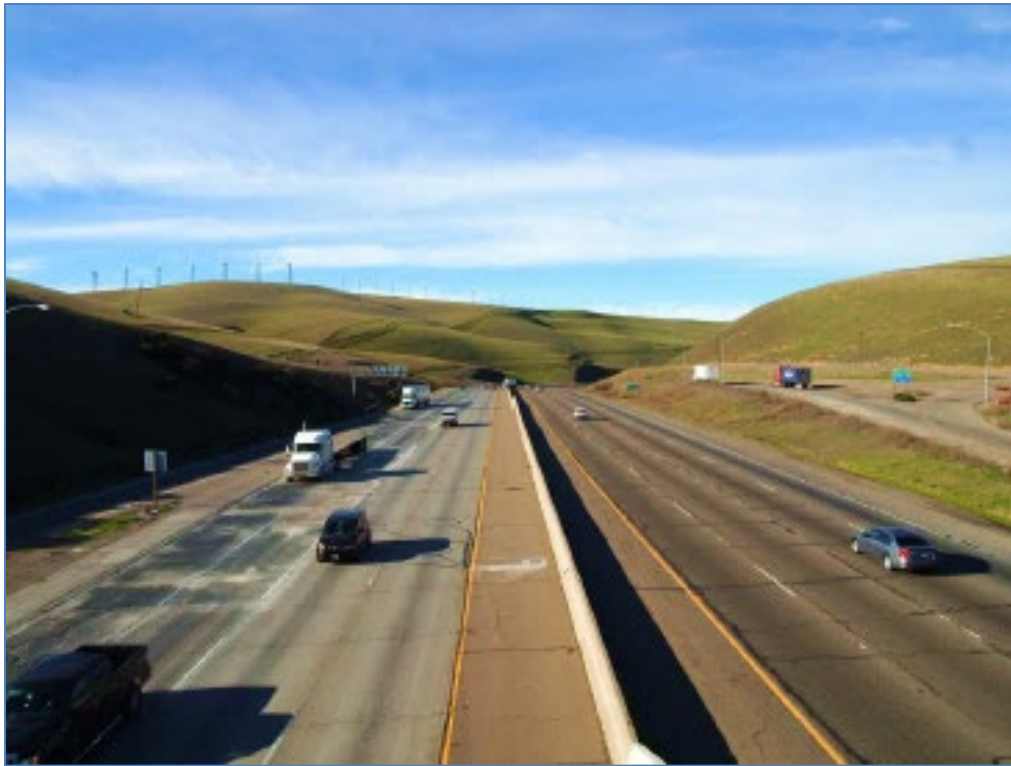


# **Interstate 580 Safety Lighting and Power Supply Installation Project**

ALAMEDA COUNTY, CALIFORNIA  
DISTRICT 4 – ALA – 580 (PM R1.3/ R6.0)  
EA 04-0K680/ EFIS 0416000125

## **Initial Study with Proposed Mitigated Negative Declaration**



**Prepared by the  
State of California, Department of Transportation**



**October 2019**

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## General Information about This Document

### What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study (IS), which examines the potential environmental impacts of the proposed Interstate 580 Safety Lighting and Power Supply Installation Project (project) located near the City of Livermore in Alameda County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document explains why the project is being proposed, the existing environment that could be affected by the project, potential impacts of each of the alternatives, and the proposed avoidance and minimization measures, and/or mitigation measures.

### What you should do:

- Please read this document.
- Additional copies of the document are available for review at the locations below, and the related technical studies are available at the Caltrans District 4 Office:

Caltrans District 4 Office  
111 Grand Ave  
Oakland, CA 94612

Livermore Public Library  
1188 South Livermore Ave  
Livermore, CA 94550

This document can also be accessed electronically at the following website:

<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>

- We would like to hear what you think. If you have comments regarding the proposed project, please send your written comments, including requesting that Caltrans hold a public meeting, to Caltrans by November 14, 2019.
- Send comments via U.S. mail to:  
Sabrina Dunn, Environmental Planner  
California Department of Transportation, District 4  
P.O. Box 23660, MS: 8B, Oakland, CA 94612
- Send comments via email to [sabrina.dunn@dot.ca.gov](mailto:sabrina.dunn@dot.ca.gov).

### What happens next:

After comments are received from the public and reviewing agencies, Caltrans 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.

### Alternate formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, or digital audio. To obtain a copy in one of these alternate formats, please call or write to the California Department of Transportation, District 4, Attn: Brian Gassner, Environmental Branch Chief, P.O. Box 23660, Oakland, CA 94623-0660; (510) 286-6025 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

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Improve existing roadway conditions and enhance traffic safety by installing lighting along eastbound Interstate 580 from West Grant Line Road Undercrossing to North Flynn Road Overcrossing near the City of Livermore in Alameda County (postmile R1.3 to postmile R6.0).

## Initial Study with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA  
Department of Transportation

Responsible Agencies: California Transportation Commission and California Department of Fish and Wildlife

10/7/2019  
Date of Approval

  
Stefan Galvez-Abadia,  
Chief, Office of Environmental Analysis  
California Department of Transportation  
CEQA Lead Agency

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# Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

## ***Project Description***

The California Department of Transportation (Caltrans) proposes to construct the Interstate 580 (I-580) Safety Lighting and Power Supply Installation Project to improve existing roadway conditions and enhance traffic safety on the Altamont Pass. This will be accomplished by installing lighting along eastbound I-580 from West Grant Line Road Undercrossing to North Flynn Road Overcrossing near the City of Livermore in Alameda County (Postmile [PM] R1.3 to PM R6.0). The project will also install new power poles and electrical vaults on the southern side of the same expanse of I-580 to provide power for the lighting.

## ***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 (IS) 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 agricultural lands and forest resources, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology/water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, and utilities and service systems.

With standard conservation measures, avoidance and minimization measures, and mitigation measures, the proposed project would have less than significant effects to aesthetics and less than significant impacts to biological resources, specifically the California tiger salamander (*Ambystoma californiense*; CTS) and California red-legged frog (*Rana draytonii*; CRLF).

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Melanie Brent  
Deputy District Director  
Office of Environmental Analysis  
California Department of Transportation District 4

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Date

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## CHAPTER 1 Proposed Project

### 1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA). Caltrans proposes to improve existing roadway conditions and enhance traffic safety by installing lighting along eastbound (EB) I-580 from West Grant Line Road Undercrossing to North Flynn Road Overcrossing near the City of Livermore in Alameda County (PM R1.3 to PM R6.0). The total length of the project is 4.7 miles. The Project Vicinity Map is shown below in Figure 1.

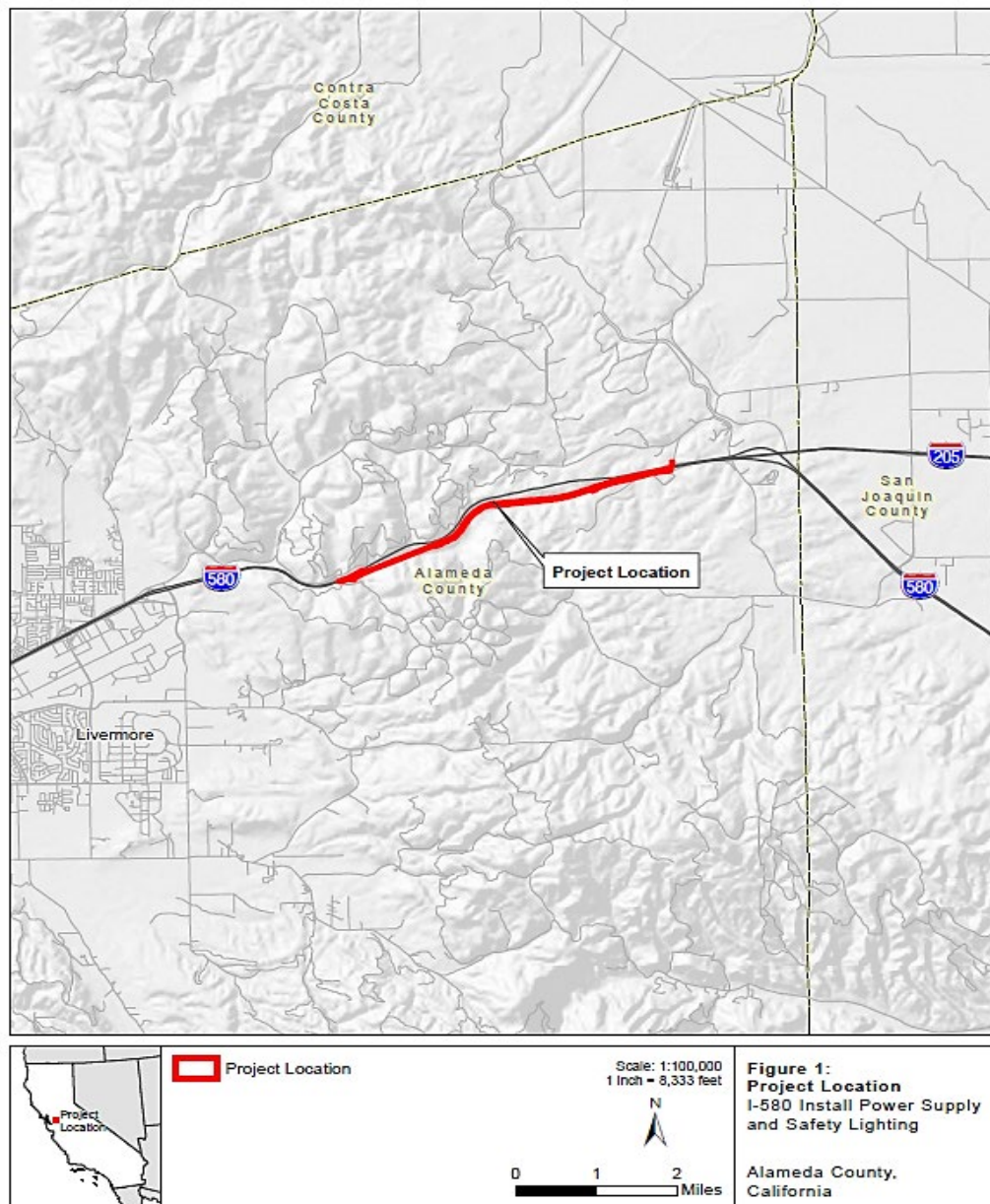


Figure 1. Project Vicinity Map

## **1.2 Background**

The I-580 east corridor is an east-west route in Alameda County that begins at the I-580/I-205 interchange near the San Joaquin/Alameda County border. It traverses westward to the I-580/State Route 238 (SR-238) split, continues along SR-238, and ends at the I-880/SR-238 interchange in San Leandro.

The corridor is 33 miles long and provides direct connections to two major north-south freeways: I-680 and I-880. With connections to the interstate network, I-580 is a major gateway for goods movement into and out of the San Francisco Bay Area's five seaports, three commercial airports, and four rail freight terminals, and is the primary route for EB travelers destined for the Sierra Nevada Mountains and Southern California.

The segment of I-580 within the project limits is classified as a rural divided freeway that consists of steep, mountainous terrain with eight lanes, an unpaved median, a paved 8-foot inside shoulder, and a paved 10-foot outside shoulder. The roadway contains a lengthy downhill section followed by several reverse and compound curves ("S"-curves) situated on a high embankment.

The safety lighting was previously part of the scope of Caltrans' I-580 Pavement Rehabilitation Project (04-3G59U4; State Clearinghouse Number 2013112047). Due to rugged terrain constraints and the absence of a nearby electrical power source, the safety lighting was removed from the scope of work for that project. As a result, this project was initiated to program the scope and cost of installing Pacific Gas and Electric Company (PG&E) facilities within state right-of-way (ROW) to enable the electrical service connection.

## **1.3 Purpose and Need**

The purpose of this project is to improve nighttime visibility and reduce the potential severity of accidents, while also improving maintenance worker safety on I-580 within the project limits.

Current Average Daily Traffic is 68,700 vehicles, 12.5 percent of which is truck traffic. The Caltrans Office of Traffic Safety performed a collision analysis with data obtained during the most recent three-year period available (January 1, 2015 to December 31, 2017). During that period, a total of 580 accidents occurred in this segment of EB I-580. This accident rate, measured in accidents per million vehicle miles (MVM), is higher than the expected accident rate for this type of facility statewide. On EB-580 at PM R1.622/R5.979, for example, the accident rate is 1.45 per MVM, while the statewide average for this type of facility is 0.31 per MVM. Of the 580 accident records for this section of EB I-580 over three years, 158 (27%) occurred during night hours. Of all accidents, about 36% resulted in injury or fatality.

The Federal Highway Administration (FHWA) Lighting Handbook (August 2012) provides guidance concerning the application of roadway lighting. The manual discusses findings from the American Association of State Highway and Transportation Officials Highway Safety Manual. In looking at the impact of highway lighting on all roadway types that previously had no lighting, for nighttime injury crashes, research has shown a resultant Crash Modification Factor

of 0.72 (showing that there would be a reduction of 28 percent in nighttime injury crash types). Based on the 3-year collision analysis data for this segment of EB I-580, this lighting project could be expected to result in about five fewer nighttime injury accidents per year.

## **1.4 Project Description**

The project will install approximately 120 light-emitting diode (LED) lighting fixtures along EB I-580 between North Flynn Road and Grant Line Road. The fixtures will be installed approximately every 180 feet on existing foundations in the median, about 9 feet from the inside shoulder.

The lighting pole foundations, necessary pull boxes, trench excavations, trenching, and subterranean conduit are currently being completed as part of the I-580 Pavement Rehabilitation Project. Construction for that project is expected to be completed December 2021.

To supply power for the lights, PG&E will install new underground and overhead electrical lines and power poles. A new subterranean electrical line will be installed within existing conduit from the north side of the Grant Line Road westbound (WB) on-ramp to the south side of the Grant Line Road eastbound off-ramp, where the subterranean power lines would transition to pole-mounted overhead power lines. An existing pull box will be replaced by a 4-foot-by-6.5-foot junction box. A new trench will be excavated to connect the electric line to the first utility pole.

The overhead electrical line would extend westward and would require approximately 48 wooden power poles, installed between about 200 to 400 feet apart. New overhead electrical lines would span approximately 3.2 miles from PM R1.5 to PM R4.7. The power poles and associated electrical lines will be south of, adjacent to, and parallel to EB I-580. Each overhead pole is approximately 22 inches in diameter, with a length of 30 to 40 feet, and will be installed to a depth of 7 feet.

Caltrans will supply power across EB I-580 at two locations. The electrical lines will be directionally bored under EB I-580 to provide power for the freeway lighting. At these two locations, service risers, conduits, and pull/junction boxes will be constructed in 20-foot by 80-foot areas at the south sides and transformer/cabinets will be constructed in 10-foot by 20-foot areas in the median behind the existing concrete barrier. The electrical lines will be installed in the conduit and connected to the lighting system.

To reduce potential lighting impacts, several project features have been developed:

- The 35-foot-tall light fixtures will have front-side shields and adjusted mast arm lengths of 15 feet to focus illumination on the roadway and limit the illumination of areas outside the paved areas on the south side of I-580.
- At PM 2.7, the existing concrete barrier will be extended about 500 feet to the east, towards Grant Line Road, to block light spillage onto roadside aquatic habitat on the south side of I-580.

- To minimize luminosity, 85-watt LED lights are proposed rather than the standard 165-watt bulbs.

The project will extend the existing concrete barrier at PM 2.7 by 500 feet to the east towards Grant Line Road. The concrete barrier will act as both a safety barrier to prevent errant vehicles hitting an existing concrete headwall and to provide shading of aquatic features on the southside of I-580 from the newly installed light fixtures.

The estimated duration of construction is 120 working days. Work will take place during daylight hours. The Traffic Management Plan (TMP) and details of the construction staging for the project will be developed and refined during the next phase of project design. TMP development will be supported by detailed traffic studies to evaluate traffic operations. The need for lane closures during off-peak hours or at night, or short-term detour routes, will be identified, as required. The TMP will include press releases to notify and inform motorists, businesses, community groups, local entities, and emergency services of upcoming closures or detours. Various TMP elements such as portable Changeable Message Signs and Construction Zone Enhanced Enforcement Program may be utilized to minimize delay to the traveling public.

The project is funded from the 2018 State Highway Operation and Protection Program, under Safety Improvements, Program Code 201.010. The total approximate cost of the project for support and capital, including construction costs, is \$7,538,000.

## 1.5 Project Features

The project will install about 120 new LED lights, 48 new wooden electrical poles with associated overhead electrical lines, underground electrical conduit with service risers and pull/junction boxes, and new concrete barrier.

As part of the project, Caltrans would implement standard conservation measures, avoidance and minimization measures (AMMs), and standard best management practices (BMPs) as outlined in the Caltrans' 2018 Standard Specifications and the Caltrans Construction Site Best Management Practices Manual. Measures include minimizing the area of impact, conducting preconstruction surveys, implementing water quality BMPs, and other construction-site BMPs.

## 1.6 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for project construction:

Agency	Permit/Approval	Status
United States Fish and Wildlife Service (USFWS)	Endangered Species Act, Section 7 Consultation, Biological Opinion (BO)	A BO expected from USFWS prior to completion of the Final Environmental Document (FED).
California Department of Fish and Wildlife (CDFW)	Section 2081 Agreement for Threatened and Endangered Species (Incidental Take Permit) for California tiger salamander and California red-legged frog	Application for Section 2081 agreement will be submitted following approval of the FED.

## **CHAPTER 2 Affected Environment; Environmental Consequences; and AMMs and/or Mitigation Measures**

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### **2.1 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 impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Standard Conservation Measures and project features, which can include both design elements of the project, standardized measures that are applied to Caltrans projects, such as 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 Chapter 1 for a detailed discussion of these features. All AMMs and/or Mitigation Measures are found in Appendix B.

## 2.1.1 AESTHETICS

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

### CEQA Significance Determinations for Aesthetics

This section is summarized from the *Visual Impact Analysis* for the proposed project, which was completed in March 2018.

The portion of I-580 within the project limits is eligible for designation as a scenic highway with views of undeveloped rolling hills covered with naturalized annual grass and scrub plantings on both sides of the highway. Existing vegetation removal is expected to be minimal.

#### a) No Impact

The proposed project area does not include any scenic vistas.

#### b) No Impact

It is not anticipated that the project will adversely affect any designated scenic resource, such as a rock outcropping, tree grouping, historic property, etc., as defined by CEQA statutes or guidelines, or by Caltrans' policy.

#### c) No Impact

The proposed safety lighting work would result in similar views from the roadway to what currently exists. The new safety lighting and PG&E poles would introduce new man-made elements to motorists, but viewers are accustomed to seeing similar lighting standards and utilities along the freeway west of the project area. Existing occasional views of the wind turbines located on the slopes of adjacent hills would remain. Based on preliminary investigation, the primary visual concerns associated with the proposed project involve the preservation of the naturalized annual grassland along the hillsides of this Eligible State Scenic



Highway corridor, and the cumulative impacts of both the light and utility poles. Contractor staging areas and operations will be conducted with minimal impacts to existing hillsides and sporadic scrub areas.

The new installations will primarily be seen by EB travelers because WB I-580 is at a different elevation than EB I-580 at several locations. Views of the roadway from surrounding areas would remain similar to existing conditions. There is limited residential development within the project limits and hills along I-580 restrict views of the project from any nearby residential areas.

The placement of aboveground utility poles on the right-side hillsides along eastbound I-580 would introduce another visual element familiar with the motoring public. However, the power poles are set back farther from the shoulder than the light standards and would often be screened from view by rolling hills.

#### **d) Less Than Significant**

The proposed project would introduce new lighting elements in an area that is currently lighted by the vehicle headlights.

Caltrans contacted three lighting manufactures to develop lighting alternatives that would limit the amount of illumination outside the paved area of I-580. One lighting manufacture (LeoTek) provided a design that utilized a reduced mounting height, short mast arm length, lower wattage bulb, and front side shielding. This option reduced overall illumination but still achieves the required illumination of the roadway. Front side shielding will also reduce the point-light source visible from outside the roadway. In comparison to the standard Caltrans highway lighting, the LeoTek alternative reduces illumination outside of the roadway by an estimated 79 percent and prevents illumination of any area outside the roadway to no greater than 0.5 lux, or the brightness between deep twilight and a full moon.

The placement of new safety lighting should be similar in type as commonly viewed along freeways. Over time the light poles would become an extension of similar installations west of the project. Views of the roadway from surrounding areas would remain similar to existing conditions. There are no residential views of the proposed project due to the roadway being nestled in between the naturalized grassy rolling hills and lack of development within the project limits. There is no public access adjacent to the highway corridor. Overall, the project elements will not substantially affect the appearance of the highway corridor and will be visually consistent with the character of the surrounding area.

#### **Standard Conservation Measures:**

**AES-1:** Use lighting installations that have a dull exterior finish and are thin in silhouette.

**AES-2:** Minimize vegetation removal to the maximum extent feasible in order to protect and preserve existing vegetation and scenic quality.

**AES-3:** Plan contractor staging and operations to protect and preserve naturalized annual grassland and sporadic shrubs to the maximum extent feasible.

**AES-4:** After construction, treat areas cleared for contractor access and trenching operations with appropriate erosion control measures where required.

**AES-5:** Provide replacement highway planting, if warranted, in all areas of highway planting removal where ROW allows. Where replacement planting is not possible at the removal location, provide replacement in adjacent planting areas along the project corridor.

## 2.1.2 AGRICULTURE AND FOREST RESOURCES

<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p>				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Agriculture and Forest Resources

#### a, b, c, d, e) No Impact

There are no prime farmland areas, no parcels under a Williamson Act contract, and no forest or timberlands within the project limits. All work is expected to occur within Caltrans ROW or in temporary construction easements. The land adjacent to the project limits is classified as "grazing land" by the Department of Conservation. This project does not propose changes in the use of the current roadway and will not necessitate changes in the use of adjacent properties. There are no changes anticipated to farmland or forestland.

#### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

### 2.1.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### CEQA Significance Determinations for Air Quality

##### a, b, c, d, e) No Impact

The proposed project is exempt from the requirement to determine conformity per 40 Code of Federal Regulation (CFR) 93.126: Table 2 – Guardrails, median barriers, crash cushions. The project will not conflict with or obstruct implementation of the air quality plan of the area, nor will it violate any air quality standards or contribute substantially to an existing air quality violation. Additionally, the project will not substantially increase any criteria pollutants that the area is in non-attainment for. Surrounding land use is rural and undeveloped; therefore, there are no sensitive receptors identified in the project area.

##### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.4 BIOLOGICAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Biological Resources

This section is summarized from the *Natural Environment Study* (NES) for the proposed project, which was completed in July 2019.

A biological study area (BSA) was established to evaluate the effects of the proposed project on natural communities and other biological resources. The BSA encompasses the project footprint along with a buffer to include areas that project construction activities may directly or indirectly impact (Figure 2).

For the proposed project, the BSA consists of approximately 160 acres located within the Altamont Pass I-580 transportation corridor between the San Joaquin County line and the City of Livermore in Alameda County. The BSA is primarily composed of the pavement and naturalized annual grassland, interspersed with shrublands.

A wildlife habitat assessment was conducted within the BSA in May 2018. Based on literature, database searches, and familiarity with the region, a total of 23 special-status wildlife species were initially evaluated to determine their potential to occur within the BSA. Following the wildlife studies, 12 of these species were dropped from consideration based on a lack of suitable habitat. The following special-status species were determined to have a low to high potential to occur within the BSA:

- California tiger salamander (*Ambystoma californiense*; CTS) – federal threatened, state threatened
- California red-legged frog (*Rana draytonii*; CRLF) – federal threatened, state species of special concern
- American badger (*Taxidea taxus*) – state species of special concern
- Bird Species
  - Tricolored blackbird (*Agelaius tricolor*) – state species of special concern
  - Western burrowing owl (*Athene cunicularia hypugaea*) – state species of special concern
  - White-tailed kite (*Elanus leucurus*) – fully protected species under California Fish and Game Code
  - California horned lark (*Eremophila alpestris actia*) – included on the CDFW's Special Animals List
  - Loggerhead shrike (*Lanius ludovicianus*) – state species of special concern
- Bat Species
  - Pallid bat (*Antrozous pallidus*) – state species of special concern
  - Townsend's big-eared bat (*Corynorhinus townsendii*) – state species of special concern
  - Hoary bat (*Lasiurus cinereus*) – included on the CDFW's Special Animals List

The proposed project is expected to require the following permits or actions:

- An Incidental Take Permit (ITP) from the CDFW for Central California Distinct Population Segment (DPS) of CTS
- A Biological Opinion (BO) from the USFWS for the Central California DPS of CTS and CRLF



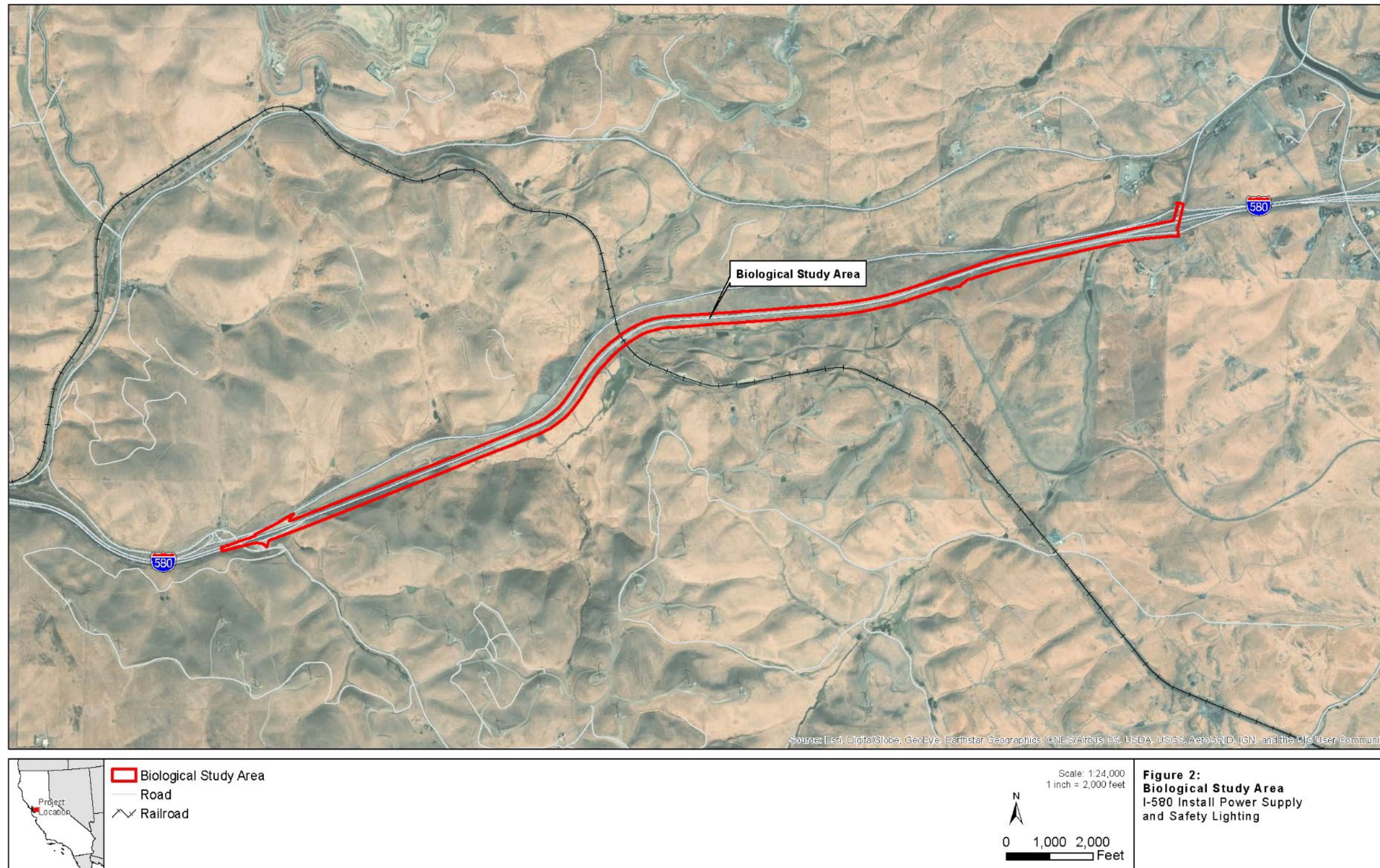


Figure 2. Biological Study Area



#### **a) Less Than Significant with Mitigation**

Of the aforementioned species, Caltrans has determined that the project will have no effect on the American badger, bat species, or bird species. However, the proposed project “may affect and is likely to adversely affect” CTS and CRLF.

Protocol-level surveys for CTS and CRLF were not conducted for this project because of access limitations and because existing information strongly suggests that even if individuals were not found during field surveys, their absence during surveys may not be sufficient evidence to conclude that the species are absent from the BSA. Both CTS and CRLF are inferred to be present for the following reasons:

- The project occurs within the known range of these species;
- The presence of suitable habitat;
- There is suitable habitat within or near the project area that is connected to known occupied habitat;
- There are several documented occurrences of CTS in the California Natural Diversity Data Base near the project area;
- The BSA is potentially accessible to these species.

#### ***California tiger salamander (CTS)***

The Central California DPS of CTS is listed as federally threatened under the Federal Endangered Species Act (FESA) and state threatened under the California Endangered Species Act (CESA). There are no documented occurrences of CTS inside of the BSA limits. However, there are 13 occurrences located within two miles of the BSA boundaries, four of which are within the dispersal range of the species.<sup>1</sup>

CTS require two different habitats to complete their life cycle. During the dry summer and fall months are spent in underground burrows in upland habitat. On rainy fall and winter nights, CTS then leave their burrows to feed and migrate to nearby ponds or seasonal water sources for breeding.

Suitable upland habitat in the form of grassland is present within the BSA, but there is no designated critical habitat or suitable breeding habitat inside of the BSA.<sup>2</sup> There are numerous

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<sup>1</sup> **Dispersal range** refers to the distance a species can travel away from an existing population.

<sup>2</sup> **Critical habitat** is the specific areas within the geographic area, occupied by the species at the time it was listed, that contain the physical or biological features that are essential to the conservation of endangered and threatened species and that may need special management or protection.



documented CTS occurrences in ponds within two miles of the BSA boundary, so it is possible that adults may travel into the BSA from surrounding suitable habitat areas.

Due to the presence of known populations and potential breeding ponds within dispersal range of the BSA, Caltrans has inferred the presence of CTS throughout the BSA.

### ***California red-legged frog (CRLF)***

The CRLF is listed as federally threatened under the FESA and as a state species of special concern under the CESA. There are seventeen recorded occurrences of CRLF within 2 miles of the BSA boundaries, five of which are within 1 mile of the BSA. Of these five occurrences, four occur in ponds, streams, or wetlands.

Approximately 16 acres of designated CRLF critical habitat is present within and adjacent to the BSA. Critical habitat is determined based on the presence of physical and biological Primary Constituent Elements (PCE) that are essential to the conservation of a species. For CRLF, these elements include:

1. Aquatic breeding habitat. Aquatic breeding habitat consists of standing bodies of fresh water, including: natural and man-made ponds, slow-moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks.
2. Non-breeding aquatic habitat. Non-breeding aquatic habitat consists of fresh water habitats that may not hold water long enough to be suitable for breeding, but that do provide potential for shelter, foraging, predator avoidance, and aquatic dispersal. Non-breeding habitat may include plunge pools within intermittent creeks, seeps, quiet water sanctuary areas during high water flows, and springs of sufficient flow to withstand the summer dry period.
3. Upland habitat. Upland habitat provides shelter, foraging, and predator avoidance areas. These areas are located within 200 feet of the edge of aquatic and riparian habitat and consists of grasslands, woodlands, or wetland/riparian vegetation. Upland features contribute to filling and drying of wetland or riparian habitat and maintain suitable periods of inundation in pools for breeding, non-breeding, feeding, and shelter. Upland habitat can include features such as boulders, rocks, downed trees, small mammal burrows, and moist leaf litter.
4. Dispersal habitat. Dispersal habitat, which allows for movement between occupied sites, consists of accessible upland or riparian habitat within designated critical habitat units located between occupied locations within 0.70 mile of each other. Dispersal habitat includes natural and altered habitats that do not contain barriers. Barriers may include heavily traveled roads constructed without culverts or bridges. Dispersal habitat does not

include moderate-to-high-density urban or industrial development, large reservoirs, or areas that do not contain other PCEs.

The critical habitat within the BSA contains few PCEs for CRLF. No aquatic breeding habitat occurs within the critical habitat mapped within the BSA, although there is non-breeding aquatic habitat and upland habitat within the critical habitat mapped within the BSA; the upland habitat occurs within 200 feet of the edge of aquatic and riparian habitat. The roadway does not contain any PCEs and acts as a barrier to dispersal. Of the total 7.97 acres of suitable habitat that will be impact by the project, there is expected to be approximately 2.84 acres of temporary impacts and 0.04 acres of permanent impact to critical habitat. The acreage impact to critical habitat for this project is less than 0.001 percent of the total critical habitat area and the disturbance will be minimal, therefore Caltrans does not anticipate an adverse modification to CRLF critical habitat. See Table 1 for overall estimated acreage of temporary and permanent impacts to suitable habitat.

There are four documented occurrences in ponds within 1 mile of the BSA, as well as numerous ponds and streams visible on aerial imagery within 1 mile of the BSA that could contain suitable breeding habitat. Adults and juveniles originating from these ponds and streams may potentially use the BSA for upland refuge. As such, CRLF have potential to occur in grassland, fresh emergent wetland, and other aquatic habitats within the BSA.

Due to the presence of known populations and potential breeding ponds within dispersal distance of the BSA and designated critical habitat in the region, Caltrans has inferred presence of CRLF throughout the BSA.

### ***Project Impacts***

The proposed project would result in approximately 7.93 acres of temporary impact and approximately 0.04 acres of permanent impact to suitable CTS and CRLF habitat. See Table 1 below for estimated impacts to suitable habitat types for both species.

*Table 1. Temporary and Permanent Impacts within the BSA to Suitable Habitat for Listed Species*

Species	Suitable Habitat Types	Habitat Impacts (Acres)		
		Temporary	Permanent	Total
California tiger salamander California red-legged frog	Annual Grassland	7.88	0.04	7.92
California tiger salamander California red-legged frog	Shrublands	0.05	0.00	0.05
<b>Total</b>		<b>7.93</b>	<b>0.04</b>	<b>7.97</b>

The project has the potential to cause direct impacts to CTS and CRLF from construction activities, such as site preparation, handling of stockpiles and stored materials, installation of safety lighting, and installation of the power supply through trenching.

Additionally, there may be indirect impacts related to the addition of artificial light from installing the light fixtures. Artificial light introduced by the project might have the potential to alter dispersal and breeding behaviors for CTS and CRLF. Though no research has been done on the effects of light on these specific species, studies on similar species show altered behavioral and physiological traits that could imply similar effects for these species. In order to account for this possibility, Caltrans has developed a project-specific lighting fixture to target light onto the pavement and minimize light spillage off the edge of the roadway. The lighting fixtures will have a reduced mounting height, short mast arm length, lower bulb wattage, and front side shielding to reduce illumination of areas outside of the roadway by approximately 79 percent compared to standard Caltrans roadway lighting fixtures.

Additionally, Caltrans will extend concrete barrier present at one sensitive location (PM 2.65) by about 500 feet to create a shadow effect and eliminate lighting impacts.

### ***Mitigation***

Caltrans is in the process of obtaining a BO from the USFWS for CTS and CRLF. A Biological Assessment (BA) was submitted to USFWS on November 9, 2018. Caltrans will obtain an ITP from CDFW for CTS and CRLF during the next phase of the project.

As required by FESA, Caltrans would implement reasonable and prudent measures to minimize and avoid take of listed species.

To reduce the potential adverse impacts, Caltrans would also propose compensatory mitigation to offset any adverse impacts caused by the project. Caltrans proposes that compensatory mitigation, in the form of habitat restoration and preservation, would be provided at a 1:1 ratio for temporary habitat impacts, and a 3:1 ratio for permanent habitat impacts. Mitigation for temporary impacts would be accomplished through restoration on-site of 7.93 acres of CTS and CRLF habitat. Mitigation for permanent impacts would be accomplished through preservation of 0.12 acres of suitable habitat off-site through purchase of credits at a USFWS-approved conservation bank that provides habitat for multiple species of concern and sensitive habitats.

### ***Summary***

AMMs and Mitigation Measures (MMs) listed below and in Appendix B, in conjunction with the project-specific lighting fixtures, concrete barrier, and proposed compensatory mitigation, reduce potential impacts to CTS and CRLF. The amount and quality of habitat proposed to be impacted by the project is minimal, and impacts from the project would not affect the persistence of local populations of CTS or CRLF within the Altamont Pass region.

Because the impacts from the project would not jeopardize the continued existence of CTS and CRLF, and thus would not present a significant impact to the species as a whole, Caltrans has determined that the project will have a “Less than Significant with Mitigation Incorporated” effect on species identified as a candidate, sensitive, or special-status species.

**b) No Impact**

This project would not affect riparian habitat or other sensitive natural communities.

**c) No Impact**

This project would not affect any federally protected wetlands as defined by Section 404 of the Clean Water Act.

**d) No Impact**

This project will not affect any migratory wildlife corridors or the movement of any native resident or migratory fish or wildlife species. I-580 represents a major barrier to dispersal of CTS and CRLF; the paved surface of I-580 is not considered to be a viable dispersal corridor because heavy traffic likely causes mortality of almost all individuals attempting to cross. This project will not increase the paved surface of I-580.

This project will not impede the use of native wildlife nursery sites.

**e) No Impact**

This project will not conflict with any local policies or ordinances protecting biological resources.

**f) No Impact**

This project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

**Standard Conservation Measures**

**BIO-1:** Work Window for Nesting Birds. To the extent practicable, clearing and grubbing activities should occur outside of the bird nesting season (February 1 to September 30). When it is necessary to conduct clearing during the nesting season, preconstruction surveys would be conducted within the BSA prior to clearing and grubbing of vegetation. If preconstruction surveys indicate the presence of nests of any special-status species, CDFW/USFWS would be consulted to determine the appropriate buffer area to be established around the nesting site for the duration of the breeding season.

**BIO-2:** Preconstruction Surveys for Nesting Birds. Pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction for activities occurring during the breeding season (February 1 to September 30).

**BIO-3:** Non-disturbance Buffer for Nesting Birds. If work is to occur within 300 feet of active raptor nests or 100 feet of active passerine nests, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance.

**BIO-4:** Water Quality Inspection. Biologist(s), in consultation with water quality inspector(s), will inspect the site after a rain event to ensure that the stormwater BMPs are adequate.

**BIO-5:** Vehicle Use. Project employees will be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

**BIO-6:** Trash Control. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a day from the work area.

**BIO-7:** Prohibition of Monofilament Erosion Control. Plastic mono-filament netting (erosion control matting) or similar material will not be used for the project because CRLF and CTS may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

**BIO-8:** Concrete Waste. All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of habitat and at a minimum of 150 feet from any aquatic habitat, culvert, or drainage feature.

**BIO-9:** Revegetation Following Construction. All areas that are temporarily affected during construction will be revegetated with an assemblage of native grass, shrub, and trees. Invasive, exotic plants will be controlled within the Project Construction Area (PCA) to the maximum extent practicable, pursuant to Executive Order 13112.

**BIO-9:** Care of Injured or Dead Species. Listed species found injured will be cared for by a licensed veterinarian or a wildlife rehabilitation facility. After hours, interim care may be provided by another experienced person, including the on-site biologist, until the animal can be delivered to a facility. Dead individuals of any listed species would be preserved by freezing and held in a secure location. The USFWS and/or CDFW will be notified of the discovery of death or injury to a listed species occurring as a result of project-related activities or if observed at the project site.

## **AMMs and/or MMs:**

**AMM BIO-1:** Permits. Caltrans will include a copy of the BO and ITP within the construction bid package of the proposed project. The Resident Engineer or their designee will be responsible for implementing the Conservation Measures and Terms and Conditions of the USFWS BO and the CDFW ITP.

**AMM BIO-2:** Reinitiation of Consultation. Caltrans will reinitiate consultation if the project results in effects to listed species not considered in the USFWS BO or CDFW ITP.

**AMM BIO-3:** Biological Monitor Approval. Caltrans will submit the names and qualifications of the biological monitor(s) for USFWS/CDFW approval prior to initiating construction activities for the proposed project. Only agency-approved biological monitors would implement the monitoring duties outlined in the BO, including delivery of the Worker Environmental Awareness Training Program.

**AMM BIO-4:** Biological Monitoring. The agency-approved biologist(s) will be on-site during initial ground-disturbing activities, and thereafter as needed to fulfill the role of the approved biologist as specified in project permits. The biologist(s) will keep copies of applicable permits in their possession when on-site. Through the Resident Engineer or their designee, the agency-approved biologist(s) shall be given the authority to communicate either verbally, by telephone, email or hardcopy with all project personnel to ensure that take of special-status species is minimized and permit requirements are fully implemented. Through the Resident Engineer or their designee, the agency-approved biologist(s) shall have the authority to stop project activities to minimize take of special-status species or if he/she determines that any permit requirements are not fully implemented. If the agency-approved biologist(s) exercises this authority, the agencies shall be notified by telephone and email within 48 hours.

**AMM BIO-5:** Worker Environmental Awareness Training. All construction personnel will attend a mandatory environmental education program delivered by an agency-approved biologist prior to working on the project. The program would focus on the conservation measures that are relevant to employee's personal responsibility and would include an explanation as how to best avoid take of sensitive species. Distributed materials would include a pamphlet with distinguishing photographs of sensitive species, species' habitat requirements, compliance reminders, and relevant contact information. Documentation of the training, including sign-in sheets, would be kept on file and would be available on request.

**AMM BIO-6:** Preconstruction Surveys. Prior to any ground disturbance, preconstruction surveys will be conducted by an agency-approved biologist for listed species. These surveys will consist of walking surveys of the project limits and, if possible, accessible adjacent areas

within at least 50 feet of the project limits. The biologist(s) will investigate all potential cover sites. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity. The entrances and other refuge features within the project limits will be collapsed or removed following investigation.

**AMM BIO-7: Prevention of Wildlife Entrapment.** To prevent inadvertent entrapment of special-status species during construction, excavated holes or trenches more than 1 foot deep with walls steeper than 30 degrees will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 4-foot-high vertical barrier, independent of exclusionary fences, will be used to further prevent the inadvertent entrapment of special-status species. If it is not feasible to cover an excavation or provide an additional 4-foot-high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist will immediately relocate the animal to an area outside of the work area. A USFWS/CDFW approved location will be designated prior to the start of construction. The USFWS/CDFW will be notified of the incident by telephone and electronic mail within 48 hours.

**AMM BIO-8: Wildlife Exclusion Fencing.** The limits of concrete barrier, electrical pole installation, electrical trenching, and underground vault installation will be delineated with high visibility wildlife exclusion fencing. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the delineated project construction area. Wildlife exclusion fencing will not be installed for temporary access area within species habitat required for installing/stringing the electrical line between poles. Construction activities occurring outside of suitable habitat for special-status species will not require wildlife exclusion fencing.

**AMM BIO-9: Listed Species On-site.** The Resident Engineer will immediately contact the agency-approved project biologist(s) if a CRLF or CTS is observed within a construction zone. The Resident Engineer will suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily or an agency-approved protocol for removal has been established.

**AMM BIO-10: Work Window for CTS and CRLF.** All work within suitable habitat for CTS and CRLF will occur between April 15 and October 15, when the species are unlikely to be active and there is less potential for an individual to enter the work area.

**AMM BIO-11: Material Storage.** CTS and CRLF are attracted to cavity-like structures such as pipes and may seek refuge under construction equipment or debris. They may become trapped or injured if such materials are moved. All construction pipes, culverts, or similar

structures, construction equipment or construction debris left overnight within the work area will be inspected by the agency-approved biological monitor prior to being moved.

**AMM BIO-12: Night Work.** To the extent practicable, nighttime construction will be minimized.

**AMM BIO-13: Night Lighting.** Artificial lighting of the project construction area during nighttime hours will be minimized to the maximum extent practicable.

**MM BIO-1:** Caltrans will compensate for the project's temporary impacts to CTS and CRLF habitat with on-site compensatory mitigation at a 1:1 ratio, totaling 7.93 acres.

**MM BIO-2:** Caltrans will compensate for the project's permanent impacts to 0.04 acre of CTS and CRLF habitat with off-site compensatory mitigation at a USFWS-approved conservation bank within Alameda County at a 3:1 ratio, totaling 0.12 acre.



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## 2.1.5 CULTURAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Cultural Resources

This section is summarized from the *Completion of Section 106 Compliance* memorandum that was prepared for this project, dated October 16, 2018. This section also summarizes the Geologic and Paleontological Environmental Study/ Memorandum prepared for this project, which is dated October 12, 2018.

No significant historical resources are within the project area. The Stone Cut Railroad Underpass, found within the project area, is not eligible for the National Register of Historic Places (NRHP); Caltrans received this concurrence on October 16<sup>th</sup>, 2018, from State Historic Preservation Office (SHPO).

#### a) **No Impact**

No archaeological resources have been recorded in the area that will be affected by the proposed project. A survey for archaeological resources was completed on August 2018.

#### b) **No Impact**

No archaeological resources have been recorded in the area that will be affected by the proposed project.

#### c) **No Impact**

The excavations for the proposed project will be relatively shallow. There will be no impacts to sensitive paleontological resources or unique geologic features within the project limits.

**d) No Impact**

There are no known interred human remains within the project vicinity.

**Standard Conservation Measures:**

**CULT-1:** If remains are discovered during excavation, all work within 60 feet of the discovery will halt and Caltrans' Cultural Resource Studies Office will be called. Caltrans Cultural Resource Studies Office staff will assess the remains and, if determined human, will contact the County Coroner as per Public Resources Code (PRC) Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC) who will assign a Most Likely Descendant. Caltrans will consult with the Most Likely Descendant on treatment and reburial of the remains. Further provisions of (PRC) 5097.98 are to be followed as applicable.

**AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.6 GEOLOGY AND SOILS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Geology and Soils

This section summarizes the Geologic and Paleontological Environmental Study/ Memorandum prepared for this project, which is dated October 12, 2018.

#### a) No Impact

The proposed work will not further expose the public to adverse effects from earthquakes, liquefaction, landslides, or other geologic hazards.

**b) No Impact**

The work activities are not expected to impact soil conditions. There will be no disturbance to the native ground or native subsurface from this project.

**c, d) No Impact**

The project will be located on artificial fill, alluvium, and bedrock containing unnamed shale, siltstone, and unnamed sandstone. The project is not located on a geologic unit that is unstable, nor is it located on an expansive soil.

**e) No Impact**

There are no nearby residences and the project does not propose to install sewers or wastewater treatment systems.

**AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.7 GREENHOUSE GAS EMISSIONS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans' determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows.			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				

### Climate Change

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 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<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF<sub>6</sub>), and various hydrofluorocarbons (HFCs). CO<sub>2</sub> is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO<sub>2</sub>.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with 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). This analysis will include a discussion of both.

## **Regulatory Setting**

This section outlines state efforts to comprehensively reduce GHG emissions from transportation sources.

### **State**

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

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 year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (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 [H&SC] 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.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 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.

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for 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 how it will achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO 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.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 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<sub>2</sub>e).<sup>3</sup> 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.

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.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands ... is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order B-55-18, (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

## **Environmental Setting**

The proposed project is in a rural area, with a primarily natural-resources based agricultural and tourism economy. I-580 is the main transportation route to and through the area for both passenger and commercial vehicles. The nearest route that connects to this stretch of roadway is I-205, six miles to the east. Traffic counts are moderate to high and this segment of I-580 is intermittently congested. The Metropolitan Transportation Commission (MTC) is the Regional

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<sup>3</sup> GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO<sub>2</sub> is the most important GHG, so amounts of other gases are expressed relative to CO<sub>2</sub>, using a metric called "carbon dioxide equivalent" (CO<sub>2</sub>e). The global warming potential of CO<sub>2</sub> is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO<sub>2</sub>.



Transportation Agency guides transportation development. The City of Livermore General Plan: Climate Change elements address GHGs in the project area.

### State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 MMTCO<sub>2</sub>e for 2017, with the transportation sector responsible for 41% of total GHGs (Figure 3). It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (Figure 4) (ARB 2019a).

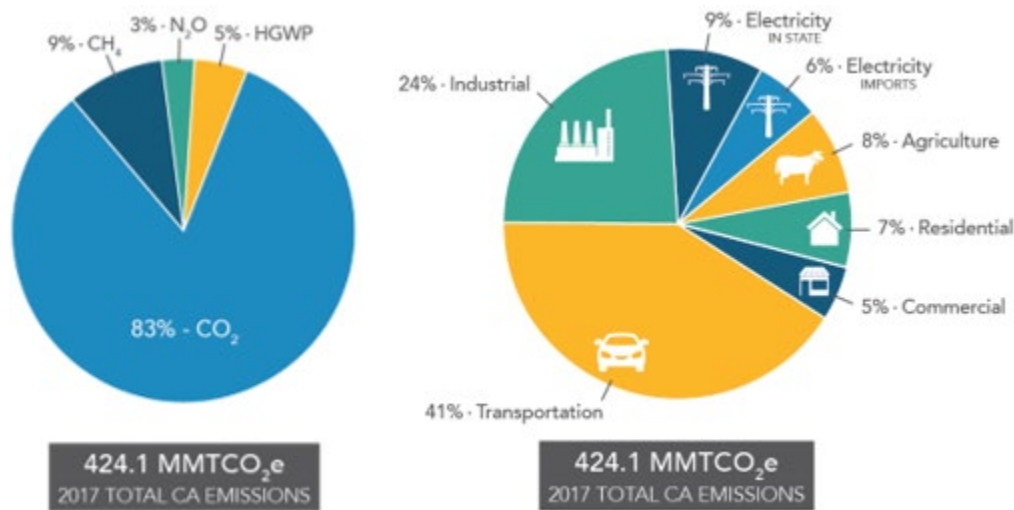


Figure 3. California 2017 Greenhouse Gas Emissions

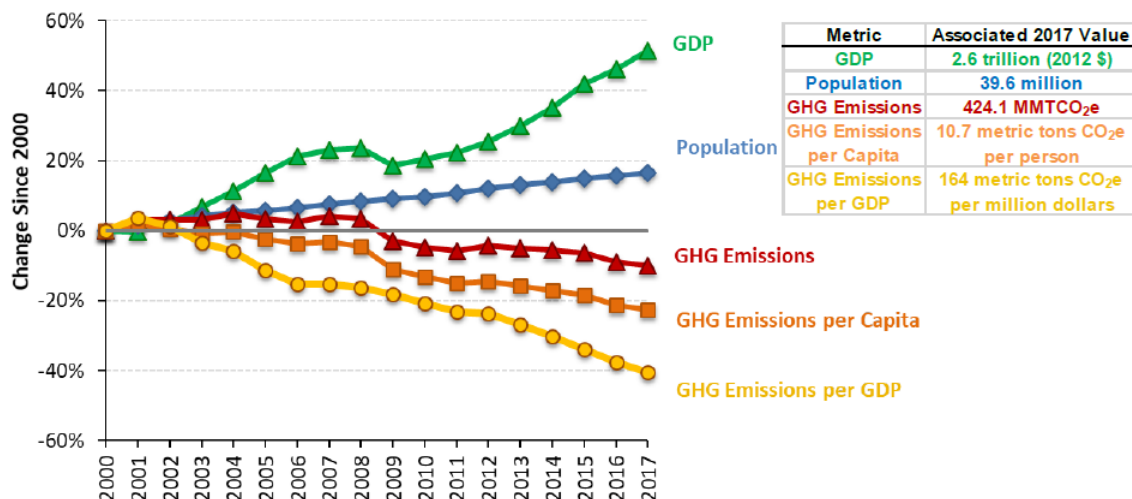


Figure 4. Change in California GDP, Population and GHG Emissions since 2000

Source: ARB 2019b

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, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects 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.

## **Regional Plans**

ARB sets regional targets for California's 18 MPOs to use in their RTP/SCSs to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed project is included in the MTC's RTP/SCS, Plan Bay Area (PBA). The regional reduction target for MTC is 10% percent by 2020 and 19% by 2035 (ARB 2019c).

## **Project Analysis**

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs. CO<sub>2</sub> emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH<sub>4</sub> and N<sub>2</sub>O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512.) 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. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

## **Operational Emissions**

The purpose of the proposed project is to install lighting and associated power supply items on in the medium of I-580 within the project limits, which will not increase the vehicle capacity of the roadway. Non-capacity increasing projects generally causes minimal or no increase in operational GHG emissions because the project would not increase the number of travel lanes on (route or location), no increase in vehicle miles traveled (VMT) would occur as result of project implementation. However, since the project involves direct energy use, there are GHG emissions associated with operation of the lights themselves.

The nightly operation of this project would produce some GHG emissions by consuming grid energy. It is estimated that a single 140-watt roadway LED, as proposed for this project,

produces 324 pounds of GHGs per year (USEPA 2016). For the 120 lights proposed, this would amount to about 17.6 MTCO<sub>2</sub>e emissions per year. In addition, SB 100 (DeLeon 2018) declared that 100 percent of total retail sales of electricity in California should come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. This means that GHG emissions from energy consumption will gradually reduce to zero as utilities come into compliance with this regulation. Furthermore, the proposed project does not increase roadway capacity or vehicle miles traveled that would increase operational GHG emissions. Some GHG emissions during the construction period would be unavoidable, but no significant increase in operational GHG emissions is expected.

### **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 analysis was focused on vehicle-emitted GHGs. CO<sub>2</sub> is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHG, including methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbon (HFCs), and black carbon (BC).

Based on available project information, the construction-related GHG emissions were calculated using the Road Construction Emissions Model (RCEM), version 8.1.0, provided by the Sacramento Metropolitan Air Quality Management District. The estimated total amount of CO<sub>2</sub> produced due to a construction interval of 6 months is 166.59 tons, summary shown below (Table 2).

*Table 2. Summary of Construction-related GHG Emission Estimates*

	Construction-related GHG Emissions			
	Parameters			TOTAL
	CO <sub>2</sub> (tons)	CH <sub>4</sub> (tons)	N <sub>2</sub> O (tons)	CO <sub>2</sub> e (MT) <sup>1</sup>
TOTAL	166.59	0.04	0.00	152.52

Gases are converted to CO<sub>2</sub>e by multiplying by their global warming potential (GWP). Specifically, GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO<sub>2</sub>).

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

## CEQA Conclusion

While the proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

## Greenhouse Gas Reduction Strategies

### Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (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 farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California* (Figure 5).

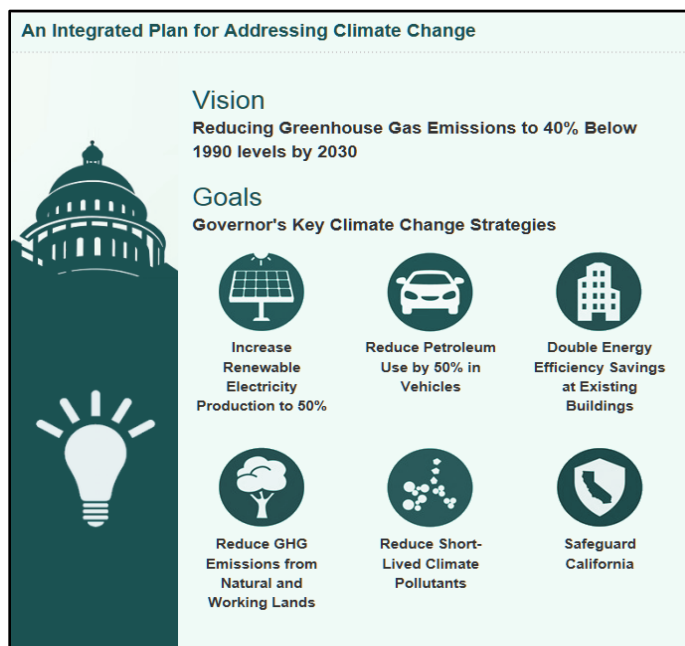


Figure 5. California Climate Strategy

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and

toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the 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 an 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. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO<sub>2</sub> reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

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
- 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 sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

## **CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES**

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 Caltrans' statewide activities 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.

- The project will use energy-efficient LED lighting fixtures, which have reduced GHG emissions from energy consumption as compared to fluorescent lighting.
- Construction contractors will comply with Caltrans Standard Specifications to comply with all federal, state, and local air quality requirements, such as proper construction vehicle maintenance and idling restrictions. Measures that reduce vehicle emissions also help reduce GHGs.
- A TMP will be developed to alleviate and minimize delays to the traveling public and potential emissions from idling traffic.

## **Adaptation**

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

## **State Efforts**

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate*

*Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- Resilience is the "capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience". Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise (SLR) projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of EO B-30-15, the

Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

## **Caltrans Adaptation Efforts**

### ***CALTRANS VULNERABILITY ASSESSMENTS***

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* – Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

## **Project Adaptation Analysis**

### ***SEA LEVEL RISE ANALYSIS***

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.



### ***FLOODPLAINS***

The project location is located not in a floodplain or adjacent to any streams or water bodies that could be affected by climate change so as to present a hazard to the new facility or be affected by the new facility.

### ***WILDFIRE***

The project does present potential wildfire concerns, associated with increased frequency and intensity of wildfires, for this project are related to the surrounding land cover. The project area is in a grassy area with frequent windy conditions. According to the U.S Forest Service's Fire Occurrence Database, there have been over 50 fires recorded between 2011 to 2019, the length of the last drought. Consideration of methods for reducing wildfire risks--such as installing more of the utility features underground and use of metal power pole, instead of wooden poles-- will be done in the next phase of project development.

## 2.1.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Hazards and Hazardous Materials

#### a) No Impact

Shallow soils along the roadside often contain aerially deposited lead (ADL) from past gasoline emissions. The average lead concentrations in the 7-foot drill cuttings from PG&E pole-related excavations are expected to be well below the threshold defining lead-containing soil. Soil that is excavated will be treated as "clean."

The trenching work for electrical system installation will disturb shallow roadside soils that likely contain regulated levels of lead. However, the minimal volumes of soils displaced by these activities can be addressed on-site, avoiding off-site disposal. The project will implement BMPs according to special provision 12-11.09 "Minimal Disturbance of Regulated Material Containing ADL."

**b) No Impact**

Based on the preliminary investigations, there is no potential for release of hazardous materials into the environment.

**c) No Impact**

The project is not located within 0.25 miles of a school.

**d) No Impact**

The project is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

**e, f) No Impact**

The project is not located within an airport land use plan or within two miles of a public airport or public use airport. Nor is the project located in the vicinity of a private airstrip.

**g) No Impact**

The project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

**h) No Impact**

There are no wildlands or urban areas adjacent to the project site. The project is surrounded by grazing lands, rural dwellings, and generally undeveloped areas. The project would not increase the risks of exposure to fire hazards for the surrounding community.

**Standard Conservation Measures:**

**HAZ-1:** Caltrans Standards will be followed for the proper handling and disposal of any unanticipated hazardous waste discovered during construction.

**HAZ-2:** The project will implement BMPs according to special provision 12-11.09 "Minimal Disturbance of Regulated Material Containing ADL."

**AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.9 HYDROLOGY AND WATER QUALITY

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **CEQA Significance Determinations for Hydrology and Water Quality**

This section summarizes the Location Hydraulics Study memorandum prepared for this project, which is dated October 3, 2018. This section also summarizes the Water Quality Study that was prepared for this project, which is dated May 2018.

This project is under jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the Central Valley RWQCB. This project would result in less than an acre of disturbed soil area (DSA) and will require a Water Pollution Control Plan (WPCP). The project lies in Hydrological Sub Areas 204.30 and 543.00 in hilly rural terrain. Runoff drains into Mountain House Creek and Arroyo Las Positas, both listed as 303(d) impaired water bodies.

### **a) No Impact**

Water quality impacts are minimum because there is less than one acre of DSA. There will be no permanent water quality impacts.

### **b) No Impact**

Project work activities will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

### **c, d) No Impact**

There will be no encroachment into creeks or other water bodies. Existing drainage patterns will not be substantially altered and will not result in substantial erosion, siltation, or flooding on- or off-site. After construction, areas cleared for contractor access and trenching operations will be treated with appropriate erosion control measures.

### **e) No Impact**

The proposed project will add minimal new impervious area and will not create or contribute to existing runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

### **f) No Impact**

The project will not substantially degrade water quality. Potential temporary impacts include sediment from disturbed soil areas and impacts to pH from runoff of fresh concrete. Temporary construction site BMPs will avoid these impacts. Permanent treatment is not necessary.

### **g, h, and i) No Impact**

The project does not lie within an existing Federal Emergency Management Agency Base Floodplain. Therefore, there will be no impacts to housing or structures in any 100-year flood hazard areas, and there will be no impacts to people or structures from flooding.

## **j) No Impact**

The project is not located in an area that would be subject to inundation by seiche, tsunami, or mudflow.

### **Standard Conservation Measures:**

**HYDRO-1:** Caltrans Standard BMPs. The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G of the Caltrans Standard Specifications. Caltrans erosion control BMPs will be used to minimize any wind- or water-related erosion. BMPs to be implemented within the PCA will include, at a minimum:

- a. No discharge of pollutants from vehicle and equipment cleaning will be allowed into storm drains or water courses.
- b. Vehicle and equipment fueling, and maintenance operations must be at least 50 feet away from water courses.
- c. Concrete wastes will be collected in washouts, and water from curing operations will be collected, disposed of, and not allowed into water courses.
- d. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.
- e. Coir rolls will be installed along or at the base of slopes during construction to capture sediment, and temporary organic hydro-mulching would be applied to all unfinished disturbed and graded areas.
- f. Work areas where temporary disturbance has removed the pre-existing vegetation will be restored and reseeded with a native seed mix.
- g. Graded areas will be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate.
- h. A Revegetation Plan will be prepared for restoration of temporary work areas.

**HYDRO-2:** Prior to commencement of construction activities, a WPCP will be prepared by the Contractor and approved by Caltrans. The WPCP addresses potential temporary impacts via implementation of appropriate BMPs, such as those mentioned above, to the maximum extent practicable.

### **AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.10 LAND USE AND PLANNING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Land Use and Planning

#### a) No Impact

The project area is predominantly rural, with a few residences, at distance from one another, adjacent to the interstate. New structures proposed by the project would be contained within the median. The proposed project would not physically divide an established community.

#### b) No Impact

The project does not conflict with any applicable land use plan, policy, or regulation.

#### c) No Impact

There are no habitat conservation plans, natural community conservation plans, or other similar plans applicable to the project site.

#### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

### 2.1.11 MINERAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### CEQA Significance Determinations for Mineral Resources

##### a, b) No Impact

There are no known minerals of value within the project work location.

##### **AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.



## 2.1.12 NOISE

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Noise

There are a few dispersed residences located near the project area. Noise generated by the project will be temporary construction noise, and standard Caltrans noise abatement measures will be applied to reduce noise. Work will be confined to daytime hours and the work location will move periodically from one location to the next, so the duration of noise at any given location will be temporary.

#### a) No Impact

The proposed project will not introduce a permanent increase in existing noise levels. Noise associated with this project is due to construction, which will be temporary and periodic.

#### b) No Impact

The project will not involve activities that result in ground vibration.

**c, d) No Impact**

All noise impacts are temporary and associated with construction. Noise associated with construction is controlled by Caltrans Standard Specification, Section 14-8.02, Noise Control. The proposed project will not introduce a permanent increase in noise levels.

**e, f) No Impact**

The project is not located within an airport land use plan or within two miles of a public airport or public use airport. The project is not located in the vicinity of a private airstrip.

**AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

### 2.1.13 POPULATION AND HOUSING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### CEQA Significance Determinations for Population and Housing

##### a, b, & c) No Impact

The project will not induce growth. No new commercial or residential establishments will be built and the project will not add travel lanes to I-580; therefore, the project will not increase roadway capacity.

The project also will not displace any housing units or people. There are no houses within the project construction area and no ROW will be acquired.

##### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.14 PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Public Services

#### a) No Impact

Construction of the project will not result in the provision of new or physically altered governmental facilities. Furthermore, the project will not result in a need for new or physically altered governmental facilities in order to maintain acceptable service ratios.

#### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.15 RECREATION

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Recreation

#### a, b) No Impact

Brushy Peak Regional Preserve is the only publicly owned recreation facility within 0.5 miles from the project work area. The described work activities will not impact this park, nor will it result in the construction of, increased use of, or expansion of existing neighborhood or regional parks or other recreational facilities.

#### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.16 TRANSPORTATION AND TRAFFIC

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The TMP for the project will be developed in the next stage of project development. The TMP will be supported by detailed traffic studies to evaluate traffic operations. The need for necessary lane closures during off-peak hours or at night, or for short-term detour routes will be identified as required.

### CEQA Significance Determinations for Transportation/Traffic

#### a) No Impact

The proposed project is consistent with the California Transportation Plan 2040 and Alameda County General Plan.

**b) No Impact**

The project is not a capacity increasing project, so it will have no effect on congestion management programs.

**c) No Impact**

The project will not impact air traffic patterns.

**d) No Impact**

The project will not substantially increase hazards due to a design feature or incompatible uses.

**e) No Impact**

The TMP will ensure that emergency services have adequate access.

**f) No Impact**

As referenced under land use planning, the project does not conflict with the California Transportation Plan 2040 or the Alameda County General Plan.

**AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.17 TRIBAL CULTURAL RESOURCES

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Tribal Cultural Resources

#### a, b) No Impact

Caltrans Cultural staff coordinated with the NAHC and determined that there would be no impacts to tribal cultural resources. See Chapter 3 for more details.

#### AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.



## 2.1.18 UTILITIES AND SERVICE SYSTEMS

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

### CEQA Significance Determinations for Utilities and Service Systems

#### a) No Impact

The project is not expected to exceed wastewater treatment requirements of the Central Valley RWQCB (Region 5).

#### b) No Impact

The project does not require or result in the construction of new water or wastewater treatment facilities, or the expansion of existing facilities.

#### c) No Impact

The project does not require or result in the construction of new storm water drainage facilities or expansion of existing facilities.

**d) No Impact**

The project does not require water supplies to serve the project from existing entitlements or where the project would impact new or expanded entitlements.

**e) No Impact**

The project does not require the services of a wastewater treatment provider where the project would impact the capacity of the provider.

**f) No Impact**

The project does not require the services of a landfill where the project would impact the capacity of a landfill.

**g) No Impact**

The project is anticipated to comply with federal, state, and local statutes and regulations related to solid waste.

**AMMs and/or MMs:**

No impacts are anticipated; therefore, no measures are proposed.

## 2.1.19 MANDATORY FINDINGS OF SIGNIFICANCE

	Significant and Unavoidable 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### CEQA Significance Determinations for Mandatory Findings of Significance

#### a) Less Than Significant with Mitigation

The proposed project would result in approximately 7.93 acres of temporary impact and approximately 0.04 acre of permanent impact to suitable CTS and CRLF habitat. With the mitigation measures employed as described in the Biological Resources section of this Initial Study, the impacts to these resources will be reduced to a level of insignificance.

#### b) No Impact

All past, present, and future projects went through, or are required to undergo, an environmental review to identify, account for, and mitigate for potential significant impacts. All projects have or will incorporate standard conservation measures, including standard Caltrans BMPs, which will protect surrounding habitat and water quality. Therefore, Caltrans does not anticipate any cumulative effects as a result of the proposed project.

#### c) No Impact

The project does not have environmental effects which will cause substantial adverse effects on human beings.

## CHAPTER 3 Comments and Coordination

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Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

**BIOLOGY:** The Information for Planning and Conservation online tool was used to generate a species list from the Sacramento Office of the USFWS for the project area on May 15, 2018. Caltrans initiated technical assistance with USFWS in October 2018. A request for formal consultation and a BA was submitted to USFWS on November 9, 2018. USFWS submitted a 30-day letter to Caltrans on December 5, 2018, requesting additional lighting analysis and project information. Caltrans submitted a revised BA and a response to the 30-day letter on August 19, 2019.

**CULTURAL:** Caltrans contacted the NAHC on March 26, 2018 to request a review of their Sacred Lands file. The NAHC responded on April 17, 2018 stating that there were no Sacred Lands within the Area of Potential Effects (APE). They provided the following list of interested individuals to contact with further information:

- Ms. Ann Marie Sayers, Chairperson for the Indian Canyon Mutsun Band of Costanoan
- Ms. Irenne Zwierlein, Chairperson of the Amah Mutsun Tribal Band of Mission San Juan Bautista
- Ms. Rosemary Cambra, Chairperson for the Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- Ms. Katherine Erolinda Perez of the North Valley Yokuts Tribe
- Mr. Andrew Galvan of the Ohlone Indian Tribe
- Mr. Tony Cerda, Chairperson of the Costanoan Rumsen Carmel Tribe

Letters were mailed to interested individuals on March 20 and April 17, 2018. Follow-up emails and phone calls were made on April 24 and May 15, 2018. Over the phone, one individual expressed concern over the depth of construction for the utility poles; the concern was resolved after explaining that the pole foundations are existing and are in areas of low sensitivity for archaeological resources. Another individual requested, and received, copies of the record search results.

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## **CHAPTER 4 List of Preparers**

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This document was prepared by the following Caltrans staff and consultants:

### **CALIFORNIA DEPARTMENT OF TRANSPORTATION**

#### ***Environmental Analysis***

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Cristin Hallissy, Branch Chief  
Sabrina Dunn, Environmental Planner  
Marissa Brown, Associate Environmental Planner  
Juliane Smith, Environmental Planner

#### ***Project Management***

Issa Bouri, Project Manager

#### ***Design- Project Development, East***

Edmund Choy, Senior Transportation Engineer  
Huda Nassori, Transportation Engineer

#### ***Biological Sciences and Permits***

John Yaekel, Branch Chief

#### ***Cultural Resource Studies***

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Michael Meloy, Associate Environmental Planner (Architectural Historian)  
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Britt Schlosshardt, Environmental Planner (Archaeology)

#### ***Landscape Architecture***

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#### ***Geotechnical Design West***

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#### ***Environmental Engineering***

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Shilpa Mareddy, Transportation Engineer (Air and Noise)  
Jonathan Wellen, Transportation Engineer (Water Quality)

#### ***Engineering Services, Hydraulics***

Craig Tomimatsu, Senior Transportation Engineer

#### ***Office of Environmental Management***

Brenda Powell Jones, Senior Environmental Planner  
Barbara Wolf, Climate Change Policy Advisor

**GARCIA AND ASSOCIATES**

Dennis Coghlan, Biologist  
John McCarthy, Environmental Planner  
Meera Velu, Environmental Scientist

## **CHAPTER 5 Distribution List**

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### *Elected Officials*

#### U.S. Senate

The Honorable Dianne Feinstein  
United States Senate, California  
One Post Street, Suite 2450  
San Francisco, CA 94104

The Honorable Kamala Harris  
United States Senate, California  
333 Bush Street, Suite 3225  
San Francisco, CA 94104

#### U.S. House of Representatives

The Honorable Eric Swalwell  
United States Congress, 15<sup>th</sup> District  
3615 Castro Valley Boulevard  
Castro Valley, CA 94546

#### California State Assembly

The Honorable Steve Glazer  
California State Senate – 7th District  
51 Moraga Way, Suite 2  
Orinda, CA 94563

The Honorable Rebecca Bauer-Kahan  
California State Assembly – 16th District  
2440 Camino Ramon, Suite 345  
San Ramon, CA 94583

#### County Officials

The Honorable Scott Haggerty  
Alameda County Board of Supervisors,  
District 1, County Administration Building  
1221 Oak Street, #536  
Oakland, CA 94612

#### Local Officials

Mayor John Marchand  
City Hall  
1052 S. Livermore Avenue  
Livermore, CA 94550

Vice Mayor Robert W. Carling  
City Hall  
1052 S. Livermore Ave.  
Livermore, CA 94550

City Council Member Bob Coomber  
City Hall  
1052 S. Livermore Avenue  
Livermore, CA 94550

City Council Member Trish Munro  
City Hall  
1052 S. Livermore Avenue  
Livermore, CA 94550

City Council Member Bob Woerner  
City Hall  
1052 S. Livermore Avenue  
Livermore, CA 94550

### *Federal Agencies*

Natural Resources Conservation Service,  
Alameda County Conservation District  
3583 Greenville Road, Suite 2  
Livermore, CA 94550

U.S. Army Corps of Engineers, Sacramento  
District  
ATTN: Regulatory Branch  
1325 J Street, Room 1350  
Sacramento, CA 95814

U.S. Environmental Protection Agency,  
Pacific Southwest, Region 9  
75 Hawthorne Street  
San Francisco, CA 94105

U.S. Fish and Wildlife Service  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825

### *State Agencies*

State Clearinghouse, Executive Officer  
1400 Tenth Street, Room 156  
P.O. Box 3044



Sacramento, CA 95812  
*State Agencies Cont'd*

Bay Area Air Quality Management District  
Jack Broadbent  
Chief Executive Officer  
939 Ellis Street  
San Francisco, CA 94109

California Air Resources Board  
Executive Officer Richard Corey  
1001 I Street  
P.O. Box 2815  
Sacramento, CA 95812

California Department of Conservation  
Director David Bunn  
801 K Street, MS 24-01  
Sacramento, CA 95814

California Department of Fish & Wildlife  
Region 3  
Regional Manager Scott Wilson  
7329 Silverado Trail  
Napa, CA 94558

California Highway Patrol,  
Special Projects Section  
P.O. Box 942898  
Sacramento, CA 92298

California Office of Historic Preservation  
1416 Ninth Street, Room 1442  
Sacramento, CA 95814

California Public Utilities Commission  
Executive Director Paul Clanon  
505 Van Ness Avenue  
San Francisco, CA 94102

California Transportation Commission  
Executive Director Susan Bransen  
1120 N Street  
Sacramento, CA 95814

Department of Toxic Substances Control  
1001 I Street  
Sacramento, CA 95814-2828  
P.O. Box 806  
Sacramento, CA 95812

Native American Heritage Commission  
Executive Secretary  
1550 Harbor Blvd, Suite 100  
West Sacramento, CA 95691

Regional Water Quality Control Board  
District 2  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

Alameda County Planning Commission  
224 W. Winton, Room 111  
Hayward, CA 94544

California Office of Emergency Services  
3650 Schriever Avenue  
Mather, CA 95655

California Transportation Commission  
1120 N Street, MS-52  
Sacramento, CA 95814

#### *Regional Agencies*

Association of Bay Area Governments  
Kenneth Kirkey  
Planning Director  
101 Eighth Street  
Oakland, CA 94604-2050

Metropolitan Transportation Commission  
Doug Kimsey  
Planning Director  
101 Eighth Street – Metrocenter  
Oakland, CA 94607

#### *County Agencies*

Alameda County  
Clerk of the Board of Supervisors  
1221 Oak Street, Suite 536  
Oakland, CA 94612

Alameda County Transportation  
Commission  
1111 Broadway, Suite 800  
Oakland, CA 94607

*Local Agencies*

Cheri Sheets, City Engineer  
City Hall  
1052 S. Livermore Avenue  
Livermore, CA 94550

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## Appendix A. Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION 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) 654-6130  
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TTY 711  
www.dot.ca.gov



*Making Conservation  
a California Way of Life.*

April 2018

### NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Related federal statutes and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, please visit the following web page:  
[http://www.dot.ca.gov/hq/bep/title\\_vi/t6\\_violated.htm](http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm).

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14<sup>th</sup> Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email [Title.VI@dot.ca.gov](mailto:Title.VI@dot.ca.gov), or visit the website [www.dot.ca.gov](http://www.dot.ca.gov).

A handwritten signature in blue ink, appearing to read "Laurie Berman".

LAURIE BERMAN  
Director

*"Provide a safe, sustainable, integrated and efficient transportation system  
to enhance California's economy and livability"*

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## **Appendix B. Avoidance and Minimization Measures and/or Mitigation Measures**

Avoidance and minimization measures (AMMs) and proposed compensatory mitigation measures (MMs) for biological resources for the project are listed below. For detailed descriptions of the following measures, refer to the appropriate topic section in Chapter 2.

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate time, the following mitigation program 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 are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. Some measures may apply to more than one resource area. Duplicative or redundant measures have not been listed.

### Avoidance, Minimization, and/or Mitigation Measures

#### *Biological Resources*

**AMM BIO-1:** Permits. Caltrans will include a copy of the Biological Opinion (BO) and Incidental Take Permit (ITP) within the construction bid package of the proposed project. The Resident Engineer or their designee will be responsible for implementing the Conservation Measures and Terms and Conditions of the U.S. Fish and Wildlife Service (USFWS) BO and the California Department of Fish and Wildlife (CDFW) (ITP).

**AMM BIO-2:** Reinitiation of Consultation. Caltrans will reinitiate consultation if the project results in effects to listed species not considered in the USFWS BO or CDFW ITP.

**AMM BIO-3:** Biological Monitor Approval. Caltrans will submit the names and qualifications of the biological monitor(s) for USFWS/CDFW approval prior to initiating construction activities for the proposed project. Only agency-approved biological monitors would implement the monitoring duties outlined in the BO, including delivery of the Worker Environmental Awareness Training Program.

**AMM BIO-4:** Biological Monitoring. The agency-approved biologist(s) will be on-site during initial ground-disturbing activities, and thereafter as needed to fulfill the role of the approved biologist as specified in project permits. The biologist(s) will keep copies of applicable permits in their possession when on-site. Through the Resident Engineer or their designee, the agency-approved biologist(s) shall be given the authority to communicate either verbally, by telephone, email or hardcopy with all project personnel to ensure that take of special-status species is minimized and permit requirements are fully implemented. Through the Resident Engineer or their designee, the agency-approved biologist(s) shall have the authority to stop project activities to minimize take of special-status species or if he/she determines that any permit requirements are not fully implemented. If the agency-approved biologist(s) exercises this authority, the agencies shall be notified by telephone and email within 48 hours.

**AMM BIO-5:** Worker Environmental Awareness Training. All construction personnel will attend a mandatory environmental education program delivered by an agency-approved biologist prior to working on the project. The program would focus on the conservation measures that are relevant to employee's personal responsibility and would include an explanation as how to best avoid take of sensitive species. Distributed materials would include a pamphlet with distinguishing photographs of sensitive species, species' habitat requirements, compliance reminders, and relevant contact information. Documentation of the training, including sign-in sheets, would be kept on file and would be available on request.

**AMM BIO-6:** Preconstruction Surveys. Prior to any ground disturbance, preconstruction surveys will be conducted by an agency-approved biologist for listed species. These surveys will consist of walking surveys of the project limits and, if possible, accessible adjacent areas within at least 50 feet of the project limits. The biologist(s) will investigate all potential cover sites. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity. The entrances and other refuge features within the project limits will be collapsed or removed following investigation.

**AMM BIO-7:** Prevention of Wildlife Entrapment. To prevent inadvertent entrapment of special-status species during construction, excavated holes or trenches more than 1 foot deep with walls steeper than 30 degrees will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 4-foot-high vertical barrier, independent of exclusionary fences, will be used to further prevent the inadvertent entrapment of special-status species. If it is not feasible to cover an excavation or provide an additional 4-foot-high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist will immediately relocate the animal to an area outside of the work area. A USFWS/CDFW approved location will be designated prior to the start of construction. The USFWS/CDFW will be notified of the incident by telephone and electronic mail within 48 hours.

**AMM BIO-8:** Wildlife Exclusion Fencing. The limits of concrete barrier, electrical pole installation, electrical trenching, and underground vault installation will be delineated with high visibility wildlife exclusion fencing. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the delineated project construction area. Wildlife exclusion fencing will not be installed for temporary access area within species habitat required for installing/stringing the electrical line between poles. Construction activities occurring outside of suitable habitat for special-status species will not require wildlife exclusion fencing.

**AMM BIO-9:** Listed Species On-site. The Resident Engineer will immediately contact the agency-approved project biologist(s) if a California red-legged frog (CRLF) or California tiger salamander (CTS) is observed within a construction zone. The Resident Engineer will suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily or an agency approved-protocol for removal has been established.

**AMM BIO-10:** Work Window for CTS and CRLF. All work within suitable habitat for CTS and CRLF will occur between April 15 and October 15, when the species are unlikely to be active and there is less potential for an individual to enter the work area.

**AMM BIO-11:** Material Storage. CTS and CRLF are attracted to cavity-like structures such as pipes and may seek refuge under construction equipment or debris. They may become trapped or injured if such materials are moved. All construction pipes, culverts, or similar structures, construction equipment or construction debris left overnight within the work area will be inspected by the agency-approved biological monitor prior to being moved.

**AMM BIO-12:** Night Work. To the extent practicable, nighttime construction will be minimized.

**AMM BIO-13:** Night Lighting. Artificial lighting of the project construction area during nighttime hours will be minimized to the maximum extent practicable.

#### Mitigation Measures (MMs)

Caltrans proposes to include compensatory mitigation for potential impacts to species listed under FESA and CESA. To develop an appropriate mitigation proposal that meets the regulatory requirements of CEQA and FGC 2081, Caltrans proposes that compensatory mitigation in the form of habitat restoration and preservation will be provided on-site for temporary habitat impacts at a 1:1 ratio, and off-site at a 3:1 ratio for permanent habitat impacts.

**MM BIO-1:** Caltrans will compensate for the project's temporary impacts to 7.93 acres of CTS and CRLF habitat with on-site compensatory mitigation at a 1:1 ratio.

**MM BIO-2:** Caltrans will compensate for the project's permanent impacts to 0.04 acres of CTS and CRLF habitat with off-site compensatory mitigation from a USFWS-approved conservation bank within Alameda County at a 3:1 ratio.



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## Appendix C. List of Acronyms and Abbreviations

<b>Abbreviation</b>	<b>Definition</b>
ADL	Aerially deposited lead
AMM	Avoidance and Minimization Measure
APE	Area of Potential Effects
ARB	California Air Resources Board
BA	Biological Assessment
BAU	business-as-usual
BMP	Best Management Practice
BO	Biological Opinion
BSA	Biological Study Area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CAFÉ	Corporate Average Fuel Economy
CRLF	California Red-legged Frog
CTS	California Tiger Salamander
CTS	California Transportation Plan
DPS	Distinct Population Segment
DOT	Department of Transportation
DSA	Disturbed Soil Area
EB	Eastbound
EPACT92	Energy Policy Act of 1992
EO	Executive Order
FED	Final Environmental Document
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GHG	Greenhouse Gas
I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
ITP	Incidental Take Permit
LCFS	Low Carbon Fuel Standard
LED	Light emitting diode
MM	Mitigation Measure
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission'
MVM	Million vehicle miles
NAHC	Native American Heritage Commission
NES	Natural Environment Study
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
OPR	Governor's Office of Planning and Research
NRHP	National Register of Historic Places

PCA	Project Construction Area
PCE	Primary Constituent Elements
PG&E	Pacific Gas and Electric Company
PRC	Public Resources Code
PM	Postmile
RCEM	Road Construction Emissions Model
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCS	Sustainable Communities Strategy
SHPO	State Historic Preservation Officer
SLR	sea-level rise
SR	State Route
TMP	Traffic Management Plan
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
WPCP	Water Pollution Control Plan
WB	westbound

## **Appendix D. U.S. Fish and Wildlife Species List, October 1, 2019**

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## **Appendix E. List of Technical Studies**

Biological Assessment: Interstate 580 Safety Lighting and Power Source Installation Project. November 9, 2018

Comments from the Air/Noise/Energy Branch Memorandum. March 27, 2018

Comments from the Hazardous Waste Branch Memorandum. March 27, 2018

Construction Greenhouse Gas Analysis. November 2, 2018

Geologic and Paleontological Environmental Study/Memorandum. October 12, 2018

Historical Property Survey Report, Archaeology Survey Report, and Extended Phase I. Close-Out Summary of Cultural Resource for the Interstate 580 Install Power Source and Safety Lighting Project. October 16, 2018

Location Hydraulics Study. October 3, 2018

Natural Environmental Study: Interstate 580 Safety Lighting and Power Source Installation Project. November 5, 2018

Visual Impact Assessment: I-680 Rehabilitation Improvements. August 30, 2018

Water Quality and Storm Water Runoff Report. May 2018