The biologist will survey the aquatic habitat and adjacent marsh and grassland habitat within the construction area. If in-water work does not start immediately, the biologist will return to the construction site immediately prior to the start of in-water work to conduct another preconstruction survey. The biologist will remain on site until initial in-water work is complete. If a turtle becomes trapped during initial in-water work, a biologist who is CDFW-approved to capture and relocate turtles during construction of the project, will relocate the individual to suitable aquatic habitat upstream or downstream of the construction area. For the remainder of construction, the CDFW-approved biologist will remain on-call in case a turtle is discovered. The construction crew will be instructed to notify the crew foreman who will contact the biologist if a turtle is found trapped within the construction area. Work in the area where the turtle is trapped will stop until the biologist arrives and removes and relocates the turtle. The biologist will report their activities to Caltrans and the CDFW within 1 day of relocating any turtle.

BIO-8: Avoid and Minimize Potential Effects on Vernal Pool Branchiopods

The following steps will be taken to avoid or minimize potential effects on vernal pool branchiopods.

- Ground disturbance within 250 feet of suitable habitat will be avoided during the rainy season (approximately October 15 through May 15).
- Partial fill of vernal pools/vernal swales and seasonal wetlands/seasonal swales (i.e., permanent impacts) will only occur when vernal pools/vernal swales and seasonal wetlands/seasonal swales are completely dry.
- If requested by USFWS, the top 3-4 inches of soil in pools that would be destroyed or completely filled would be removed and stored in the project area until ready for placement in vernal pool habitat to be restored. The topsoil will be kept covered with tarps or other appropriate material until restored pools are ready to be inoculated. Orange construction barrier fencing will be installed around the covered topsoil. The biological monitor will be onsite to monitor the removal of the topsoil and will check to make sure that the soil is properly covered during periodic monitoring visits to the project site. When restored pools are completed, the stored topsoil would be spread over the bottom of restored pools prior to the start of the winter rainy season.

BIO-9: Compensate for Loss of Vernal Pool Branchiopod Habitat

Compensatory mitigation for direct and indirect effects on habitat for vernal pool branchiopods will be mitigated through the purchase of mitigation credits at a USFWS-approved conservation bank. Habitat that is directly or indirectly impacted will be mitigated by preserving habitat at a 2:1 ratio (habitat preserved: habitat impacted) and creating habitat at a 1:1 ratio (habitat created: habitat impacted) at the USFWS-approved mitigation bank. Table 2.3.5-5 summarizes acreages of compensation required by alternative for direct and indirect effects on vernal pool branchiopod habitat.

Appendix H
List of Technical Reports

The following technical reports have been prepared for the project:

- Air Quality Study Report, prepared by ICF International, May 2016.
- Air Quality Conformity Analysis, prepared by ICF International, May 2016.
- Biological Assessment, prepared by ICF International, July 2018.
- Natural Environment Study, prepared by ICF International, July 2018.
- Delineation of Potential Waters of the United States, prepared by ICF International, July 2018.
- Community Impact Assessment, prepared by ICF International, December 2016.
- Archaeological Survey Report, prepared by ICF International, October 2016.
- Historical Resources Evaluation Report, prepared by ICF International, September 2016.
- Historic Property Survey Report, prepared by ICF International, February 2017.
- Noise Study Report, prepared by ICF International, June 2016.
- Paleontological Evaluation Report and Preliminary Paleontological Mitigation Plan, October 2016.
- Visual Impact Assessment, prepared by ICF International, September 2016.
- Water Quality Assessment Report, prepared by ICF International, January 2017.
- Stormwater Data Report, prepared by Caltrans, October 2016.
- Initial Site Assessment, prepared by Chico Environmental, March 2013.
- Traffic Operations Report, prepared by Fehr & Peers, September 2015.

Appendix I

Section 4(f) Report

Appendix B

State Route 70 Corridor Improvements Project ***Section 4(f)***

Section 4(f) De Minimis Determination

State Route 70 Corridor Improvements Project
Butte County
03-BUT-70-PM 5.7/11.8
Federal Project No.: EA 03-3F280/E-FIS 0312000155

July 2016

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Table of Contents

Figures and Tables

List of Abbreviated Terms

BCAG	Butte County Association of Governments
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
NRHP	National Register of Historic Places
OWA	Oroville Wildlife Area
SR 70	State Route 70
TCEs	Temporary construction easements
USC	United States Code

Section 4(f) Analysis

Introduction

The California Department of Transportation (Caltrans), in cooperation with the Butte County Association of Governments (BCAG), proposes to widen a 6.1 mile segment of State Route 70 (SR 70). The State Route 70 Corridor Improvements Project (proposed project) is being proposed to provide passing opportunities between Marysville and Oroville, thereby increasing safety and decreasing travel times between those cities. This report documents the Section 4(f) *de minimis* determination for the Oroville Wildlife Area (OWA), a publicly owned wildlife refuge adjacent to and west of State Route 70 (SR 70) in Butte County. This report also evaluates other potential Section 4(f) properties in the project vicinity relative to the requirements of Section 4(f).

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Section 4(f) *de minimis* Determination

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 USC 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. The Federal Highway Administration's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and 23 CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 USC 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Description of Section 4(f) Property

Oroville Wildlife Area

The OWA is owned and managed by the California Department of Fish and Wildlife (CDFW). The area is located southwest of the city of Oroville and west of SR 70. Figure 1, Oroville Wildlife Area and Recreational Facilities, shows the location of one entrance to the wildlife area from SR 70 within the project limits. The wildlife area includes approximately 11,800 acres of riparian woodland along the Feather River and grasslands surrounding the Thermalito Afterbay. Figure 2, Oroville Wildlife Area, shows the CDFW map of the wildlife area. The OWA was designated a wildlife area in 1968 by the Fish and Game Commission to preserve wildlife values and habitat. The wildlife area was formerly occupied by gold dredging operations and two diversion areas removed after construction of the Oroville Dam (California Department of Fish and Wildlife 2016).

Recreation activities include fishing, boating, wildlife viewing, camping, hiking, biking, swimming, and shooting. The OWA is a Type C Wildlife Area, defined as wildlife areas that are open daily for hunting all legal species and do not require the purchase of a hunting pass for entry (California Department of Fish and Wildlife 2015). Hunting and archery opportunities include deer, waterfowl, upland game birds (dove, pheasant, quail, turkey), and small game (rabbits, squirrels). Hunting is allowed on the uplands and Thermalito Afterbay, September 1 through January 31. The area is open to the public from one hour before sunrise to one hour after sunset. Fishing is allowed year round for warm water species in the afterbay and dredger ponds, and salmon, steelhead, shad, and striped bass in the Feather River (California Department of Fish and Wildlife 2016). A portion of the 41-mile Brad B. Freeman Bike Trail traverses the OWA from the headquarters off Oroville Dam Boulevard along the main access road to just north of

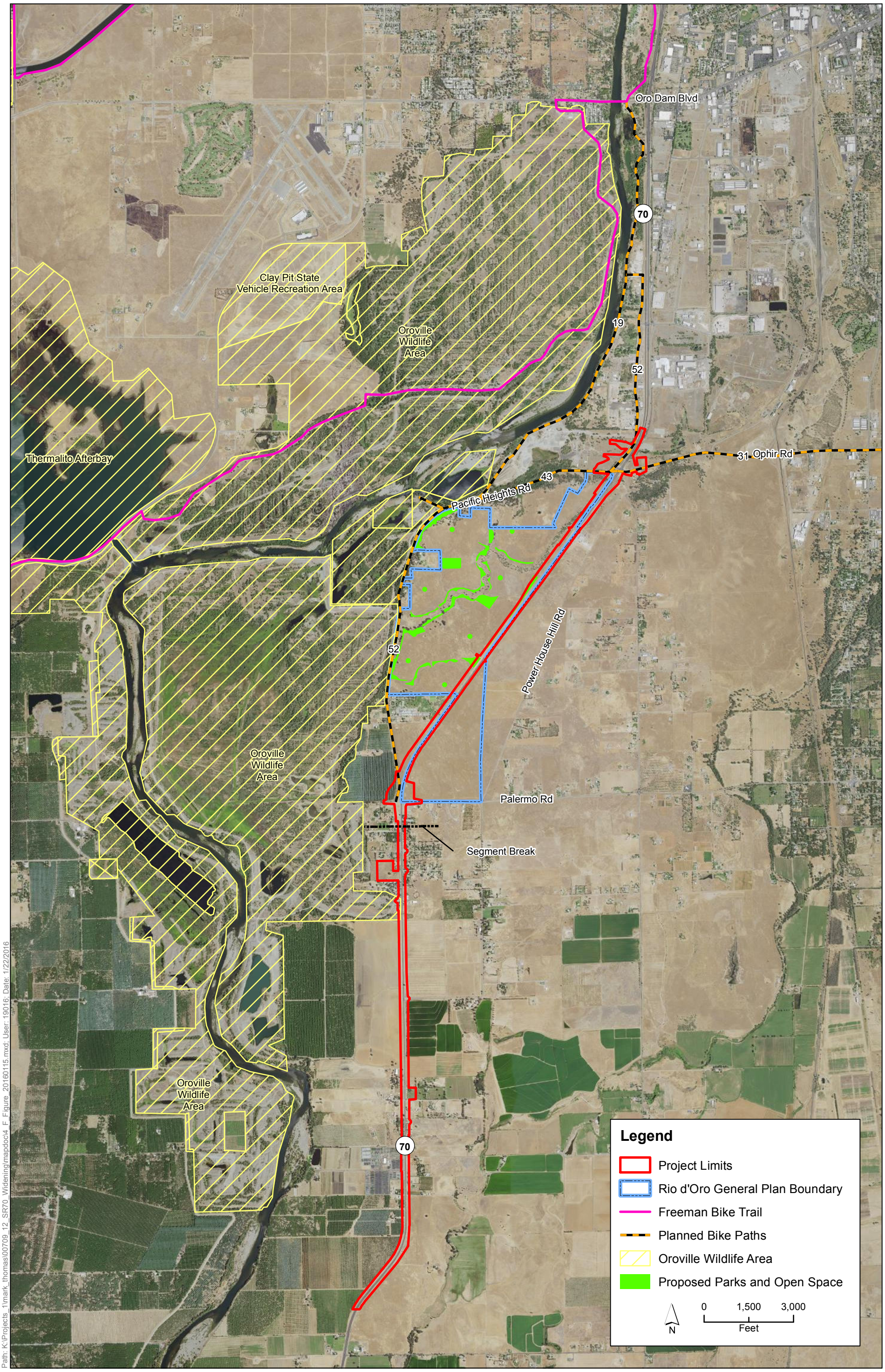

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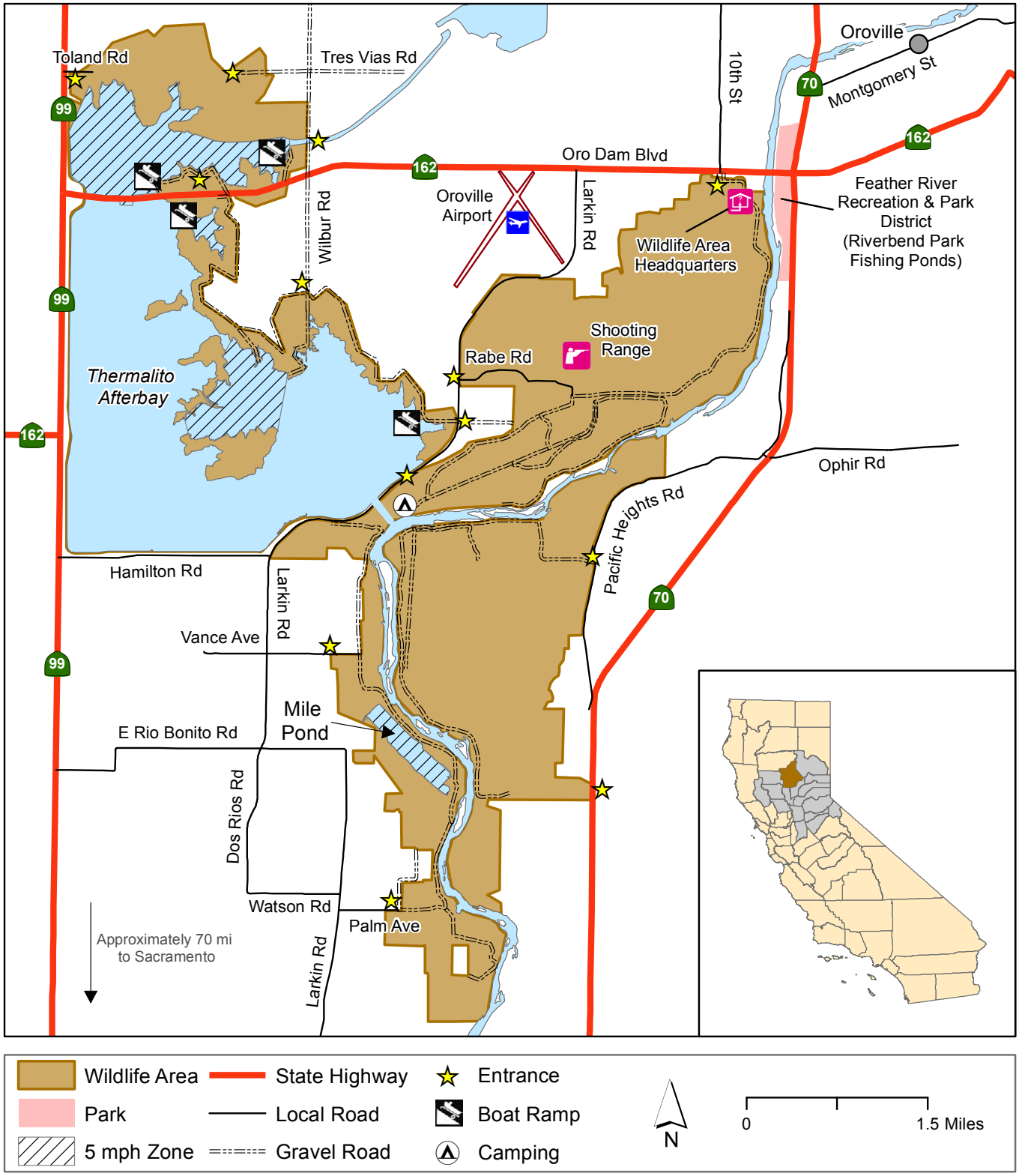
Figure 1
Oroville Wildlife Area and Recreational Facilities



Source: CDFW, 2013

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Figure 2
Oroville Wildlife Area

the afterbay outlet, around the Thermalito Afterbay, then continues northeast to the Thermalito Forebay and Lake Oroville (see Figure 1) (California Department of Water Resources 2016a). Additionally, the 220-acre Clay Pit State Vehicle Recreation Area is located within the Oroville Wildlife Area boundary east of Larkin Road and north of Rabe Road, providing off-highway vehicle use opportunities by all-terrain vehicles, dune buggies, and motorcycles (see Figure 1) (California Department of Water Resources 2016b). Off-road vehicle use is not allowed in the OWA, except within this designated area.

Developed facilities include the Afterbay Outlet Campground with primitive camp sites (tents, RVs), boat launch, and restrooms located near the outlet in the center of the area (Figure 2). A permit for camping is required and can be obtained by calling the California Highway Patrol. A shooting range is located west of the river off Rabe Road and is open sunrise to sunset for rifles, pistols, shotguns, and archery. The wildlife area headquarters are located at 945 Oroville Dam Boulevard in West Oroville (California Department of Fish and Wildlife 2016). Boat ramps and restrooms are also provided at Wilbur Road, Monument Hill, and Larkin Road (car top launch) entrances. Picnic sites are available at Monument Hill.

There are multiple access points to different areas within the OWA (Figure 2). West of the Feather River, vehicle access points are from Toland Road, Tres Vias Road, Wilbur Road (north of Oroville Dam Boulevard), Oroville Dam Boulevard, Wilbur Road (south of Oroville Dam Boulevard), OWA Headquarters, Rabe Road, Larkin Road (north of outlet and near campground), Vance Avenue, and Palm Avenue. There are two vehicle access points to OWA east of Feather River; from Pacific Heights Road and SR 70 (California Department of Fish and Wildlife 2016).

Impacts to Section 4(f) Property

The OWA is publicly owned, open to the public, and designated as a state wildlife area, making it eligible for protection under Section 4(f). As shown on Figures 1 and 2, there is an existing entrance to the OWA adjacent to the proposed project. A short section of the entrance is paved and higher than the existing roadway elevation. Three utility poles and overhead electric lines run along the frontage with SR 70 with Valley foothill riparian vegetation. The gravel road continues west to the banks of the Feather River (Figure 2). Oak Knob Draw is an ephemeral drainage located south of the entrance that crosses under SR 70 (which is on a bridge) and flows west toward the Feather River. There are no wildlife area facilities in this area except for two signs posting information and regulations, approximately 200 feet west of the roadway. The east bank of the Feather River is more than 0.5 mile west of the entrance.

Three proposed build alternatives are being considered for this project, all of which widen SR 70 from two to four lanes. Segment 1 extends from Palermo Road north to the northerly terminus 0.3 mile north of Ophir Road. Segment 2 extends from 0.3 mile north of Cox Lane to Palermo Road.

- Alternative 1: This alternative holds the easterly edge of pavement and widens to the west.

- Alternative 2: This alternative holds the easterly edge of pavement and widens to the west in Segment 1 and holds the westerly edge of pavement and widens to the east in Segment 2.
- Alternative 3: This alternative holds the easterly edge of pavement and widens to the west in Segment 1 and widens symmetrically on both sides of SR 70 in Segment 2.

The entrance to OWA is located within the project limits for Segment 2. In Segment 2 (southerly terminus to Palermo Road), the highway will be widened to conventional highway standards (four 12-foot travel lanes, 8-foot outside shoulders, and 18-foot paved median).

Section 4(f) Use

All three build alternatives require sliver right-of-way acquisitions from the properties fronting SR 70, including OWA. Temporary construction easements (TCEs) would also be required with up to an additional 10 feet beyond the right-of-way acquisition. The area acquired from OWA would be permanently incorporated into the right-of-way of SR 70, which constitutes a use under Section 4(f).

Table 1 shows the acres of land acquisitions from the OWA necessary to widen SR 70, including the area of TCEs. Figure 3, Section 4(f) Use of Oroville Wildlife Area, shows the area affected by right-of-way acquisition and TCE for each alternative.

Table 1. Permanent and Temporary Section 4(f) Use (acres)

	Permanent Acquisition	Temporary Construction Easement
Alternative 1	1.12	0.19
Alternative 2	0.21	0.17
Alternative 3	0.73	0.18

Alternative 1 widens to the west in both Segments 1 and 2 with new pavement construction on the west side of the existing lanes. As shown on Figure 3, approximately 1.12 acres (approximately 748 feet long and 47 to 80 feet wide) would be permanently incorporated into the SR 70 right-of-way and 0.19 acres (approximately 767 feet long by 10 feet wide) used as a TCE. A wider area beyond that needed for lane widening is necessary to allow for the transition between the new pavement and change in elevation at the entrance.

Alternative 2 widens to the west in Segment 1 and widens to the east in Segment 2. In Segment 2, approximately 0.21 acre (approximately 748 feet long and 8 to 25 feet wide) of OWA land would be permanently incorporated into the SR 70 right-of-way and 0.17 acre (approximately 760 feet by 10 feet) used as a TCE. West of SR 70 in Segment 2, the roadside will be regraded to provide the standard hinge points, side slopes, and clear recovery areas.

Alternative 3 widens to the west in Segment 1 and widens symmetrically on both sides of SR 70 in Segment 2. Approximately 0.73 acre (approximately 748 feet long and 41 to 43 feet wide) of OWA land would be permanently incorporated into the SR 70 right-of-way and 0.17 acre

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Figure 3
Section 4(f) Use of Oroville Wildlife Area

(approximately 765 feet by 10 feet) used as a TCE. The roadsides will be regraded to provide the standard hinge points, side slopes, and clear recovery areas.

Access to OWA from SR 70 could be temporarily affected when construction activities are underway in Segment 2, specifically at or immediately near the entrance (Figure 3). Vehicles or pedestrians would be temporarily rerouted around the construction area and once construction is completed, access via the entrance road would be restored. If construction requires closing the entrance to vehicles and rerouting is not possible, vehicles would be directed to the Pacific Heights Road access point, while pedestrians would be rerouted around the construction zone. Any necessary closures would be coordinated in advance with CDFW.

Under all three build alternatives, the Oak Knob Draw culvert would be widened to match the new highway width.

Conclusion

Given the above analysis of the proposed project, a *de minimis* impact finding is proposed for the OWA. Under the build alternatives, the Section 4(f) use of the area adjacent to SR 70 for the new right-of-way would not adversely affect the activities, features, or attributes of the overall OWA. The Section 4(f) use would temporarily affect a small of strip of land (less than 0.2 acre) west of SR 70 during construction and permanently incorporate 0.21 to 1.12 acres of land into the SR 70 right-of-way. Compared to the overall size of the OWA (approximately 11,800 acres), 0.21 to 1.12 acres is a small percentage of land that would be used by the project. The OWA facilities and related activities are primarily located west of the Feather River or occur at a distance from the proposed project, not adjacent to the area proposed for widening. Furthermore, the improvements associated with widening SR 70 would not interfere with OWA's function to preserve wildlife values and habitat, and would be coordinated with CDFW. Therefore, together with the avoidance and minimization measures listed below, implementation of the project as proposed would only have *de minimis* impacts on the Section 4(f) property.

Avoidance and Minimization Measures

The following measures are proposed to minimize harm to the Section 4(f) property.

- Access to OWA from SR 70 will be maintained at all times and will be coordinated with CDFW. If access is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular and pedestrian access around the construction area or provide signs directing vehicles to the Pacific Heights Road access point. Pedestrian access around the construction zone will be maintained at all times.
- In the event that any inadvertent damage occurs to the lands or entrance signs, the property will be restored to the condition that existed prior to the construction activities or better.

Public Review Process

Before making a *de minimis* determination, the public and agencies must have the opportunity to review and comment on the proposed *de minimis* impacts, either through review of the environmental document or participation in the public hearing on the environmental document as required under the regulations at 23 CFR 774.5(b)(2). The documentation in this report will be made available for public review in the draft initial study/environmental assessment, satisfying the public review requirements for the proposed *de minimis* determination. After public review and before the determination can be finalized, written concurrence is needed from CDFW that the Section 4(f) use of the OWA will not adversely affect the activities, features, or attributes that make the area eligible for protection under Section 4(f). The final determination and concurrence letter will be included in the final initial study/environmental assessment document.

Coordination with Agencies Having Jurisdiction

Coordination with CDFW, the agency with jurisdiction, will be initiated and Caltrans will inform CDFW of the impacts of the proposed project described in this report, discuss the measures to minimize impacts, and Caltrans's intention to adopt a *de minimis* determination. Written concurrence from the CDFW that the proposed project would have *de minimis* impacts on the OWA will be sought after the public comment period and will be included in the final environmental document.

Other Resources Evaluated Relative to the Requirements of Section 4(f)

This section of the report discusses parks, recreational facilities, wildlife and waterfowl refuges, and historic properties found within or next to the project area that do not trigger Section 4(f) protection because either: (1) they are not publicly owned, (2) they are not open to the public, (3) they are not eligible historic properties, (4) the project does not permanently use the property and does not hinder the preservation of the property, or (5) the proximity impacts do not result in constructive use.

No architectural or archaeological resources eligible for protection under Section 4(f) were identified in the area of potential effect for the proposed project.

Recreational Facilities

The resources evaluated within 0.5 mile of the proposed project are described below. The 0.5 mile area is in accordance with Caltrans guidance on complying with Section 4(f) regulations (California Department of Transportation 2013).

No existing parks, recreational trails, or bike paths were identified within the 0.5-mile area of the project. Within the 0.5-mile area, there are parks and trails proposed as part of the Rio d'Oro

Specific Plan, as well as future planned bike paths along roadways at the northern end of the project near Ophir Road (Figure 1).

Dingerville USA

Dingerville USA is a privately owned mobile home and recreational vehicle resort with a small golf course located between Pacific Heights Road and SR 70, south of the Rio d'Oro Specific Plan area. Because it is privately owned, it is not considered a recreational resource that would trigger Section 4(f) protection.

Rio d'Oro Development

The Rio d'Oro Specific Plan includes 35.4 acres of proposed parkland dispersed throughout the development and interconnected by trails (JKB Homes 2014). Section 4(f) applies to proposed recreation facilities that are presently publicly owned and formally designated in a city or county plan (see Question 25 in the Federal Highway Administration's 2012 Section 4[f] Policy Paper). The specific plan environmental impact report was certified and the specific plan was approved by Butte County in 2015. At this time, the parklands are not publicly owned, so they are not considered a recreational resource that would trigger Section 4(f) protection.

Planned Bike Paths

Review of Oroville's *Bicycle Transportation Plan* (City of Oroville 2010) and the Butte County *Transit and Non-Motorized Plan* (Butte County Association of Governments 2015) found four planned bike paths within the 0.5-mile area. The bicycle transportation plan designates bikeways based on priority for development, with the highest priority as those necessary to facilitate bicycle transportation. Second priority are those paths that will add connectivity in the regional area. The planned trails are shown on Figure 1 with numbers that correspond to the numbering used in the bicycle transportation plan and described below.

- 19—Feather River. A first priority Class I bike path planned along the east bank of the Feather River extending from Oroville Dam Boulevard and River Bend Park south to Pacific Heights Road, about 0.5 mile west of the northern extent of the project. This planned path is approximately 0.5 mile west of project limits at the Ophir Road/SR 70 intersection.
- 31—Ophir Road. A second priority Class I bike path planned to extend from SR 70 east along Ophir Road to Lower Wyandotte Road. As planned, this path is within the project limits for improvements at the Ophir Road/SR 70 intersection.
- 43—Pacific Heights Road. A second priority Class I bike path from SR 70 along Pacific Heights Road west to the entrance of OWA. As planned, this path is within the project limits for improvements at the Ophir Road/SR 70 intersection.
- 52—Pacific Heights Road. Class I bike path paralleling SR 70 along Pacific Heights Road from River Bend Park to the Ophir Road intersection. This path is noted in the Oroville's

Bicycle Transportation Plan as part of a regional project and is not assigned a priority. As planned, this path is within the project limits for improvements at the Ophir Road intersection with SR 70. A second section is planned to extend from the entrance to OWA on Pacific Heights Road south to SR 70. The BCAG plan indicates this bikeway is a Class II bike lane (Butte County Association of Governments 2015). As planned, this path is within the project limits for improvements near the Palermo Road/SR 70 intersection.

These bike paths are designated in the two plans noted above and included here as potential resources. The only first priority bike path in the project vicinity is outside the project limits. Widening SR 70 would not interfere with future development of the planned facilities, nor would it interrupt the continuity of the planned bike paths. The right-of-way for the bike paths is not in public ownership at this time and development would occur as funding becomes available. The provisions of Section 4(f) would not be triggered.

Section 6(f) Consideration

State and local governments often obtain grants through the Land and Water Conservation Fund Act (16 USC 460l-8[f] and 36 CFR 59.1) to acquire or make improvements to parks and recreation areas. Section 6(f) of the act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the U.S. Department of the Interior's National Park Service. Section 6(f) directs the Department of the Interior to ensure that replacement lands of comparable value and function, location, and usefulness are provided as conditions to such conversions.

The California State Parks Land and Water Conservation Fund grants list was reviewed for Butte County (California State Parks 2013). No recreational facilities at the OWA were found to have been developed or improved with grants from the Land and Water Conservation Fund Act.

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