State Route 108/49 and Mackey Ranch Road Intersection Improvements

Intersection of Mackey Ranch Road and State Route 108/49
in Tuolumne County
10-TUO-108/49-12.0/12.3
EA 10-1K720 and Project ID 1019000093

Initial Study
with Proposed Negative Declaration



Prepared by the
State of California Department of Transportation
and Chicken Ranch Rancheria of Me-Wuk Indians of California

August 2020

Caltrans

General Information About This Document

What's in this document:
The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project in Tuolumne County in California. The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:
- Please read the document.
- This Initial Study with Proposed Negative Declaration is posted online and available for viewing or download on the Caltrans District 10 website: https://dot.ca.gov/caltrans-near-me/district-10.
- A printed copy or a compact disc of the document and maps for this Initial Study with Proposed Negative Declaration and other project information are available by request and can be sent to your home address. To request a printed copy or compact disc, please contact Jaycee Azevedo at 209-941-1919 or by email at jaycee.azevedo@dot.ca.gov.
- Tell us what you think. If you have any comments regarding the project, or would like to request a public information meeting, please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Jaycee Azevedo, Senior Environmental Planner, Central Region Environmental, California Department of Transportation, 1976 East Charter Way, Stockton, California 95205. You can also submit comments via email to: jaycee.azevedo@dot.ca.gov.
- Submit comments by the deadline: September 30, 2020.

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

Printing this document: To save paper, this document has been set up for two-sided printing (to print the front and back of a page). Blank pages occur where needed throughout the document to maintain proper layout of the chapters and appendices.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Jaycee Azevedo, Central Region Environmental, 1976 East Charter Way, Stockton, California 95205; 209-941-1919 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

10-TUO-108/49-12.0/12.3
EA 10-1K720 and Project ID Number 1019000093

Build a roundabout and add improvements at the intersection of Mackey Ranch Road and State Route 108/49 from post mile 12.0 to post mile 12.3 in Tuolumne County

INITIAL STUDY
with Proposed Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation
and
Chicken Ranch Rancheria of Me-Wuk Indians of California
Responsible Agencies: California Transportation Commission

Jaycee Azevedo

for Philip Vallejo
Environmental Office Chief, North
California Department of Transportation
CEQA Lead Agency

08/12/20
Date

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DRAFT
Proposed Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The Chicken Ranch Rancheria of Me-Wuk Indians of California (Tribe), in partnership with Caltrans, is proposing improvements to the existing State Route 108/49 and Mackey Ranch Road intersection from post mile 12.0 to post mile 12.3. The improvements would include replacing the intersection with a modern, yield-controlled, four-legged, single-lane roundabout designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Casino, which the Tribe owns and operates.

Determination

This Proposed Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This Proposed Negative Declaration is subject to change based on comments received from interested agencies and the public.

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

- The project would have no effect on forest resources, air quality, cultural resources, energy, geology and soils, mineral resources, population and housing, public services, recreation, and tribal cultural resources.
- The project would have no significant effect on aesthetics, agriculture, biological resources, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, transportation, utilities and service systems, and wildfire.

_____

Philip Vallejo
Environmental Office Chief, North
California Department of Transportation

_____

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 (known as CEQA).

The Chicken Ranch Rancheria of Me-Wuk Indians of California (Tribe), in partnership with Caltrans, is proposing to improve the existing State Route 108/49 and Mackey Ranch Road intersection by building a modern, yield-controlled, four-legged, single-lane roundabout. The roundabout would be designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Casino, which the Tribe owns and operates.

The project site is about 10 acres and is within the Caltrans District 10 Service Area at the intersection of State Route 108/49 and Mackey Ranch Road, which is about 1 mile north of Montezuma Road and the State Route 108/49 intersection, and 2.5 miles south of Jamestown in Tuolumne County. The site lies within a portion of Section 21, Township 1 North, Range 14 East, Mount Diablo Base and Meridian; it can be on the Sonora, California, 7.5-minute U.S. Geological Survey topographic quadrangle (2018), Latitude 37 degrees 55’ 32.714” North, Longitude 120 degrees 26’ 47.350” West (Project Site).

State Route 108/49 is a two-lane, conventional highway in the project area that runs mainly in the north-south direction through Jamestown and unincorporated areas of Tuolumne County. This arterial currently serves both passenger and heavy-duty vehicles. State Route 108/49 operates at a posted speed limit of 55 miles per hour in the general vicinity of Mackey Ranch Road. There are no pedestrian or transit facilities along this roadway; however, there is a five-foot shoulder next to vehicle traffic for cyclists.

Chicken Ranch Road is a two-lane, undivided local roadway that mainly serves abutting low-density rural single-family homes. Chicken Ranch Road is a nearly 40-foot-wide paved roadway and is the main access road to Chicken Ranch Casino. Chicken Ranch Road currently operates at a posted speed limit of 25 miles per hour. The intersection of State Route 108/49 and Chicken Ranch Road is a three-legged, unsignalized intersection near post mile 12.8, with a stop control placed on the minor leg approach (i.e., Chicken Ranch Road). From the intersection with State Route 108/49, Chicken Ranch Road extends for about 4,900 feet before reaching its southern terminus. No bicycle, pedestrian, or transit facilities are along this roadway.

Mackey Ranch Road is currently a private roadway that mainly serves the abutting residential and industrial/commercial developments within the Chicken Ranch Trust Land. Mackey Ranch Road connects to Chicken Ranch Road at its western terminus. The intersection of Mackey Ranch Road and State Route 108/49 near post mile 12.1 is a two-way, stop-controlled intersection with stop controls placed on the minor road (i.e., Mackey Ranch Road). There are no posted speed limits on Mackey Ranch Road between State Route 108/49 and its western terminus at Chicken Ranch Road. No bicycle, pedestrian, or transit facilities are along this roadway.

Non-trust tribal lands (lands not held in trust by the United States government) are designated as Agricultural under the 2018 Tuolumne County General Plan.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to improve overall operations, circulation, and accessibility for all transportation modes, such as driving and cycling, by replacing the current intersection at State Route 108/49 and Mackey Ranch Road with a modern, yield-controlled, four-legged, single-lane roundabout with share the road signs. The roundabout would be designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Casino.

1.2.2 Need

The need for the project is to provide better connectivity for the community at the intersection of State Route 108/49 and Mackey Ranch Road to divert and reduce traffic at the Chicken Ranch Road intersection.

1.3 Project Description

The Tribe, in partnership with Caltrans, is proposing improvements to the existing State Route 108/49 and Mackey Ranch Road intersection from post mile 12.0 to post mile 12.3. The improvements would include replacing the intersection with a modern, yield-controlled, four-legged, single-lane roundabout designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Casino, which the Tribe owns and operates. A project vicinity and location map are provided as Figure 1-1 and Figure 1-2, respectively. Figure 1-3 displays the proposed project limits.

Figure 1-1 Project Vicinity Map

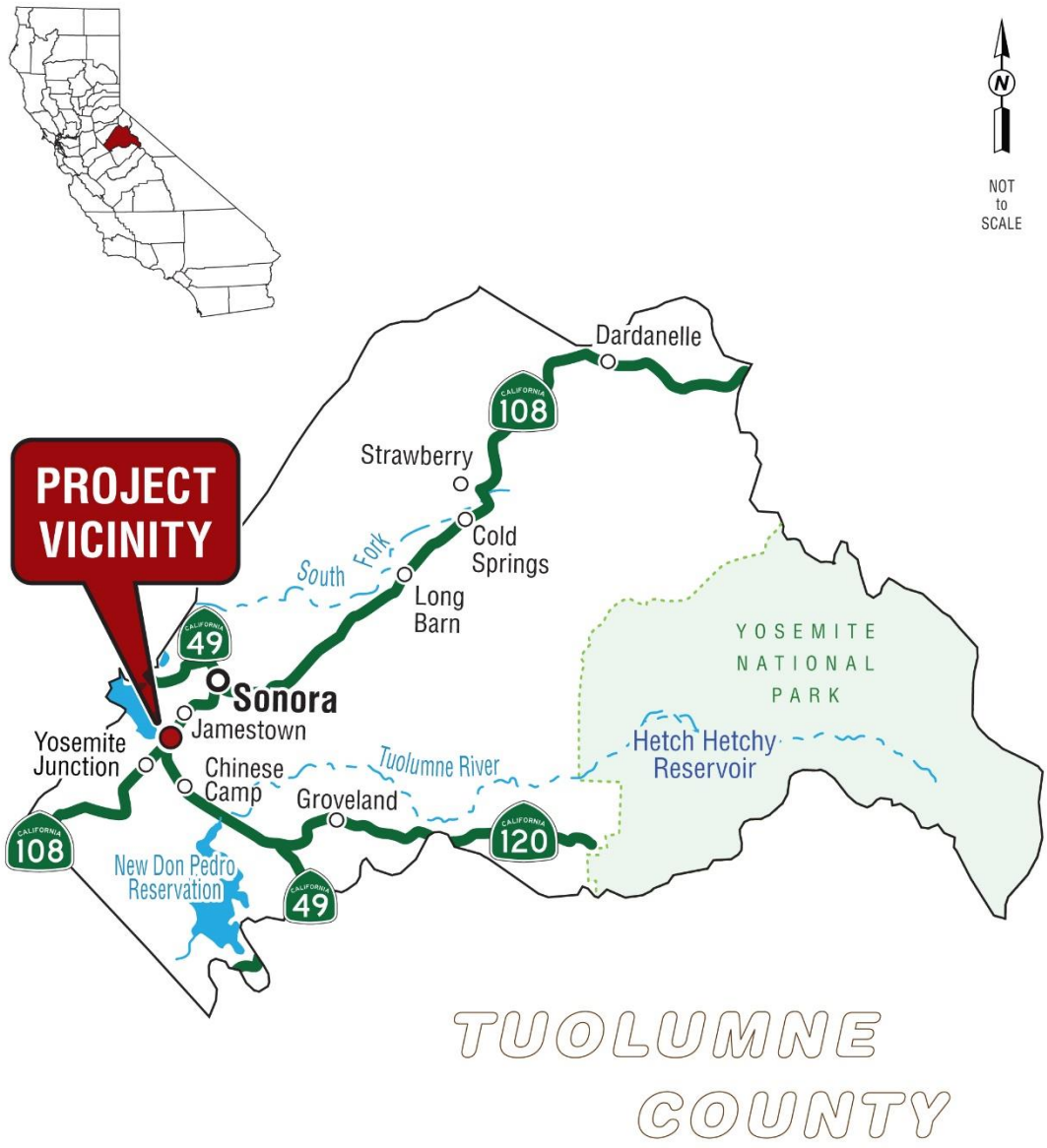


Figure 1-2 Project Location Map

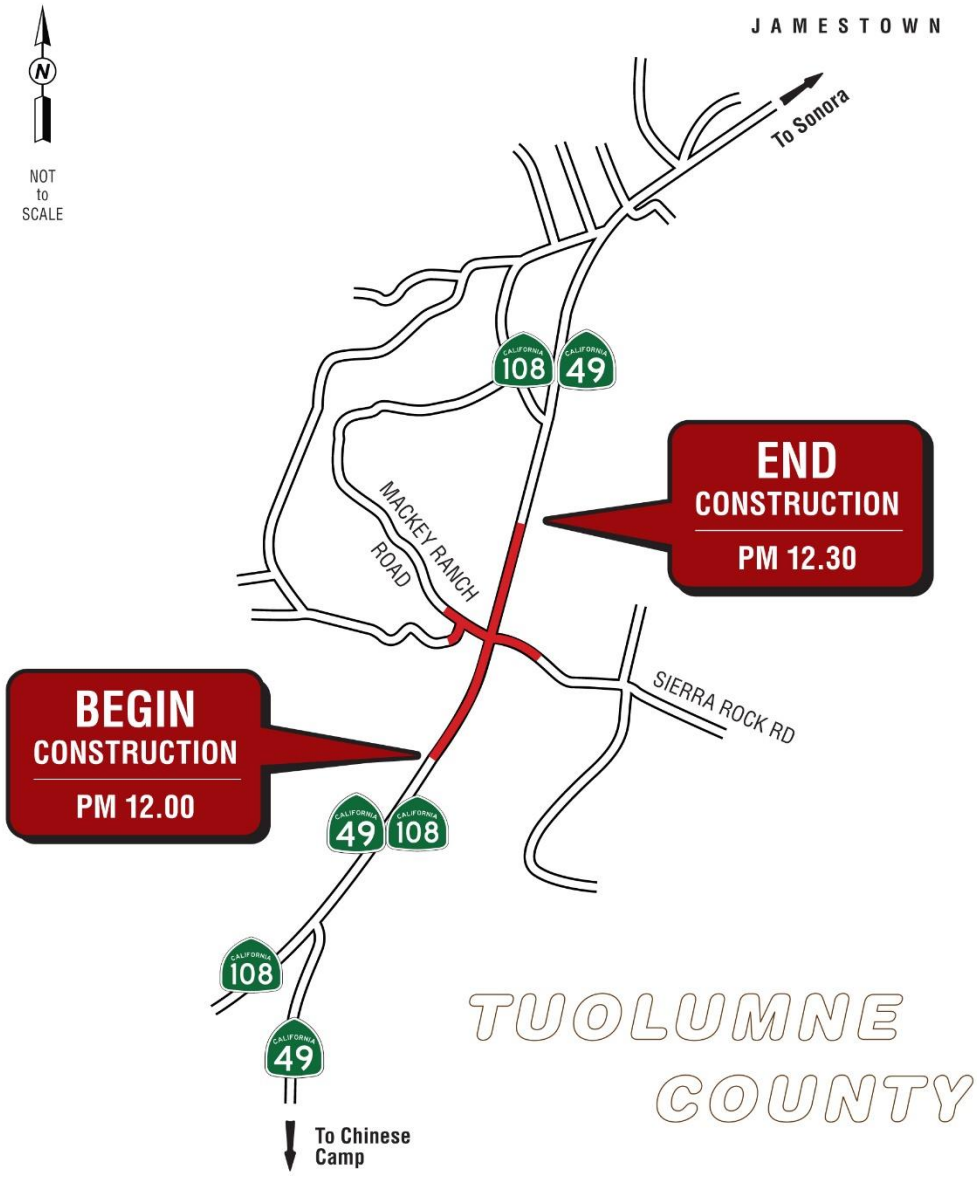
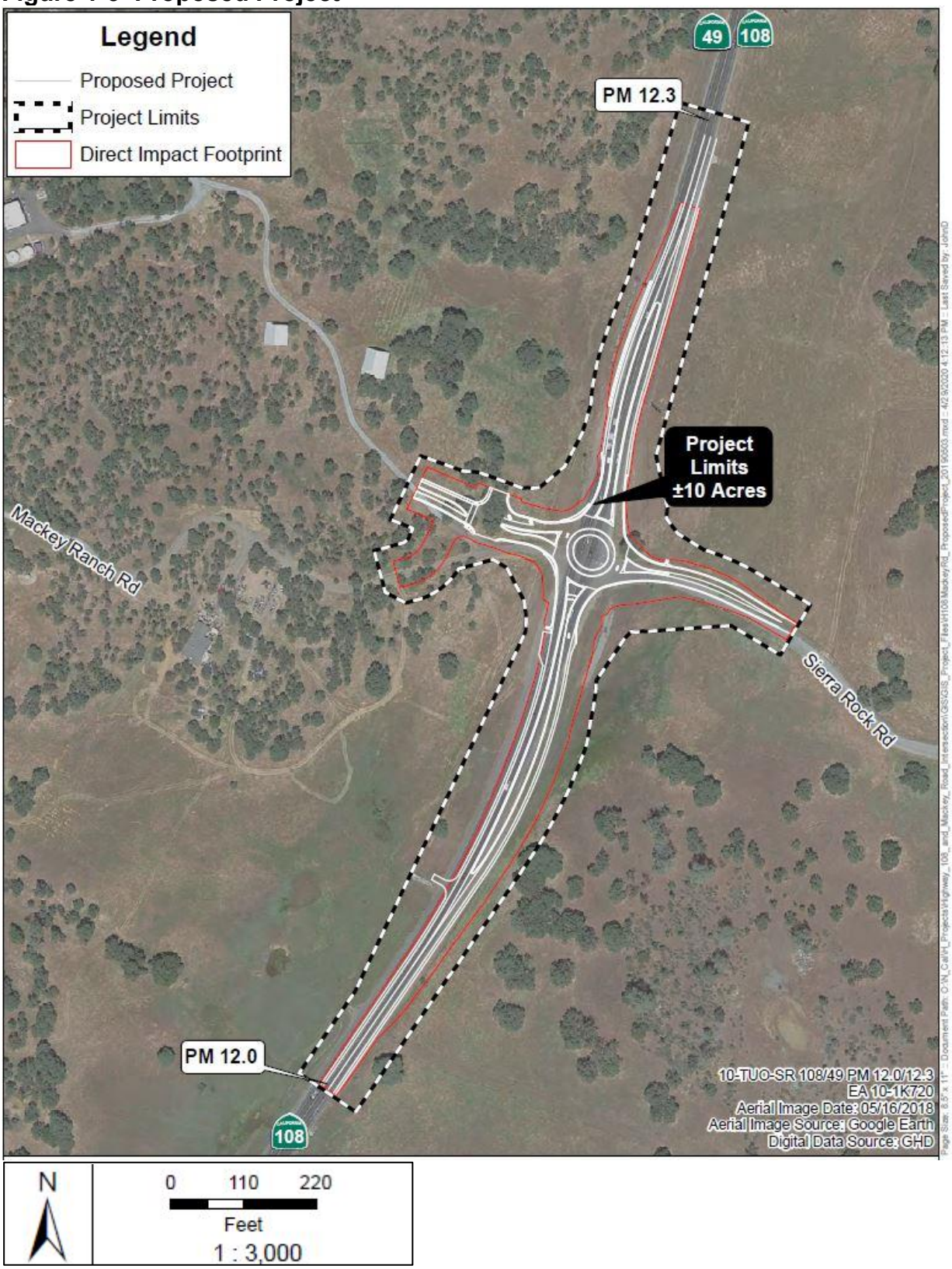


Figure 1-3 Proposed Project



1.4 Project Alternatives

The Build Alternative for the project would involve the construction of a roundabout at the State Route 108/49 and Mackey Ranch Road intersection. The other alternative considered in this document is the No-Build (No-Action) Alternative.

1.4.1 Build Alternative

The Build Alternative assumes that access to the Chicken Ranch Casino grounds would be relocated from the existing entrance at State Route 108/49 and Chicken Ranch Road to the intersection of State Route 108/49 and Mackey Ranch Road (see Figure 1-3).

The Build Alternative would replace the State Route 108/49 and Mackey Ranch Road intersection with a modern, yield-controlled, single-lane roundabout designed to accommodate the ultimate design year (2040) traffic forecast volumes.

Roundabout improvements at the State Route 108/49 intersection would include, but would not be limited to, the following:

- Vehicular access would be provided on northerly and southerly sides of State Route 108/49 and along the easterly and westerly sides of Mackey Ranch Road/Sierra Rock Road.
- Grading for future construction of an 8-foot shared-use path separated from the roadway with a 5-foot minimum landscaped buffer provided for pedestrian safety and to guide pedestrians to correct crossing locations.
- Median curb cuts for future crosswalks and Americans with Disabilities Act-compliant ramps would be provided on the southern leg of the intersection. This design would allow for future two-stage crossings, which would reduce the amount of sustained time a pedestrian is in potential conflict with motorized vehicles by limiting the length of each crossing and limiting each crossing to one direction of vehicle travel at a time.
- There would be 5-foot shoulders for cyclists. As cyclists approach the intersection, they would enter the roadway to ride with vehicle traffic through the roundabout. There would also be sharrows—white pavement markings showing a bicycle symbol with two chevrons on top—to communicate this action to cyclists and drivers.
- Vehicular speeds would range from 15 to 30 miles per hour after project build-out within the intersection.

This project contains a number of standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the project. These measures include the following:

AQ-1. Implement Caltrans' Standard Best Management Practices during construction. Best Management Practices may include the following features to minimize erosion and sediment loss:

- Staging areas would include reinforced temporary construction entrances, protected concrete washout, and storage facilities for materials, as necessary;
- Following tree and shrub removal, all disturbed areas would be stabilized with temporary hydraulic mulch;
- During construction, temporary hydraulic mulch, check dams, and fiber rolls would be placed in advance of predicted rain events in areas currently under construction;
- Erosion controls made up of hydroseed, hydromulch, and fiber rolls would be placed along the project where necessary to prevent erosion;
- Following the completion of grading and paving activities, all equipment and materials would be removed, and staging areas would be restored to resemble pre-construction conditions;
- Permanent erosion control made up of hydroseed, hydromulch, and biodegradable fiber roll would be used where ground-disturbing activities occur. Native seed mix would be used for all revegetation; and
- Following final stabilization, temporary Best Management Practices and temporary fencing would be removed.

BIO-1. A qualified biologist would conduct a pre-construction survey for coast horned lizards within the Biological Study Area within 14 days before ground-disturbing activities start. If no coast horned lizards are seen, then no additional measures would be recommended. If construction does not start within 14 days or stops for more than 14 days after the pre-construction survey, a new survey would be recommended.

If coast horned lizards are found, then a qualified biologist would conduct a second pre-construction survey within 24 hours before construction activities start. A qualified biologist would also be present onsite during initial ground-clearing and grading activities to relocate any coast horned lizards found within the construction footprint to suitable habitat away from the construction zone but within the Biological Study Area.

If coast horned lizards are found, then a qualified biologist would conduct an environmental awareness training for all construction personnel. The training would include how to identify special-status species, required practices before the start of construction, and general measures that are being implemented to conserve species as they relate to the project. The training would also cover penalties for non-compliance and boundaries of the Biological Study Area and the permitted disturbance zones. Supporting materials that contain training information would be prepared and distributed.

Upon completion of training, all construction personnel would sign a form stating that they have attended the training and understand all the measures. Proof of this instruction would be kept on file with the project proponent. The project proponent would provide the California Department of Fish and Wildlife with a copy of the training materials and the forms signed by project personnel showing that training has been completed within 30 days of the completion of the first training session. Copies of signed forms would be submitted monthly as additional training occurs for new employees. The crew foreman would be responsible for ensuring that construction personnel follow the guidelines and restrictions. If new construction personnel are added to the site, the crew foreman would ensure that they receive the mandatory training before starting work.

BIO-2. Pre-construction surveys for special-status bat species are recommended within 14 days before starting ground-disturbing activities or removing trees. If no special-status bat species are seen roosting, then a letter report documenting the results of the survey would be provided to the project proponent and no additional measures would be recommended. If construction does not start or if any trees expected to be removed are not removed within 14 days or construction stops for more than 14 days after the pre-construction survey, a new survey would be recommended.

If bats are found, then consultation with the California Department of Fish and Wildlife would be recommended to determine appropriate avoidance measures. Recommended avoidance measures may include establishing a buffer around the roost tree until bats no longer occupy the tree. The tree would not be removed until a biologist determines that bats no longer occupy the tree.

BIO-3. The Tribe would obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit issued by the Regional Water Quality Control Board. The Tribe would implement water quality Best Management Practices to prevent discharging pollutants to surface waters during construction. These Best Management Practices would include standard measures for tracking sediment reduction, such as vehicle washing and street sweeping, and revegetating all areas with native species that were disturbed by construction activities.

BIO-4. Before starting ground-disturbing activities, the Tribe would obtain all required regulatory authorizations from the U.S. Army Corps of Engineers and Regional Water Quality Control Board for the discharge of dredged or fill material within waters of the U.S.

BIO-5. All aquatic resources delineated within the project site are considered potential waters of the U.S. and/or waters of the State. If it is determined that some of the aquatic resources within the project site are not subject to federal jurisdiction, these resources may still be subject to waste discharge

requirements under the Porter-Cologne Water Quality Control Act should the project result in impacts to these resources. Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste—other than to a community sewer system—within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may make up a discharge of waste that could affect the quality of waters of the State. A report of waste discharge would be filed for impacts to non-federal waters if required.

BIO-6. If construction is expected to occur during the nesting season—February 1 through September 30—then a qualified biologist would conduct an environmental awareness training for all construction personnel. The training would include information about the potential for active nests to occur within the Biological Study Area and procedures to follow if active nests are found during construction.

BIO-7. If feasible, tree removals would be completed outside of the nesting season—October 1 through January 31. The nesting season is from February 1 through September 30.

BIO-8. A qualified biologist would conduct a pre-construction survey for active nests within 14 days before the start of construction and tree removal activities if they are expected to start during the nesting season—February 1 through September 30. An additional pre-construction survey would be conducted within 72 hours before the start of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, then a letter report would be submitted to the project proponent and the California Department of Fish and Wildlife for their records, and no additional measures would be recommended. If construction does not start within 72 hours or stops for more than 72 hours after the pre-construction survey, an additional pre-construction survey would be recommended.

If active nests are within the Biological Study Area, a qualified biologist would establish an appropriate buffer zone around the nests. The qualified biologist would mark the buffer zone with construction tape or pin flags and maintain the buffer zone until the end of the breeding season or until the young birds have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found onsite, a qualified biologist would monitor the nests weekly during construction to evaluate potential construction-related disturbances. If establishing the typical buffer zone is impractical, then the qualified biologist may reduce the buffer depending on the species. Daily monitoring would be recommended to ensure that the nests are not disturbed and that no forced fledging occurs. Daily monitoring would occur until the qualified biologist determines that the nests are no longer occupied. Once the qualified biologist determines that the

nests are no longer active, then a letter report would be submitted to the project proponent and the California Department of Fish and Wildlife for their records.

BIO-9. The Applicant would obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit, issued by the California Regional Water Quality Boards, and implement water quality Best Management Practices to prevent discharge of pollutants to surface waters during construction. These Best Management Practices will include standard measures for sediment-tracking reduction, such as vehicle washing and street sweeping, and revegetation of all areas disturbed by construction with native species.

CUL-1. If cultural materials are discovered during project construction, all work would stop within 100 feet of the discovery, and the resident engineer would be notified immediately. If the cultural materials are Native American in origin, Caltrans would contact the appropriate Native American group regarding the discovery. The resident engineer, a Caltrans representative, an archaeologist meeting the Secretary of the Interior's Standards in archaeology, and an appropriate Native American group would assess the discovery to determine if it qualifies as a tribal cultural resource. The appropriate treatment of the discovery, including any applicable avoidance or mitigation strategies, would be determined in consultation with the Native American group. Construction activities would not start until the appropriate treatment has been determined and any applicable mitigation has been completed. Mitigation would follow the recommendations detailed in Public Resources Code Sections 21084.3(a) and 21084.3(b), and State CEQA Guidelines Section 15370.

CUL-2. Worker environmental training would include archaeological and tribal cultural resource awareness. The training would be developed in coordination with the Tribe and would be provided before the start of project construction activities for all personnel working within the project site. The training would identify the appropriate point of contact if a tribal cultural resource is discovered. The training would also include relevant information regarding tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating state laws and regulations. Additionally, the training would emphasize the requirement for confidentiality and culturally appropriate treatment of tribal cultural resources.

CUL-3: Implement Inadvertent Discovery Procedures for Accidental Discovery of Human Remains. Public Resources Code Section 5097.98 must be followed in the event of an accidental discovery or recognition of any human remains. The following steps would be taken if there is an accidental discovery or recognition of human remains once project-related earthmoving activities begin.

- There would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the county coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required.
- If the coroner determines the remains to be Native American, then the coroner would contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission would identify the person it believes to be the "Most Likely Descendant" of the deceased Native American.
- The Most Likely Descendant may recommend to the landowner or the person responsible for the excavation work, means of treating or disposing of the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Where the following conditions occur, the landowner or an authorized representative would rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the Most Likely Descendant or in the project area in a location not subject to further subsurface disturbance.

- The Native American Heritage Commission is unable to identify a Most Likely Descendant, or the Most Likely Descendant failed to make a recommendation within 48 hours after being notified by the commission;
- The Most Likely Descendant identified fails to make a recommendation; or
- The landowner or an authorized representative rejects the recommendation of the Most Likely Descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

EGY-1. Implement Caltrans Standard Specifications Sections 14 and 14-9.02., which state:

- Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017 and Public Contract Code Section 10231.
- Do not dispose of material by burning.

TRA-1. A Traffic Management Plan would be prepared and implemented during construction to facilitate through-traffic requirements and minimize disruptions to traffic and emergency services. Emergency service providers and law enforcement would be notified as early as possible to plan for lane closures, road closures, and other delays related to construction activities.

WDF-1. Require Spark-Generating Construction Equipment be Equipped with Manufacturers' Recommended Spark Arresters: Caltrans would require

contractors to fit any construction equipment that includes a spark arrester with an arrester in good working order. Subject equipment would include, but would not be limited to, heavy equipment and chainsaws. Implementation of this measure would minimize a source of construction-related fires.

WDF-2. If dry vegetation or other fire fuels exist on or near staging areas, welding areas, or any other area on which equipment would be operated, the contractors would clear the immediate area of fire fuel. To maintain a firebreak and minimize the availability of fire fuels, Caltrans would require contractors to clear areas subject to construction activities of combustible natural materials to the extent feasible.

Transportation System Management and Transportation Demand Management Alternatives

The Build Alternative is considered a Transportation System Management Alternative because the roundabout provides intersection traffic control without increasing the number of through lanes on State Route 108/49. However, a Transportation Demand Management Alternative would not meet the purpose and need of the project.

Reversible Lanes

California Code, Streets and Highways Code, Section 100.015, states:

Before the commission approves a capacity-increasing project or a major street or highway lane realignment project, Caltrans or a regional transportation agency submitting the project for approval shall demonstrate that reversible lanes were considered for the project.

State Route 108/49 only has two lanes—one eastbound lane and one westbound lane—within the project limits. Reversible lanes would not be a viable option for the project because there are few east-west routes in the county, and traffic flows in both directions throughout the day.

1.4.2 No-Build (No-Action) Alternative

Under the No-Build (No-Action) Alternative, the existing lane geometrics and intersection controls remain in place at both State Route 108/49 and Mackey Ranch Road and State Route 108/49 and Chicken Ranch Road. The existing intersection of State Route 108/49 and Mackey Ranch Road is a two-way stop-controlled intersection with stop controls placed on the eastbound and westbound approaches (i.e., Mackey Ranch Road and Sierra Rock Road). The existing intersection of State Route 108/49 and Chicken Ranch Road is a three-legged, stop-controlled intersection with a stop control placed on the minor leg (i.e., Chicken Ranch Road). The existing intersections are about 0.7 mile apart from each other.

Additionally, the No-Build (No-Action) Alternative assumes that the intersection of State Route 108/49 and Chicken Ranch Road remains as the main entry into the casino grounds. The No-Build (No-Action) Alternative would not address the identified purpose and need of the project. Congestion would continue to be an issue at the State Route 108/49 and Chicken Ranch Road intersection and overall operations would not be improved.

1.5 Comparison of Alternatives

After comparing and weighing the benefits and impacts of all feasible alternatives, the project development team has identified the Build Alternative as the preferred alternative, subject to public review. Final identification of a preferred alternative would occur after the public review and comment period.

1.6 Alternatives Considered but Eliminated from Further Discussion

An All-Way Stop-Control Alternative was considered as a potential Build Alternative and was analyzed in the Traffic Operational Analysis Report prepared for the project. (GHD 2019a) The All-Way Stop-Control Alternative would have upgraded the intersection at State Route 108/49 and Mackey Ranch Road from a two-way stop-controlled to an All-Way Stop-Controlled operation. The All-Way Stop-Control Alternative would have assumed the addition of stop signs on the north and south legs of the State Route 108/49 and Mackey Ranch Road intersection with modified lane geometry to suit traffic operations. This alternative would have contained the following noteworthy lane configurations:

- Northbound left-turn pocket with 410-foot storage length and 120-foot taper length; and
- Southbound left-turn pocket with 410-foot storage length and 120-foot taper length.

In the Traffic Operational Analysis Report, the All-Way Stop-Control Alternative was projected to provide unacceptable Level of Service E—unstable flow, operating at capacity—in the interim design year 2030 for the p.m. peak hour traffic operations on the State Route 108/49 and Mackey Ranch Road intersection. In the ultimate design year 2040, the All-Way Stop-Control Alternative was projected to provide unacceptable Level of Service F—forced or breakdown flow—for p.m. peak hour traffic operations at the same intersection.

Due to the projected unacceptable level of service, the All-Way Stop-Control Alternative was not pursued further as a project alternative.

A traffic signal alternative was considered as a potential Build Alternative and analyzed in the Traffic Operational Analysis Report (GHD 2019a) and the Intersection Control Evaluation Step Two (GHD 2020b) that was prepared for the project. The traffic signal alternative would have upgraded the State Route 108/49 and Mackey Ranch Road intersection from two-way stop-controlled to traffic-signal controlled. The traffic signal alternative would have assumed the signalization of the State Route 108/49 and Mackey Ranch Road intersection with modified lane geometry to suit traffic operations. This alternative would have contained the following noteworthy lane configurations at the intersection of State Route 108/49 and Mackey Ranch Road:

- Northbound left-turn pocket with 410-foot storage length and 120-foot taper length; and
- Southbound left-turn pocket with 410-foot storage length and 120-foot taper length.

During the Intersection Control Evaluation Step Two process, it was determined the traffic signal alternative would not be pursued further. Based on the analysis and review of the project development team, the traffic signal alternative was not expected to reduce vehicle delay and the severity of accidents or provide aesthetic opportunities as well as the roundabout alternative.

1.7 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Clean Water Act Section 404: Nationwide Permit 14	Application estimated to be submitted in August 2020.
State Water Resources Control Board	Clean Water Act Section 402: National Pollutant Discharge Elimination System Permit	Application estimated to be submitted in August 2020.
Regional Water Quality Control Board	Clean Water Act Section 401: Water Quality Certification	Application estimated to be submitted in August 2020.
Caltrans	Encroachment Permit	Application estimated to be submitted by December 2020.

Chapter 2 CEQA Evaluation

2.1 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant with Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project would indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices 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. The annotations to this checklist provide you with the rationale for significance determinations and discussion of the nature and extent of impacts. This checklist incorporates by reference the information contained in Chapter 1.

2.1.1 Aesthetics

Affected Environment

The following discussion is based on the Visual Impact Assessment for State Route 108/49 Intersection Improvements (HELIX Environmental Planning, Inc. [HELIX] 2019a) approved on May 13, 2020. Nearby state, county, and other scenic resources include the following:

State Scenic Resources: The segment of State Route 108/49 between post miles 0.0 and 15.2, including through the project limits, is eligible for designation as a State Scenic Highway. (Caltrans 2019a) The segment, however, has not been designated as an official State Scenic Highway.

County Scenic Resources: No officially designated county scenic highways occur in the project limits. (Caltrans 2019b) While not officially designated as County Scenic Highways, State Route 108 and State Route 49 are recognized by Tuolumne County as having “outstanding scenic quality as local or state scenic routes” in the 2018 Tuolumne County General Plan. (General Plan) (Tuolumne County 2018a) As noted in General Plan Policy

16.A.2, it is Tuolumne County's policy to "conserve the natural scenic quality and rural character along designated scenic routes in the county."

Other (Federal/National) Scenic Resources: No federally designated scenic resources are at or near the project site. The nearest National Scenic Byway is Ebbetts Pass Scenic Byway on State Route 4, about 20 miles northeast near the census-designated town of Arnold. (Federal Highway Administration 2019) The nearest wild and scenic river is the Tuolumne River (Bureau of Land Management 2019), about 10 miles southeast of the project site.

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact—There are only three officially designated scenic vistas in Tuolumne County. These are vista points on State Route 120 overlooking Don Pedro Lake and the Rim of the World overlook. These scenic vistas are outside of the project viewshed. The project would have no impact on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact—The project would result in minor changes to the visual setting. While this segment of State Route 108/49 is eligible for designation as a State Scenic Highway, its eligibility would not be affected because the roundabout and improvements would take place largely within the existing roadway and most views of rural, rolling hill landforms studded with oak trees and grassland expanses would remain.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact—Viewers of the project site and its surroundings are motorists driving on the roadways. While there are homes to the west, views are generally obstructed by trees and local topography. Motorists would have a low sensitivity to visual changes because they only spend a short amount of time traveling through the intersection. Some tree removal would take place on Mackey Ranch Road, and a gateway entrance is expected to be built on the same road. However, as shown in visual renderings in Appendix D, there would be little change to the rural character

and quality of views of the hills, oak woodlands, and grasslands toward the north, east, and south.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact—Light or glare would not change substantially. While new street lighting would be added to the intersection, it would be shielded and downcast to minimize light pollution. While there would be an increase of 0.2 acre of impervious surfaces, they would be near the existing roadway and would not be expected to substantially affect day or nighttime views in the area. Even though construction is expected to occur during the daytime, if nighttime construction is needed, lighting would comply with local and Caltrans standards. The impact would be less than significant, and minimization measure AES-4 would further reduce impacts.

Environmental Consequences

The existing visual character of the project area is defined as rural. The project would result in minor changes to this characteristic because the proposed project work would largely take place within the existing roadway. Additionally, the State Scenic Highway eligibility of State Route 108/49 would not be affected.

Although several oak trees along Mackey Ranch Road would be removed, a large oak tree at the northeast corner of the intersection would be avoided. The project is also expected to underground existing American Telephone and Telegraph Corporation communication lines and remove a portion of Pacific Gas and Electric Company's overhead power lines within the immediate vicinity of the roundabout. The power lines would be rerouted from tribal land to maintain existing service.

The roundabout, new fixed lighting, and a gateway entrance on Mackey Ranch Road would enhance the visibility of the intersection. Although a total of about 0.50 acre of existing blue oak woodland would be affected, resource change would be low because the removed trees would be directly next to the roadway, and expanses of blue oak woodland would remain visible from the highway. Changes would be consistent with Policy 16.A.2, which aims to conserve the natural scenic quality and rural character along scenic routes. The impact would be less than significant, and minimization measures AES-1 through AES-5 would further reduce impacts.

Avoidance, Minimization, and/or Mitigation Measures

AES-1. Exposed slopes would be revegetated in accordance with Caltrans standards regarding erosion control.

AES-2. If aesthetic elements, such as hardscape aesthetic treatments, are incorporated during the project's final design, such features would be

designed and implemented in coordination with Caltrans' landscape architects.

AES-3. Vegetation clearing would only occur within the delineated project boundaries to minimize the impacts. Trees in areas along the edge of the construction zone would be trimmed whenever possible, and only those trees that lie within the active construction areas would be removed.

AES-4. Construction lighting types, plans, and placement would comply with Caltrans' standards and local standards to minimize light and glare impacts on surrounding sensitive uses.

AES-5. Implement dust suppression in accordance with Caltrans Standard Specifications for Construction Sections 10 and 18. (Dust Control)

2.1.2 Agriculture and Forest Resources

Affected Environment

The discussion below is based on the approved Land Use Technical Memorandum (HELIX 2019b) dated October 11, 2019 and amended on April 23, 2020.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program does not map Tuolumne County; therefore, Important Farmlands have not been formally designated in Tuolumne County.

General Plan Land Use Designations

The parcel northwest of the intersection (Assessor's Parcel Number 058-550-001) is designated Public, and the parcels to the northeast, southeast, and southwest (Assessor's Parcel Numbers 058-550-018, 058-550-017, and 058-550-002, respectively) are designated Agricultural in the current 2018 Tuolumne County General Plan. (Tuolumne County 2018a) (Figure 2-1)

The Public designation "identifies lands that are owned by public agencies and recognizes that these lands are exempt from county land-use regulations." (Tuolumne County 2019a) Assessor's Parcel Number 058-550-001 is Federal Trust Land and is designated Public.

The Agricultural designation "provides for the production of food, feed, fiber, nursery, and apiary commodities and other productive or potentially productive lands where commercial agricultural uses can exist without creating conflicts with other land uses or where potential conflicts can be minimized." (Tuolumne County 2019a) Assessor's Parcel Numbers 058-550-018, 058-550-017, and 058-550-002 are designated Agricultural.

County Designated Zoning District

The four parcels that surround the intersection are zoned Exclusive Agricultural District, Thirty-Seven Acre Minimum District, and Open Space District (see Figure 2-8 in Section 2.1.11, Land Use and Planning). Additionally, the parcel to the northeast, Assessor's Parcel Number 058-550-018, currently includes the Agricultural Preserve Combining District. The parcel is also under a Williamson Act contract, although a notice of nonrenewal for this contract was filed on September 23, 2019 (Tuolumne County 2019c) and the contract is in nonrenewal status as of January 1, 2020.

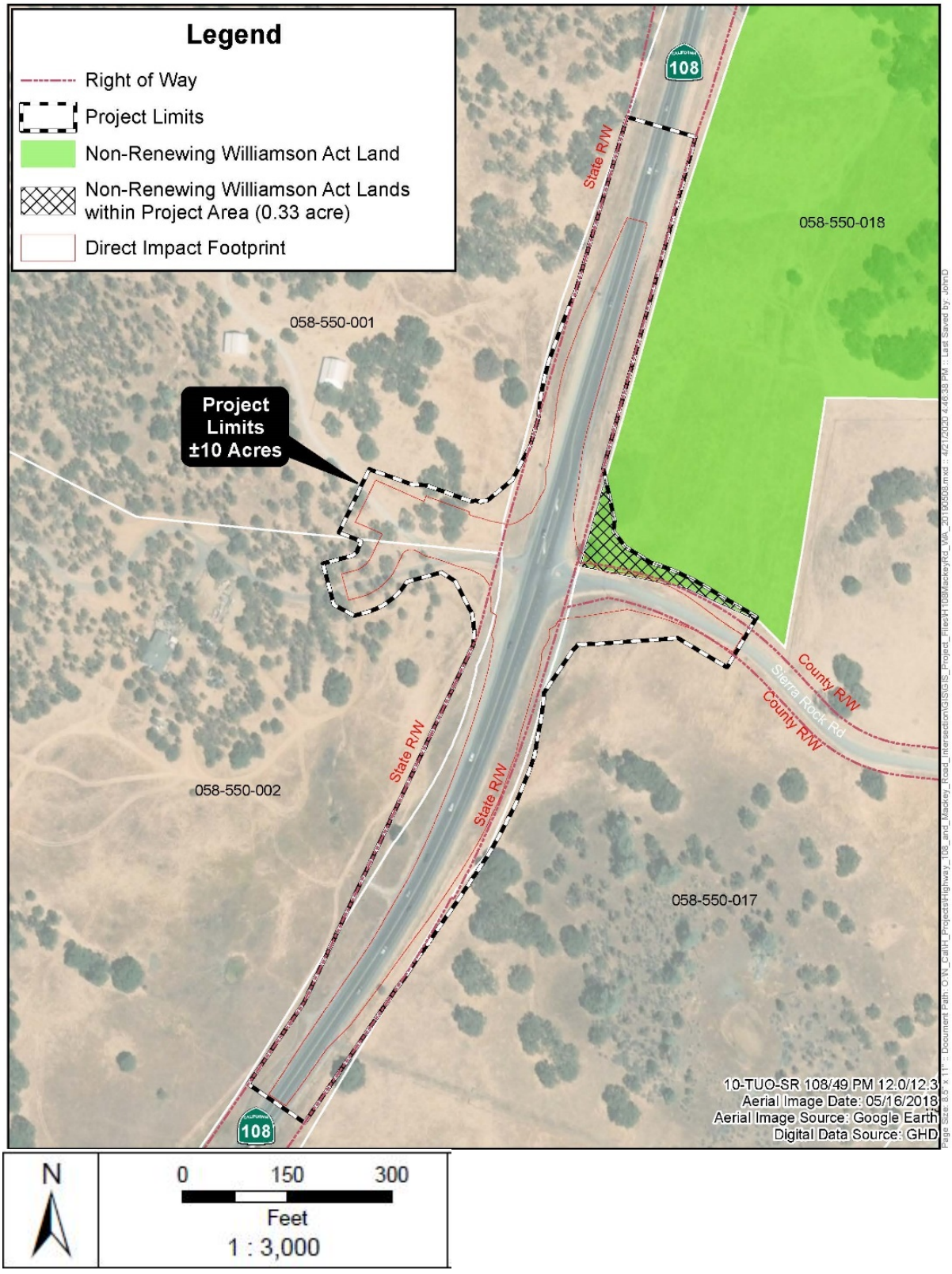
The purpose of the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District is to provide agricultural and resource production where commercial agricultural uses can exist without the encroachment of incompatible uses and provide the preservation and conservation of landscapes and open space.

Landscapes and open space: Permitted uses in the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District include general farming and ranching, public safety facilities, and accessory uses and structures pertinent to permitted uses, as well as public utility distribution facilities, amongst others. Permitted uses in an Open Space District include roads, driveways, trails, bridges, underground public utilities—permitted in conjunction with another entitlement for which an environmental review under CEQA has been adopted—amongst others. The purpose of the Agricultural Preserve Combining District is to implement the Williamson Act. When the Agricultural Preserve Combining District is combined with an Open Space District, permitted uses include those listed under Open Space, amongst others. When the Agricultural Preserve Combining District is combined with the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District, permitted uses include general ranching and accessory uses and structures pertinent to permitted uses, amongst others.

Williamson Act

Assessor's Parcel Number 058-550-018, at the northeast corner of the existing intersection, is under a Williamson Act contract (see Figure 2-1). The Williamson Act contract was not renewed as of January 1, 2020. A notice of nonrenewal was filed on September 23, 2019. No other parcels at the project site are under a Williamson Act contract.

Figure 2-1 Parcels and Non-Renewing Williamson Act Lands



Tuolumne County's Resolution 106-04 establishes county regulations for implementing the California Land Conservation Act (Williamson Act), including establishing the minimum acreage for Williamson Act Land conservation contracts in the county. The minimum parcel size for dryland grazing operations is 160 acres.

CEQA Significance Determinations for Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact—Important farmlands have not been formally designated in Tuolumne County; therefore, there would be no impact.

Further, soils at the site are not classified as prime farmland. Most of the project site is underlain by the Lofercreek-Bonanza complex soil unit, which has 3 percent to 15 percent slopes; a small portion is underlain by the Loafercreek-Gopheridge complex soil unit, which has 15 percent to 30 percent slopes. The farmland classification of these units is "not prime farmland" (Natural Resources Conservation Service 2019).

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Less Than Significant Impact— Project-related impacts to Williamson Act contract lands would be considered less than significant. This determination is based on the roadway being considered an allowed accessory use under existing zoning for Assessor's Parcel Number 058-550-018, the existing county right-of-way that falls within the parcel, the minor 57 square feet of impact, and the non-renewal of the Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact—No forest land, timberland, or timberland zoned Timberland Production are in the project area. The four parcels that surround the intersection are zoned Exclusive Agricultural District, Thirty-Seven Acre Minimum District, and Open Space District as detailed in answer "b." Therefore, no impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact—No forest land is at or next to the project site. Conversion of forest land to non-forest use would not occur.

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?

No Impact—The project would improve an existing intersection that is designed to accommodate projected traffic. While the project would result in a wider footprint onto agriculturally zoned land, it is not expected to induce unplanned growth or change land-use patterns. Mackey Ranch Road and Sierra Rock Road would tie-in with existing two-lane roads, and the roadway on State Route 108/49 would taper to the existing two-lane State Route. Therefore, the project would not convert Farmland to non-agricultural use, or convert forest land to non-forest use. No impact would occur.

Environmental Consequences

Assessor's Parcel Number 058-550-018, at the northeast corner of the existing intersection, is currently under a Williamson Act contract (04WA-06) with agricultural uses defined as dryland grazing. The Williamson Act contract for Assessor's Parcel Number 058-550-018 was not renewed as of January 1, 2020. The nonrenewal starts a nine-year countdown to contract expiration. As shown in Figure 2-1, the project limits overlap 0.33 acre of this parcel; however, disturbance within the overlapping 0.33 acre would be temporary, except for 57 square feet that would be included within the intersection footprint. Proposed improvements would mainly be built outside of the boundaries of Assessor's Parcel Number 058-550-018 and would not result in a change in the use of land that would conflict with dryland grazing. Building the proposed improvements would also not reduce land under contract to less than 160 acres—the minimum acreage required for grazing land under a Williamson Act contract.

As an accessory use to agricultural activities, roadways are an allowable use within the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District. As shown in Figure 2-1, county right-of-way for the roadway currently extends within Assessor's Parcel Number 058-550-018. Proposed improvements would improve access to existing agricultural operations within Assessor's Parcel Numbers 058-550-018 and 058-550-017. The project would comply with CEQA and is not expected to cause conflicts with the Open Space Zoning District and Agricultural Preserve overlay. Assessor's Parcel Number 058-550-018 is 32.5 acres in area, and the 57 square feet of roadway proposed to cross within it would total less than a 0.01 percent change in land surface area.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.3 Air Quality

Affected Environment

The discussion below is based on the State Route 108/49 and Mackey Ranch Road Intersection Improvements Project Air Quality Analysis for Federal Conformity and Air Quality Construction Emissions Analysis Technical Memorandums (Air Quality Technical Memorandums) (GHD 2019b; GHD 2019c), dated September 20, 2019, and Amendment Memorandums, dated March 16, 2020.

The project is in the Mountain Counties Air Basin, which is made up of the following counties: Plumas, Sierra, Nevada, Placer (partially), El Dorado (partially), Amador, Calaveras, Tuolumne, and Mariposa. The Tuolumne County Air Pollution Control District regulates stationary sources of air pollution within the county. The district has identified the following significance thresholds for projects:

- Reactive Organic Gases: Exactly 1,000 pounds per day or 100 tons per year.
- Oxides of Nitrogen: Exactly 1,000 pounds per day or 100 tons per year.
- Particulate Matter, particles of 10 micrometers or smaller: Exactly 1,000 pounds per day or 100 tons per year.
- Carbon Monoxide: Exactly 1,000 pounds per day or 100 tons per year.

Table 2.1 shows the attainment and nonattainment status of the study area for all criteria pollutants. Tuolumne County is in nonattainment for ozone, but it is in attainment or is unclassified for other criteria pollutants.

Table 2.1 Tuolumne County Criteria Pollutant Attainment Status

Pollutant	State	Federal
Ozone (one hour)	Nonattainment	Not Applicable
Ozone (eight hours)	Nonattainment	Nonattainment
Particulate Matter, particles of 10 micrometers or smaller	Unclassified (Tuolumne County)	Unclassified
Particulate Matter, particles of 2.5 micrometers or smaller	Unclassified	Unclassified/Attainment
Carbon monoxide	Attainment	Unclassified/Attainment
Nitrogen dioxide	Attainment	Unclassified/Attainment

CEQA Significance Determinations for Air Quality

The significance criteria established by the Tuolumne County Air Pollution Control District were used to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact—The project is in the Mountain Counties Air Basin and within the jurisdiction of the Tuolumne County Air Pollution Control District and California Air Resources Board. The Tuolumne County Air Pollution Control District is responsible for controlling air pollution from stationary sources, and the California Air Resources Board is responsible for strategies that pertain to air pollution from mobile sources. The applicable air quality plan is the State Implementation Plan. Conformance to the State Implementation Plan demonstrates that a project is consistent with the goals of the Clean Air Act. The project is not a capacity-increasing transportation project and would have no impact on traffic volumes and would generate a less than significant amount of pollutants during construction, as discussed in answer b) below. The project is exempt from air quality conformity analysis requirements per 40 Code of Federal Regulations Section 93.126 (Exempt Projects), which states:

“Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in table 2 of this section are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP [Transportation Improvement Program]. A particular action of the type listed in table 2 of this section is not exempt if the MPO [Metropolitan Planning Organization] in consultation with other agencies (see § [Section] 93.105(c)(1)(iii)), the EPA [Environmental Protection Agency], and the FHWA [Federal Highway Administration] (in the case of a highway project) or the FTA [Federal Transit Administration] (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs [Metropolitan Planning Organizations] must ensure that exempt

projects do not interfere with TCM [Transportation Control Measure] implementation."

Table 2 (Applicable Exempt Project Types) of 40 Code of Federal Regulations Section 93.126 summarizes the exempt project types. The State Route 108/49 Mackey Ranch Road intersection Improvements project qualifies as an exempt safety project for several reasons. The project includes a highway crossing and corrects, improves, or eliminates a hazardous location or feature. The project also includes traffic control devices and operating assistance as well as adds medians.

The project would not conflict with or obstruct the implementation of the State Implementation Plan, the applicable air quality plan. Therefore, no impact would occur.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

No Impact—The project is in an area that is nonattainment for ozone under the California Ambient Air Quality Standards and the National Ambient Air Quality Standards. As discussed in the previous answer, the project is exempt from conformity requirements and is not considered to have operational impacts because it is not a capacity-increasing project.

Potential air quality impacts would be associated with temporary construction emissions. The project would generate short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Fugitive dust—sometimes referred to as windblown dust or particulate matter—and particles of 10 micrometers or smaller would be generated during excavation, grading, and hauling activities.

Both fugitive dust and construction equipment exhaust emissions would be temporary and transitory. Dust and emissions would be controlled through standard measures AES-5 and EGY-1 (see Section 2.1.1 and 2.1.6, respectively). These standard measures require the project design to incorporate Caltrans 2018 Standard Specifications Section 10-5 "Dust Control," Section 14-9 "Air Quality," and Section 18 "Dust Palliatives."

The potential construction-generated emissions for the project were quantified by comparing the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model (version 9.0.0) to the Tuolumne County Air Pollution Control District thresholds. Construction parameters included a construction start year of 2020 and a duration of six months. The emissions model data input and output are provided in Appendix E and are summarized below in Table 2.2 and Table 2.3. Project construction annual

and daily emissions were found to be below the Tuolumne County Air Pollution Control District thresholds of significance.

Table 2.2 Annual Construction-Generated Air Pollutant Emissions In Tons

Parameter	Reactive Organic Gases	Oxides of Nitrogen	Particulate Matter, Particles of 10 Micrometers or Smaller	Carbon Monoxide
Project Construction Emissions	1.7	18.1	1.5	13.7
Tuolumne County Air Pollution Control District Thresholds of Significance	100	100	100	100
Significant Impact?	No	No	No	No

Source: GHD 2019b, Tuolumne County Air Pollution Control District 2019.

Table 2.3 Daily Construction-Generated Air Pollutant Emissions In Pounds

Parameter	Reactive Organic Gases	Oxides of Nitrogen	Particulate Matter, Particles of 10 Micrometers or Smaller	Carbon Monoxide
Project Construction Emissions	6.1	68.7	5.0	48.2
Tuolumne County Air Pollution Control District Thresholds of Significance	1,000	1,000	1,000	1,000
Significant Impact?	No	No	No	No

Source: GHD 2019b, Tuolumne County Air Pollution Control District 2019.

As summarized in Table 2.2 and Table 2.3, project construction emissions would be below the Tuolumne County Air Pollution Control District thresholds of significance, and there would be a less than significant impact on criteria pollutants. The project's impact on criteria pollutants would be further minimized through Caltrans' Standard Best Management Practices, as discussed in standard measure AQ-1. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. No impact would occur.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact—Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory

diseases. Residential uses are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods, resulting in sustained exposure to any pollutants present. The closest receptor is a home about 700 feet southwest of the intersection.

The project would not result in a new stationary source of emissions, such as a refinery, factory, or power plant, and is not expected to have operational impacts from long-term mobile source emissions (see answers "a" and "b"). Further, emissions during construction would be below thresholds. Based on this and the temporary nature of construction, the project would not result in an impact to sensitive receptors.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact—Construction-related odors would be temporary and disperse rapidly away from the source. Construction-generated emissions would not expose receptors to objectionable odor emissions; therefore, the project would have no impact with the implementation of standard measure AQ-1.

Avoidance, Minimization, and/or Mitigation Measures

AQ-1. Implement Caltrans' Standard Best Management Practices during construction. Best Management Practices may include the following features to minimize erosion and sediment loss:

- Staging areas would include reinforced temporary construction entrances, protected concrete washout, and storage facilities for materials, as necessary;
- Following tree and shrub removal, all disturbed areas would be stabilized with temporary hydraulic mulch;
- During construction, temporary hydraulic mulch, check dams, and fiber rolls would be placed in advance of predicted rain events in areas currently under construction;
- Erosion controls made up of hydroseed, hydromulch, and fiber rolls would be placed along the project where necessary to prevent erosion;
- Following the completion of grading and paving activities, all equipment and materials would be removed, and staging areas would be restored to resemble pre-construction conditions;
- Permanent erosion control made up of hydroseed, hydromulch, and biodegradable fiber roll would be used where ground-disturbing activities occur. Native seed mix would be used for all revegetation; and
- Following final stabilization, temporary Best Management Practices and temporary fencing would be removed.

See AES-5 in Section 2.1.1, Aesthetics, and EGY-1 in Section 2.1.6, Energy.

2.1.4 Biological Resources

Affected Environment

The following discussion is based on the Natural Environment Study—State Route 108/49 and Mackey Ranch Road intersection Improvements project (HELIX 2019c), approved on February 11, 2020, and the Amendment to the Natural Environment Study, dated April 30, 2020. Updated species lists were pulled on July 28, 2020 and showed no changes.

The Biological Study Area encompasses the project's limits of disturbance. The Biological Study Area includes roadside easement areas along State Route 108/49 and extends beyond the fence lines to the east and west on parcels owned by the Tribe. Available information pertaining to the natural resources of the region was reviewed. The U.S. Fish and Wildlife Service's Information for Planning and Consultation, the California Department of Fish and Wildlife's California Natural Diversity Database, and California Native Plant Society's Inventory of Rare and Endangered Plants databases were all queried for species information. Habitat types within the Biological Study Area were assessed for their potential to support special-status plant and wildlife species. Botanical inventories were conducted in accordance with the California Department of Fish and Wildlife's (2009) plant survey protocols. Plant species that were seen within the Biological Study Area that are designated as invasive by the California Invasive Plant Council, or as noxious weeds by the California Department of Food and Agriculture, were noted during the biological surveys.

An aquatic resource delineation was completed to map aquatic resources within the Biological Study Area in accordance with the U.S. Army Corps of Engineers' standards. Soil, vegetative, and hydrological data were recorded. The results of the aquatic resources delineation are summarized and discussed in detail under a separate cover (Foothill Associates 2018). The U.S. Army Corps of Engineers verified the Aquatic Resources Delineation Report and a preliminary jurisdictional determination was issued on December 2, 2019 (see Chapter 3, Comments and Coordination).

An International Society of Arboriculture-certified arborist assessed trees within the Biological Study Area. The tree survey consisted of mapping all native oak trees that have a trunk diameter at breast height that is greater than 4 inches, single-trunked or multi-trunked.

Special-Status Plants

Special-status plant species with the potential to occur within the Biological Study Area include: big scale balsamroot *(Balsamorhiza macrolepis),* Brandegee's clarkia *(Clarkia biloba ssp. brandegeeae),* Chinese camp brodiaea *(Brodiaea pallida),* Congdon's lomatium *(Lomatium congdonii),* Jepson's onion *(Allium jepsonii),* Layne's ragwort *(Packera layneae),* Rawhide Hill onion *(Allium tuolumnense),* red hills cryptantha *(Cryptantha spithamaea),*

red hills soap plant *(Chlorogalum grandiflorum),* shaggyhair lupine *(Lupinus spectabilis),* Stanislaus monkeyflower *(Erythranthe marmorata),* stinkbells *(Fritillaria agrestis),* Tuolumne button celery *(Eryngium pinnatisectum),* and veiny monardella *(Monardella venosa).*

A formal floristic survey was conducted within the clear and identifiable bloom period for special-status species for which the Biological Study Area contained suitable habitat. A comprehensive species list was taken, and no special-status plant species were seen within the Biological Study Area. Based on results of the May 2018 biological surveys, there is no potential for special-status plant species to occur within the Biological Study Area. Each special-status plant species was eliminated from further consideration due to one or more of the following reasons:

- The Biological Study Area does not contain suitable habitat for the species in question;
- The Biological Study Area is outside the known elevational range of the species in question; and
- A formal floristic survey was conducted within the species' clear and identifiable bloom period, and the species was not seen within the Biological Study Area.

Invasive Plant Species

Several invasive plant species and noxious weeds are present within the annual grassland, ruderal, and the disturbed/developed areas within the Biological Study Area. Invasive plant and noxious weed species present in the Biological Study Area include slender oat *(Avena barbata),* wild oat *(Avena fatua),* black mustard *(Brassica nigra),* ripgut brome *(Bromus diandrus),* soft chess *(Bromus hordeaceus),* Italian thistle *(Carduus pycnocephalus),* yellow star-thistle, Medusa head *(Elymus caput-medusae),* coastal heron's bill *(Erodium cicutarium),* Italian ryegrass *(Festuca perennis),* wild geranium *(Geranium maculatum),* seaside barley (*Hordeum marinum*), foxtail barley (*Hordeum jubatum*), Hyssop loosestrife *(Lythrum hyssopifolia),* ribwort *(Plantago lanceolata),* curly dock *(Rumex crispus),* milk thistle *(Silybum marianum),* field hedge parsley *(Torilis arvensis),* and rose clover *(Trifolium hirtum).*

Special-Status Animals

The following special-status species have the potential to occur within the Biological Study Area: coast horned lizard *(Phrynosoma coronatum),* tricolored blackbird *(Agelaius tricolor),* pallid bat *(Antrozous pallidus),* Townsend's big-eared bat *(Corynorhinus townsendii),* western mastiff bat *(Eumops perotis),* western red bat *(Lasiurus blossevillii),* and nesting migratory birds.

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. The non-native annual grassland and the trees within the blue oak woodland contain nesting and foraging habitat for various raptors and other migratory bird species.

Coast Horned Lizard

The coast horned lizard is a California Species of Special Concern. Coast horned lizards inhabit open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains from sea level to 8,000 feet above mean sea level. Coast horned lizards are typically found in grasslands, coniferous forests, woodlands, and chaparral with open areas and patches of loose soil. Coast horned lizards can also be found in lowlands along sandy washes with scattered shrubs and along dirt roads; they are frequently found near anthills. (Zeiner et al. 1988) There is one California Natural Diversity Database record for this species within 5 miles of the Biological Study Area. (California Department of Fish and Wildlife 2018a) The non-native annual grassland and blue oak woodland communities provide potential habitat for this species.

No coast horned lizards were seen during biological surveys; however, the project has the potential to directly impact coast horned lizards through the removal or temporary disturbance of 1.67 acres of annual grassland and 0.50 acre of blue oak woodland. Refer to Figure 3 and Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for exhibits showing the biological communities and the project impacts. Permanent direct impacts could occur through ground disturbance of the soil and the removal of trees and shrubs. Disturbances from equipment and workers could cause indirect impacts.

Tricolored Blackbird

The tricolored blackbird was identified as a state threatened species listed under the California Endangered Species Act. The tricolored blackbird is a colonial species that breeds in freshwater marshes of cattail *(Typha sp.),* bulrush *(Scirpoides holoschoenus),* sedge *(Carex sp.),* and non-native vegetation including Himalayan blackberry *(Rubus armeniacus).* Nests occur in large colonies of up to thousands of individuals. (NatureServe 2018) Nesting locations must be large enough to support a minimum colony of about 50 pairs. (Zeiner et al. 1990) This species forages in grasslands and agricultural fields with low-growing vegetation. (Shuford and Garladi 2008) There are three California Natural Diversity Database records for this species within 5 miles of the Biological Study Area. (California Department of Fish and Wildlife 2018a)

No tricolored blackbirds were seen within the Biological Study Area during biological surveys. The annual grassland within the Biological Study Area provides suitable foraging habitat for this species. However, the Biological Study Area does not provide suitable breeding habitat for this species.

Special-Status Bat Species

California is home to several special-status bat species, including pallid bats, Townsend's big-eared bats, western mastiff bats, and western red bats. Bat numbers are in decline throughout the U.S. due to loss of roosting habitat, habitat conversion, and habitat alteration. There are two known California Natural Diversity Database records for pallid bats, three for Townsend's big-eared bats, and three for western mastiff bats within 5 miles of the Biological Study Area. (California Department of Fish and Wildlife 2018a) Trees within the Biological Study Area provide potential roosting habitat for these bat species, and the annual grassland within the Biological Study Area provides foraging habitat for them.

No special-status bats were seen during the biological survey. The annual grassland provides suitable foraging habitat for some species of special-status bats. Trees within the Biological Study Area provide potential roosting habitat for special-status bats species. Based on this information and known records in the vicinity of the Biological Study Area, these special-status bat species may forage and potentially roost within the Biological Study Area.

State or Federally Protected Wetlands and Other Waters

An aquatic resource delineation was submitted to the U.S. Army Corps of Engineers on October 2, 2018, and subsequently verified on October 18, 2018. On December 2, 2019, the U.S. Army Corps of Engineers verified the revised aquatic resources delineation prepared by HELIX Environmental Planning, Inc. Approximately 0.48 acre of aquatic features consisting of depressional seasonal wetland (0.34 acre), riverine seasonal wetland (0.11 acre), ephemeral drainage (0.02 acre), and ditch (0.01 acre) are present within the Biological Study Area. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities.

The U.S. Army Corps of Engineers determines the extent of its jurisdiction over wetlands and other waters of the U.S. on a case-by-case basis during the verification process. Areas considered jurisdictional by the U.S. Army Corps of Engineers are subject to the regulatory requirements of the Clean Water Act. Such requirements include permitting and mitigation associated with impacts to jurisdictional features.

Trees

The Tuolumne County Board of Supervisors adopted Ordinance 2903 on April 1, 2008, and added it to Chapter 9.24 of the Tuolumne County Ordinance

Code. (County of Tuolumne 2008) The ordinance establishes procedures and penalties to discourage the premature removal of oak trees. Premature removal means:

- Removal of native oak trees resulting in a 10 percent or greater average decrease in native oak canopy cover within an oak woodland;
- Removal of any old-growth oak tree (defined as any native oak tree that is 24 inches or greater in diameter at breast height); or
- Removal of any valley oak tree—that has a diameter at breast height that is 5 inches or greater—from a site within five years before submitting an application for a discretionary entitlement from Tuolumne County for a land development project.

A total of 0.77 acre of blue oak woodland habitat was mapped within the Biological Study Area, consisting of 57 individually inventoried blue oaks.

CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact—Habitat types within the Biological Study Area were assessed for their potential to support special-status plant and wildlife species. The potential impacts are detailed below.

Special-Status Plant Species

As previously discussed in the Affected Environment section, there is no potential for special-status plant species to occur within the Biological Study Area. The project would not impact special-status plant species.

Special-Status Animal Species

The following special-status animal species have the potential to occur within the Biological Study Area: coast horned lizard, tricolored blackbird, pallid bat, Townsend's big-eared bat, western mastiff bat, western red bat, and nesting migratory birds.

Coast Horned Lizard

No coast horned lizards were seen during biological surveys; however, the project has the potential to directly impact the species through the removal or temporary disturbance of 1.67 acres of annual grassland and 0.50 acre of blue oak woodland. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities. Permanent direct impacts could

occur through ground disturbance of the soil, and the removal of trees and shrubs. Disturbances from the movement of equipment and workers could cause indirect impacts. With the implementation of standard measure BIO-1, the project would result in a less than significant impact.

Tricolored Blackbird

No tricolored blackbirds were seen within the Biological Study Area during biological surveys. The Biological Study Area does not provide suitable breeding habitat for this species, and no impacts on nesting habitat would occur.

There would be a permanent loss of suitable foraging habitat (1.08 acres of annual grassland) for tricolored blackbirds. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities. It is unlikely that tricolored blackbirds forage in this area, given the current level of disturbance within the Biological Study Area. Extensive foraging habitat for this species would remain immediately outside of the Biological Study Area. The project would have less than significant impacts to tricolored blackbirds.

Bat Species

No special-status bat species were seen during the biological survey. However, annual grassland in the Biological Study Area provides suitable foraging habitat for some species of special-status bats, and trees provide potential roosting habitat. Based on this information and known records in the vicinity of the Biological Study Area, special-status bat species may forage and potentially roost within the Biological Study Area.

The project would result in a permanent loss of potential foraging habitat for special-status bat species. Additionally, roosting habitat may be impacted if trees within the Biological Study Area that are currently being used as roost sites are removed during project construction.

With the implementation of standard measure BIO-2, the project would result in a less than significant impact.

Nesting Migratory Birds

No active nests were seen during the May 2018 biological surveys. Annual grassland and blue oak woodland provide nesting habitat for migratory birds and raptors during the nesting season—February 1 through September 30—and foraging habitat year-round. The project could result in permanent and temporary direct impacts to migratory birds and raptors. Permanent direct impacts could occur to ground-nesting birds through the destruction of nests if they are present within the Biological Study Area during clearing and grading operations. Permanent direct impacts could also occur through the removal of trees should any active nests be present during tree removals. Nest

abandonment could result in the death of chicks or eggs. With the implementation of standard measures BIO-6, BIO-7, and BIO-8, the project would result in a less than significant impact.

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact—Sensitive natural communities, as defined by the California Department of Fish and Wildlife, that occur within the Biological Study Area include potential waters of the U.S., waters of the State, oak trees, and blue oak woodland. Impacts to waters of the U.S. and State would be less than significant as described in answer "c" below. Impacts on oak trees and blue oak woodland would be less than significant as described in answer "e" below.

Invasive plant species and noxious weeds are present within the non-native grassland, ruderal habitat, and disturbed/developed areas. Minimization measure BIO-11 would be implemented to avoid and prevent the spread of invasive plant species and noxious weeds to sensitive natural communities during ground-disturbing activities.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact—The project would permanently impact 0.32 acre of depressional seasonal wetland and 0.02 acre of riverine seasonal wetland. The project would temporarily impact 0.01 acre of riverine seasonal wetland. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities. The project may extend/enhance one of the existing wetlands occurring along the roadside to ensure that no net loss of wetlands occurs. The project would have no impact on ephemeral drainage or ditches.

The Tribe would be required to obtain a Section 404 Permit under the Clean Water Act for any impacts to wetlands or other waters subject to the jurisdiction of the U.S. Army Corps of Engineers. Impacts would also require a 401 Water Quality Certification from the Regional Water Quality Control Board under Section 401 of the Clean Water Act. Section 404 and 401 Permits would include common terms and conditions to minimize impacts and to fully mitigate for any permanent impacts on wetlands and other waters. Standard measures BIO-3, BIO-4, BIO-5 and BIO-9 as well as compensatory mitigation measure BIO-10 are required based on current regulatory requirements and would reduce impacts to less than significant.

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?

Less Than Significant Impact—No active nests were seen during the May 2018 biological surveys. Annual grassland and blue oak woodland provide nesting habitat for migratory birds and raptors during the nesting season—February 1 through September 30—and foraging habitat year-round. The project could result in permanent and temporary direct impacts to migratory birds and raptors. Permanent direct impacts could occur to ground-nesting birds through the destruction of nests if they are present within the Biological Study Area during clearing and grading operations. Permanent direct impacts could also occur through the removal of trees should any active nests be present during tree removals. Nest abandonment could result in the death of chicks or eggs. With the implementation of standard measures BIO-6, BIO-7, and BIO-8, the project would result in a less than significant impact.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact—The project is expected to impact about 0.50 acre of existing blue oak woodland. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities. Based on an analysis using field-verified aerial imagery, less than 0.01 percent of the nearby oak woodland stand—which continues outside of the Biological Study Area—would be impacted. This falls well below the 10 percent threshold outlined in the ordinance, which, if exceeded, would require mitigation. None of the inventoried oak trees meet the protected “old-growth oak” diameter criterion of 24 inches described in the ordinance.

As a result, the project would have a less than significant impact regarding local policies or ordinances that protect biological resources, such as a tree preservation policy or ordinance. Avoidance and minimization measure BIO-12 would be implemented to minimize impacts.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact—The project site is not within or related to Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans.

Environmental Consequences

Special-Status Animal Species

The project would have the potential to directly impact coast horned lizards through the removal of 1.67 acres of annual grassland and 0.50 acre of blue oak woodland. The movement of equipment and workers would lead to potential indirect and temporary impacts. Tricolored blackbirds would be potentially impacted by a permanent loss of suitable habitat of 1.08 acres of annual grassland. However, the current level of disturbance in the project area makes the area unsuitable for foraging and breeding. Loss of grassland and tree removal in the Biological Study Area would potentially impact suitable foraging habitat and roosting habitat for special-status bat species. The implementation of BIO-1 and BIO-2 would minimize impacts to coast horned lizards, tricolored blackbirds, and special-status bat species to less than significant.

Seasonal Wetland

The project is expected to permanently impact 0.32 acre of depressional seasonal wetland and 0.02 acre of riverine seasonal wetland. The project would temporarily impact 0.01 acre of riverine seasonal wetland. The project may increase one of the existing wetlands occurring along the roadside to ensure no net loss of wetlands occurs. A Section 404 Permit under the Clean Water Act and a 401 Water Quality Certification from the Regional Water Quality Control Board under Section 401 of the Clean Water Act would be required. The implementation of standard measures BIO-3, BIO-4, BIO-5, and BIO-9 and mitigation measure BIO-10 would reduce impacts to less than significant.

Migratory Birds

The project has the potential to directly impact ground-nesting birds through the destruction of nests if they are present within the Biological Study Area during clearing and grading operations and through the removal of trees should any active nests be present during tree removals. Standard measures BIO-6, BIO-7, and BIO-8 would be implemented.

Blue Oak Woodland

The project would impact about 0.50 acre of existing blue oak woodland and less than 0.01 percent of nearby oak woodland sand. The vast majority of this contiguous oak woodland sand exists outside of the study area and provides large expanses of habitat. No mitigation is required because impacts to oak woodland sand would be below the 10 percent threshold outlined in the ordinance, and none of the inventoried oak trees meet the protected “old-growth oak” diameter criterion of 24 inches described in the ordinance. Avoidance and minimization measure BIO-12 would be implemented to minimize impacts.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measures

BIO-1. A qualified biologist would conduct a pre-construction survey for coast horned lizards within the Biological Study Area within 14 days before ground-disturbing activities start. If no coast horned lizards are seen, no additional measures would be recommended. If construction does not start within 14 days or stops for more than 14 days after the pre-construction survey, then a new survey would be recommended.

If coast horned lizards are found, a qualified biologist would conduct a second pre-construction survey within 24 hours before construction activities start. The qualified biologist would be present onsite during initial ground clearing and grading activities to relocate any coast horned lizards found within the construction footprint to suitable habitat away from the construction zone but within the Biological Study Area.

If coast horned lizards are found, a qualified biologist would conduct an environmental awareness training for all construction personnel. The training would include how to identify special-status species, required practices before the start of construction, and general measures that are being implemented to conserve the species as they relate to the project. The training would also cover penalties for non-compliance and boundaries of the Biological Study Area and the permitted disturbance zones. Supporting materials containing training information would be prepared and distributed.

Upon completion of training, all construction personnel would sign a form stating that they have attended the training and understand all the measures. The project proponent would keep proof of this instruction on file. The project proponent would provide the California Department of Fish and Wildlife with a copy of the training materials and the forms signed by construction personnel showing that training has been completed within 30 days of the completion of the first training session. Copies of signed forms would be submitted monthly as additional training occurs for new employees. The crew foreman would be responsible for ensuring that construction personnel stick to guidelines and restrictions. If new construction personnel are added to the site, the crew foreman would ensure that they receive the mandatory training before starting work.

BIO-2. Pre-construction surveys for special-status bat species are recommended within 14 days before the start of ground-disturbing or tree removal activities. If no special-status bat species are seen roosting, then a letter report documenting the results of the survey would be provided to the project proponent, and no additional measures would be recommended. If construction does not start or if any trees expected to be removed are not removed within 14 days after the pre-construction survey or construction stops for more than 14 days, a new survey would be recommended.

If special-status bat species are found, consultation with the California Department of Fish and Wildlife would be recommended to determine appropriate avoidance measures. Appropriate avoidance measures may include establishing a buffer around the roost tree until it is no longer occupied. The roost tree would not be removed until a biologist has determined that special-status bat species no longer occupy the tree.

BIO-3. The Tribe would obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit, issued by the Regional Water Quality Control Board. The Tribe would also implement water quality Best Management Practices to prevent discharging pollutants to surface waters during construction. These Best Management Practices would include standard measures for tracking sediment reduction, such as vehicle washing and street sweeping, and revegetating all areas with native species that were disturbed by construction activities.

BIO-4. Before starting ground-disturbing activities, the Tribe would obtain all required regulatory authorizations from the U.S. Army Corps of Engineers and Regional Water Quality Control Board for the discharge of dredged or fill material within waters of the U.S.

BIO-5. All aquatic resources delineated within the project site are considered potential waters of the U.S. and/or waters of the State. If it is determined that some of the aquatic resources within the project site are not subject to federal jurisdiction, these resources may still be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act should the project result in impacts to these resources. Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste—other than to a community sewer system—within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may make up a discharge of waste that could affect the quality of waters of the State. A report of waste discharge would be filed for impacts to non-federal waters if required.

BIO-6. If construction is expected to occur during the nesting season—February 1 through September 30—then a qualified biologist would conduct an environmental awareness training for all construction personnel. The training would include information about the potential for active nests to occur within the Biological Study Area and procedures to follow if active nests are found during construction.

BIO-7. If feasible, tree removals would be completed outside of the nesting season—October 1 through January 31. The nesting season is from February 1 through September 30.

BIO-8. A qualified biologist would conduct a pre-construction survey for active nests within 14 days before the start of construction and tree removal activities if they are expected to start during the nesting season—February 1 through September 30. An additional pre-construction survey would be conducted within 72 hours before the start of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, then a letter report would be submitted to the project proponent and the California Department of Fish and Wildlife for their records, and no additional measures would be recommended. If construction does not start within 72 hours or stops for more than 72 hours after the pre-construction survey, an additional pre-construction survey would be recommended.

If active nests are within the Biological Study Area, a qualified biologist would establish an appropriate buffer zone around the nests. The qualified biologist would mark the buffer zone with construction tape or pin flags and maintain the buffer zone until the end of the breeding season or until the young birds have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found onsite, a qualified biologist would monitor the nests weekly during construction to evaluate potential construction-related disturbances. If establishing the typical buffer zone is impractical, then the qualified biologist may reduce the buffer depending on the species. Daily monitoring would be recommended to ensure that the nests are not disturbed and that no forced fledging occurs. Daily monitoring would occur until the qualified biologist determines that the nests are no longer occupied. Once the qualified biologist determines that the nests are no longer active, a letter report would be submitted to the project proponent and the California Department of Fish and Wildlife for their records.

BIO-9. The Applicant would obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit, issued by the California Regional Water Quality Boards, and implement water quality Best Management Practices to prevent discharge of pollutants to surface waters during construction. These Best Management Practices will include standard measures for sediment-tracking reduction, such as vehicle washing and street sweeping, and revegetation of all areas disturbed by construction with native species.

Compensatory Mitigation Measure

BIO-10. To minimize permanent loss of waters of the U.S. resulting from project development, the Tribe may submit a compensatory mitigation plan to the U.S. Army Corps of Engineers and Regional Water Quality Control Board proposing in-kind replacement of impacted waters of the U.S. at a minimum 1 to 1 ratio.

Avoidance and Minimization Measures

BIO-11. After construction, affected areas would be revegetated with plant species native to the vicinity and approved by a Caltrans biologist. The plant

mix would avoid the use of any plant species listed in the California Invasive Plant Council's Invasive Plant Inventory with a high or moderate rating.

BIO-12. Implement Tree Protection Measures:

- Tree protection fencing, consisting of 4-foot tall, brightly colored, high-visibility plastic fencing, would be placed around the perimeter of the tree protection zone (dripline radius plus 1 foot) of all protected trees within 20 feet of the project footprint. The tree protection zone is the minimum distance for placing protective fencing. Tree protection fencing would be placed as far outside of the tree protection zone as possible. Signs would be placed along the fence, indicating this as a tree protection zone that would not be moved until construction is complete. Trees or tree clusters with canopies extending beyond 50 feet from project boundaries may be fenced only along the sides facing the project. In cases where proposed work infringes in the tree protection zone, fencing would be placed at the edge of the worksite.
- Whenever possible, a fence would be placed around multiple trees together in a single tree protection zone.
- Tree protection fencing would not be moved without prior authorization from an International Society of Arboriculture-certified arborist and Tuolumne County.
- No parking, portable toilets, dumping or storing of any construction materials, grading, excavating, trenching, or other infringement by workers or domesticated animals is allowed in tree protection zones.
- No signs, ropes, cables, or any other item would be attached to a protected tree unless recommended by an International Society of Arboriculture-certified arborist.
- Underground utilities would be avoided in the tree protection zone, but, if necessary, would be bored or drilled. If boring is impossible, all trenching would be done by hand under the supervision of an International Society of Arboriculture-certified arborist.
- No cut or fill within the dripline of existing native oaks would take place. If cut or fill within the dripline is unavoidable, an International Society of Arboriculture-certified arborist would monitor work to determine whether trees would be significantly impacted.
- Pruning living limbs or roots over 2 inches in diameter would be done under the supervision of an International Society of Arboriculture-certified arborist.
- All wood plant material smaller than 6 inches in diameter would be mulched onsite. Resulting mulch would be spread in a layer 4 to 6 inches deep in the tree protection zone of preserved trees. Mulch would not be placed touching the trunk of preserved trees.

- Appropriate fire prevention techniques would be used around all significant trees to be preserved. This includes cutting tall grass, removing flammable debris within the tree protection zone, and prohibiting the use of tools that may cause sparks, such as metal-bladed trimmers or mowers.

2.1.5 Cultural Resources

Affected Environment

The following discussion is based on the Historical Resources Compliance Report/Archaeological Survey Report (Cogstone 2020), which was approved on May 18, 2020. The Historical Resources Compliance Report/Archaeological Survey Report included the identification of a cultural Project Area Limit making up 5.89 acres and consisting of the maximum extent project-related activities (see Figure 2-2). The Project Area Limit extends along State Route 108/49 from post mile 12.0 to post mile 12.3 and includes the intersection of Mackey Ranch Road. The vertical Project Area Limit is expected to be a maximum depth of 8 to 10 feet below the existing ground surface for utility work. Other depths of ground disturbance include 3 feet for paving, 6 feet for drainage, and 5 feet for lighting. The preparation of the Historical Resources Compliance Report/Archaeological Survey Report included a Sacred Lands File search from the Native American Heritage Commission; consultation with the Tribe, Tuolumne Heritage Committee, and Tuolumne County Historical Society; a records search through the Central California Information Center; and a field survey.

Cogstone requested the Sacred Lands File search from the Native American Heritage Commission on October 9, 2018. The Native American Heritage Commission responded on October 18, 2018, that a search of the Sacred Lands File was positive for the presence of Native American cultural resources within the Project Area Limit and that the Tribe would be consulted regarding the presence of sacred sites within the Project Area Limit.

Tim Spillane of Cogstone reached out to the Tribe via Kyrsten Shields of HELIX Environmental Planning, Inc. on July 29, 2019. Bailey Hunter, Environmental and Natural Resources Manager with the Tribe, responded on August 2, 2019, with a confidential memorandum summarizing the results of a California Historical Resources Information System records search and survey overseen by Charlane Gross, a Registered Professional Archaeologist of Analytical Environmental Services.

The California Historical Resources Information System records search was completed by the Central California Information Center at California State University, Stanislaus, on October 23, 2018. (Central California Information Center 10873/O) The records search covered the entire Project Area Limit and a 1-mile radius.

Emily Barton, a staff archaeologist with Cogstone, completed an intensive-level pedestrian survey of the 5.89-acre Project Area Limit on July 26, 2019.

CEQA Significance Determinations for Cultural Resources

Would the project:

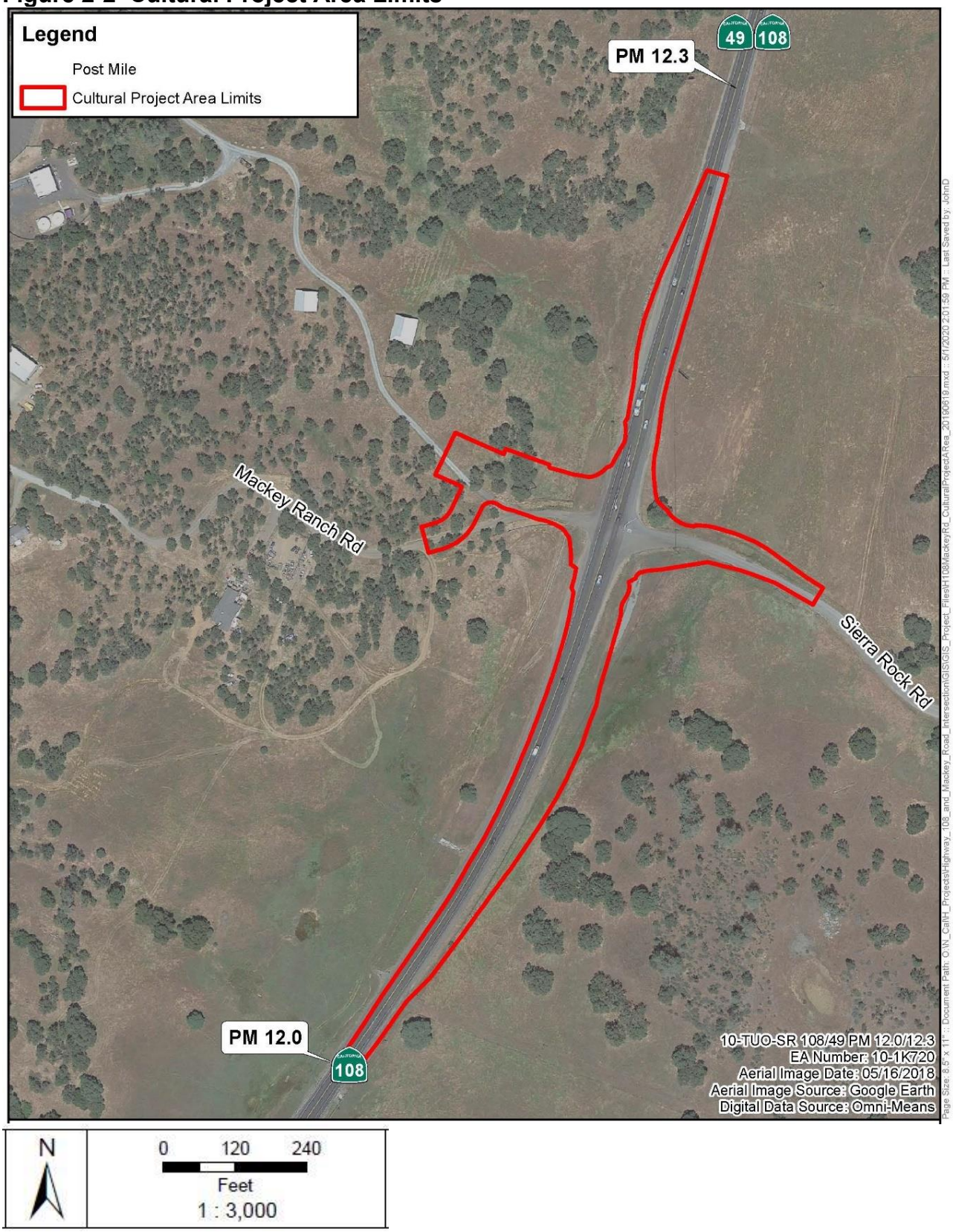
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

or

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact—The Historical Resources Compliance Report/Archaeological Survey Report found that portions of historical or archaeological sites within the Project Area Limit appear to meet the following criteria set forth in the California Public Resources Code 5024 Memorandum of Understanding Stipulation VIII.C.1 and Attachment 4 (State-owned Cultural Resources Exempt from Evaluation): Archaeological Resource Types and Features Exempt from Evaluation. The project would not result in a substantial adverse change in the significance of an archaeological resource per Section 15064.5. No impact would occur.

Figure 2-2 Cultural Project Area Limits



c) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact—Surveys and background research conducted during the preparation of the Historical Resources Compliance Report/Archaeological Survey Report (Cogstone 2020) did not find indications of human remains or cemeteries. However, there is a possibility that ground-disturbing activities during construction may accidentally uncover previously unknown buried human remains or cultural resources. Although it is highly unlikely that there would be an impact to cultural resources from project development, there is always the possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains or cultural resources. The project would not result in an impact with the implementation of standard measures CUL-1, CUL-2, and CUL-3.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measures

CUL-1. If cultural materials are discovered during project construction, all work would stop within 100 feet of the discovery, and the resident engineer would be notified immediately. If the cultural materials are Native American in origin, Caltrans would contact the appropriate Native American group regarding the discovery. The resident engineer, a Caltrans representative, an archaeologist meeting the Secretary of the Interior's Standards in archaeology, and an appropriate Native American group would assess the discovery to determine if it qualifies as a tribal cultural resource. The appropriate treatment of the discovery, including any applicable avoidance or mitigation strategies, would be determined in consultation with the Native American group. Construction activities would not start until the appropriate treatment has been determined and any applicable mitigation has been completed. Mitigation would follow the recommendations detailed in Public Resources Code Sections 21084.3(a) and 21084.3(b), and State CEQA Guidelines Section 15370.

CUL-2. Worker environmental training would include archaeological and tribal cultural resource awareness. The training would be developed in coordination with the Tribe and would be provided before the start of project construction activities for all personnel working within the project site. The training would identify the appropriate point of contact if a tribal cultural resource is discovered. The training would also include relevant information regarding tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating state laws and regulations. Additionally, the training would emphasize the requirement for confidentiality and culturally appropriate treatment of tribal cultural resources.

CUL-3: Implement Inadvertent Discovery Procedures for Accidental Discovery of Human Remains. Public Resources Code Section 5097.98 must be

followed in the event of an accidental discovery or recognition of any human remains. The following steps would be taken if there is an accidental discovery or recognition of human remains once project-related earthmoving activities begin.

- There would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the county coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required.
- If the coroner determines the remains to be Native American, the coroner would contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission would identify the person it believes to be the "Most Likely Descendant" of the deceased Native American.
- The Most Likely Descendant may recommend to the landowner or the person responsible for the excavation work, means of treating or disposing of the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Where the following conditions occur, the landowner or an authorized representative would rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the Most Likely Descendant or in the project area in a location not subject to further subsurface disturbance.

- The Native American Heritage Commission is unable to identify a Most Likely Descendant, or the Most Likely Descendant failed to make a recommendation within 48 hours after being notified by the commission;
- The Most Likely Descendant identified fails to make a recommendation; or
- The landowner or an authorized representative rejects the recommendation of the Most Likely Descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

2.1.6 Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact—Wasteful, inefficient, or unnecessary consumption of energy resources is not expected. The project would result in improved traffic

operations and less delay compared to the No-Build (No-Action) Alternative, likely resulting in more efficient gasoline consumption. Lighting would be made up of energy-efficient light-emitting diode lights, consistent with Caltrans standards. During operation, unnecessary consumption of energy would be avoided with the implementation of minimization measure EGY-2, use of energy-efficient light-emitting diode lighting.

During construction, unnecessary consumption of energy would be avoided with the implementation of standard measure EGY-1, implement Caltrans Standard Specifications Sections 14 and 14-9.02.

Correspondingly, project construction would comply with the California Air Resources Board's anti-idling law, which states that vehicles not engaged in work activities may not idle for more than five minutes. Also, vehicles may not idle auxiliary power systems for more than five minutes to power heaters, air conditioners, or any other equipment if the vehicle has a sleeper berth and is within 100 feet of a restricted area (e.g., homes and schools). No Impact would occur.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact—Renewable energy or energy efficiency policies are found in the Housing Element and Climate Change Element of the 2018 Tuolumne County General Plan. Tuolumne County's policies are geared toward green building design and green building components, energy-efficient new development, and weatherization upgrades in buildings; water-efficient landscaping is encouraged. The project is not a housing project and would not conflict with energy efficiency policies in the 2018 Tuolumne County General Plan. If landscaping is included in the final design, water-efficient choices would be implemented per minimization measure EGY-3, implementation of the statewide Model Water Efficient Landscape Ordinance, or local ordinances as applicable. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, no impact would occur.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measure

EGY-1. Implement Caltrans Standard Specifications Sections 14 and 14-9.02., which state:

- Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including those provided in Government Code Section 11017. (Public Contract Code Section 10231)
- Do not dispose of material by burning.

Avoidance and Minimization Measures

EGY-2. The final design would incorporate energy-efficient light-emitting diode roadway lighting.

EGY-3. If landscaping is included in the final design, water-efficient choices would be implemented per the statewide Model Water Efficiency Landscape Ordinance or local ordinances as applicable.

2.1.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

No Impact—While Tuolumne County does not contain Alquist-Priolo Earthquake Fault Zones, the Melones Fault Zone runs northwest-southeast through western Tuolumne County with faults mapped south of the intersection and at the Rawhide Flat West Fault to the north. (California Department of Conservation 2019) The project would be designed in accordance with the Caltrans Design Manual and associated geotechnical requirements. Site-specific geology and soil conditions would be accounted for in the final design and, in doing so, technically suitable materials and construction methods would be implemented to avoid damage from potential earthquakes, cracks, and other geology and soil-related issues. Accordingly, the project would not impact Alquist-Priolo Earthquake Fault Zones or known faults.

ii) Strong seismic ground shaking?

No Impact—While faults do exist in western Tuolumne County, none are at the project site; the project would be designed in accordance with the Caltrans Design Manual and associated geotechnical requirements. As a result, technically suitable materials and construction methods would be implemented, and the project would not result in or cause strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

No Impact—The project is not in a liquefaction zone as mapped in the Seismic Hazards: Liquefaction Zones map. (California Department of

Conservation 2018) The project would have no impact on seismic-related ground failure, including liquefaction.

iv) Landslides?

No Impact—The project is in an area with gradual slopes. According to the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (Tuolumne County 2018b, p. 60), the potential severity and probability of landslides is low in Tuolumne County. The project would be designed in accordance with the Caltrans Design Manual and associated geotechnical requirements, as described in question i) above; this would avoid damage from potential geology and soil-related issues. Therefore, the project is not expected to impact landslides.

b) Result in substantial soil erosion or the loss of topsoil?

No Impact—The project is at an existing intersection in a relatively level location. The project would include grading and earthwork during construction, but it would not considerably change the local topography such that substantial soil erosion or loss of topsoil would result. Soil erosion would be minimized through construction Best Management Practices as identified in standard measure AQ-1 (detailed in Chapter 1and Section 2.1.3 Air Quality). The project would not result in soil erosion or the loss of topsoil. No impact would occur.

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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

No Impact—The project would be designed in accordance with the Caltrans Design Manual and associated geotechnical requirements. The project would not impact soil stability.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact—The project is on the Loafercreek-Bonanza Complex, which has 3 percent to 15 percent slopes, and Loafercreek-Gopheridge Complex, which has 15 percent to 30 percent slopes. These soils have low linear extensibility ratings of 2.6 percent and 2.7 percent (Natural Resources Conservation Service 2019), which indicates that these are non-expansive soils. This area of California generally contains “little or no swelling clay.” (Olive et al., U.S. Geological Survey 1989) Therefore, no impact would occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact—The project would have no impact on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater because the project would not include septic tanks or alternative wastewater disposal systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact—The project would result in an excavation that is 10 feet deep. The Loafercreek-Bonanza complex soil unit, which has 3 percent to 15 percent slopes, is typically 6.5 feet deep. The geologic unit underlying the project site consists of "Plutonic rocks (Mesozoic)—ultramafic rocks, mostly serpentine. Minor peridotite, gabbro, and diabase; chiefly Mesozoic." (California Department of Conservation, California Geological Society, 2010) Paleontological resources are not found in Plutonic rocks; therefore, no impacts would occur.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact—The project would have a less than significant impact on generating greenhouse gas emissions, and would not conflict with plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases. As discussed in Section 2.1.3, Air Quality, the project is not considered a capacity-increasing project and would result in improved traffic operations and less delay, which is likely to result in more efficient gasoline consumption and less greenhouse gas emissions. Because the project would not increase roadway capacity, it would not increase greenhouse gas emissions. Implementing minimization measure GHG-1 would further minimize emissions by requiring equipment to be shut off when not in use and reducing idling to five minutes during construction. Related energy standard and minimization measures EGY-1, EGY-2, and EGY-3 would also minimize emissions by incorporating light-emitting diode

lighting, complying with air pollution control rules, and implementing drought-resistant landscaping.

Environmental Consequences

The project would not increase operational emissions. Temporary carbon dioxide emissions generated from construction equipment were estimated using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model (version 9.0.0). Total construction-generated carbon dioxide emissions were estimated to be 2,636 total tons (2,418 metric tons of carbon dioxide equivalents, consisting of carbon dioxide, methane, and nitrous oxide). The construction-generated greenhouse gas emissions for the project are 80.6 metric tons of carbon dioxide equivalents per year when annualized over an assumed 30-year period; this is summarized in Section 2.1.3, Air Quality.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measure

EGY-1: Implement Caltrans Standard Specifications Sections 14 and 14-9.02., which state:

- Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including those provided in Government Code Section 11017. (Public Contract Code Section 10231)
- Do not dispose of material by burning.

Avoidance and Minimization Measures

GHG-1. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes. (California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485)

EGY-2: The final design would incorporate energy-efficient light-emitting diode roadway lighting.

EGY-3: If landscaping is included in the final design, water-efficient choices would be implemented per the statewide Model Water Efficient Landscape Ordinance or local ordinances as applicable.

2.1.9 Hazards and Hazardous Materials

Affected Environment

The following discussion is based on the Initial Site Assessment (GHD 2020a), which was approved on March 10, 2020.

The Initial Site Assessment revealed no evidence of Recognized Environmental Conditions in connection with the project site. Based on the

review of available historical aerial photographs, city directories, and historical topographic maps, no operations or conditions that would typically result in a release of hazardous substances or petroleum products were identified. A reconnaissance of the site was completed on August 15, 2019, by Michael Beerends of GHD. The reconnaissance included a review of relevant site records available to GHD, visual observations of adjoining properties as viewed from the site and surrounding roadways, and interviews with individuals associated with the site. Interviews were conducted using a prepared questionnaire covering environmental and other site-related topics.

Potential filled areas were identified as a business environmental risk. According to site personnel, fill materials have been used during road construction. No information was available for review by GHD to determine the nature of the fill materials if any. No information was found to suggest that hazardous substances or petroleum products were present in the fill material. However, potential historical filling activities would be considered when evaluating business environmental risk and future land use of the site.

Upon preliminary and desk-based review, polychlorinated biphenyls containing ballasts may be utilized onsite in existing pole mounted street light fixtures. No information was available for GHD review to determine the nature of the polychlorinated biphenyls or fixture components, if any. Site conditions currently use light-emitting diode “CobraHead” fixtures mounted to a pole assembly. The fixture is likely energized by an electronic non-polychlorinated biphenyl containing ballast. Because no information was provided to GHD to determine historical light fixture use, polychlorinated biphenyls would be considered a potential business environmental risk at the site.

Aerially deposited lead from the use of leaded gasoline exists along roadways throughout California. It is likely that soils with elevated concentrations of lead as a result of aerially deposited lead are present within the project limits. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016, Aerially Deposited Lead Agreement between Caltrans and the California Department of Toxic Substances Control. This Aerially Deposited Lead Agreement allows such soils to be safely reused within the project limits as long as all requirements of the Aerially Deposited Lead Agreement are met.

Additionally, soil may be impacted by heavy metals, and potentially hazardous concentrations may be present along the project corridor based upon historical and current use. The California Administrative Manual 17 list of heavy metals includes: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.

Naturally occurring asbestos refers to fibrous minerals that are found in rocks or soil and can be released into the air by either human activities or

weathering processes. In California, ultramafic rock, including serpentine rock, is found in the Sierra Foothills, the Klamath Mountains, and the coastal ranges. Based on a review of an ultramafic rock survey conducted by the California Department of Conservation, the project site is within an area likely to contain natural occurrences of asbestos. (GHD 2020a) However, the presence of ultramafic rocks or naturally occurring asbestos in soils beneath the project site cannot be verified without a geological survey by a licensed geologist, including laboratory analysis.

Additionally, wood treated with chemical preservatives to mitigate decay for guardrail supports or signpost infrastructure along roadways is the standard practice for road wood infrastructure. Because current project designs may include guardrails and signage impacts during construction, the potential for treated wood waste is possible.

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact—The Tuolumne County Emergency Operations Plan (Tuolumne County 2012) states that because State Route 108 and State Route 49 are not interstate freeways, the likelihood of a significant quantity of hazardous materials being routinely transported through the county is low.

As a major east-west route in Tuolumne County, some transport of minor amounts of hazardous materials is likely. Because the project is non-capacity increasing, it would not change to an interstate freeway and is not expected to change the type or amount of materials transported on State Route 108/49. Therefore, the project would have a less than significant impact related to the transport, use, or disposal of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact—The Initial Site Assessment revealed no evidence of Recognized Environmental Conditions. Potential filled areas were identified as a business environmental risk. However, no information was found to suggest that hazardous substances or petroleum products were present in the fill material. There is a potential for elevated concentrations of aerially deposited lead, naturally occurring asbestos, and heavy metals, known as California Administrative Manual 17 metal, in soils within the project limits. There is also the potential to encounter wood treated with chemical preservatives. Soil identified as containing lead concentrations exceeding

stipulated thresholds must be managed under the July 1, 2016, Aerially Deposited Lead Agreement between Caltrans and the California Department of Toxic Substances Control. This agreement allows such soils to be safely reused within the project limits as long as all requirements are met. Minimization measure HAZ-1 describes the measures that would be implemented to properly handle potentially contaminated soil and treated wood waste. The project would have a less than significant impact related to creating hazards to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact—No schools are within a one-quarter mile of the intersection. The nearest school is Jamestown Elementary School, which is about 2.5 miles to the northeast. Therefore, no impact would occur.

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?

No Impact—No sites compiled pursuant to Government Code Section 65962.5 are in the project site or vicinity. Therefore, no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact—The project is not within an airport land use plan, and it is not within 2 miles of a public or public-use airport. The nearest public or public-use airport is Columbia Airport, which is about 7 miles north-northeast of the project site. Therefore, no impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact—State Route 108 and State Route 49 were identified in the Tuolumne County Emergency Operations Plan (Tuolumne County 2012) as major transportation routes. The plan identifies transportation incidents, particularly multi-casualty incidents, as a potential hazard. For hazardous material emergency response, the California Highway Patrol would conduct incident command system on a state highway (including State Route 108/49); the fire department would conduct incident command on local streets. During the permanent operation of the intersection, the project would improve traffic flow and would be beneficial to emergency services.

Project construction could cause delays in traffic flow. The project would result in a less than significant impact with the implementation of standard measure TRA-1, discussed under Section 2.1.17, Transportation.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

No Impact—Since the project would improve an existing traveled intersection, it would not expose people or structures to a new area potentially subject to wildland fires. Construction activities may cause a slight increase in the risk of a fire. However, the project would result in no impact.

Environmental Consequences

State Route 108 and State Route 49 are major transportation routes. Although a significant quantity of hazardous materials is likely not likely to be transported using these routes, minor amounts of transport of hazardous materials are likely. The roundabout would not change the interstate freeway. The project would not impact related transport, use, or disposal of hazardous materials. A transportation management plan would be in place during construction to manage the flow of traffic and minimize delays.

The project area has been identified to have elevated concentrations of aerially deposited lead, naturally occurring asbestos, and heavy metals, known as California Administrative Manual 17 metals, in soils. There is also the potential to encounter wood treated with chemical preservatives. Minimization measure HAZ-1 would be implemented to handle potentially contaminated soil and treated wood waste.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measure

See TRA-1 in Section 2.1.17, Transportation.

Avoidance and Minimization Measure

HAZ-1. Pre-characterization of soil and groundwater for potential aerially deposited lead impacts would occur before construction activities start. Pre-construction characterization of groundwater would occur if construction activities include dewatering, and if a laboratory analysis of pre-construction soil borings indicates an elevated total and soluble threshold limit concentration of 1,000 parts per million and 5 milligrams per liter, respectively. If lead impacted soil or groundwater is identified during pre-construction characterization, a Construction Soil Groundwater Monitoring Plan would be developed to identify protocols to be used. The plan would proactively manage potentially impacted soil and groundwater within the project alignment and reduce exposure to site workers.

In areas of ground disturbance below 3.5 feet, pre-construction soil borings would be performed to characterize petroleum plume and lead concentrations in soil and groundwater in anticipation of construction activities. Once the areas of ground disturbance and potential dewatering are confirmed, the preparation of a preliminary site investigation work plan would identify the location and number of borings necessary for pre-characterization and depth for sample collection would be prepared. Historic soil boring information (if available) would be reviewed to further define boring locations and mitigate duplicative borings.

Laboratory analytical results of soil samples collected from the borings would be used to make sure health and safety concerns are present for construction workers. The laboratory analytical results would also determine the potential for aerially deposited lead, California Administrative Manual 17 metals, naturally occurring asbestos impacted groundwater, and soil and/or groundwater handling and disposal options. Proposed soil borings and/or groundwater sample locations would be determined following the identification of the areas and depths of soil excavation and dewatering activities. If pre-construction total threshold limit concentration soil characterization sampling indicates that concentrations of lead are elevated above 1,000 parts per million, or if soluble threshold limit concentration analytical results are greater than 5 milligrams per liter, such data may indicate potential aerially deposited lead impacts to groundwater. If groundwater impacts are indicated by soil characterization, pre-construction characterization of potentially impacted groundwater would occur. To proactively manage potentially impacted soil and groundwater, which may be encountered during construction, a Construction Soil Groundwater Monitoring Plan would be prepared if pre-construction characterization indicates aerially deposited lead impacts to soil and/or groundwater.

If pre-construction characterization indicates aerially deposited lead/California Administrative Manual 17 metal impacts above soluble threshold limit concentration levels to soil and/or groundwater, site workers involved in excavation activities would be trained in hazardous waste operations and emergency response. (California Occupational Safety and Health Administration 1910.120) If naturally occurring asbestos is present, a Naturally Occurring Asbestos Management Plan would be prepared to manage, sample, and characterize naturally occurring asbestos soils. The Naturally Occurring Asbestos Management Plan would address onsite soil management, soil sampling, worker protection, and pre-construction characterization. If pre-construction characterization indicates naturally occurring asbestos in detectable levels, material would be sampled via the California Environmental Protection Agency Air Resources Board Test Method 435 (Test Method 435) in compliance with Naturally Occurring Asbestos Management Plan sampling plan. Each Test Method 435 must consist of three random bulk material samples of aggregate materials for preparation and analysis. Materials stored onsite should be representatively

sampled before disposal, as noted in the Method 435 California Air Resources Board Guidance document.

If the project construction impacts treated wood, materials would be handled as treated wood waste-regulated solid waste. Treated wood waste would be disposed of in a solid waste landfill certified by the State Water Resources Control Board, versus a hazardous waste landfill.

2.1.10 Hydrology and Water Quality

Affected Environment

An aquatic resource delineation was submitted to the U.S. Army Corps of Engineers on October 2, 2018, and later verified on October 18, 2018. On December 2, 2019, the U.S. Army Corps of Engineers verified the revised aquatic resources delineation that HELIX Environmental Planning, Inc. prepared in 2019. Based on the delineation, a total of about 0.48 acre of aquatic features are present within the Biological Study Area. Refer to Figure 2 (Aquatic Resources Delineation) in the Aquatic Resources Delineation Report prepared for the project (Helix 2019d). Aquatic features include depressional seasonal wetland (0.34 acre), riverine seasonal wetland (0.11 acre), ephemeral drainage (0.02 acre), and ditch (0.01 acre).

As shown in Figure 2-3, the project is outside of the 100-year flood zone.

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality?

Less Than Significant Impact—Stormwater discharged from the site would flow into Woods Creek. Woods Creek is listed on the Central Valley Regional Water Quality Control Board's 303(d) list for Indicator Bacteria.

During construction, the project would temporarily impact 0.01 acre of riverine seasonal wetland. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities.

Any discharge of pollutants to waters of the U.S. is unlawful unless the discharge is in compliance with the National Pollutant Discharge Elimination System Permit. The National Pollutant Discharge Elimination System Statewide General Construction Permit (General Permit) is applicable to the project. The General Permit would require the preparation and implementation of a Stormwater Pollution Prevention Plan that specifies erosion and sediment control and construction and post-construction Best Management Practices to reduce or eliminate construction-related and

operational impacts on receiving water quality. The Stormwater Pollution Prevention Plan identifies structural and nonstructural Best Management Practices to uphold water quality and waste discharge requirements. Caltrans' Best Management Practices would be implemented during construction, as described in standard measure AQ-1.

Figure 2-3 Federal Emergency Management Agency Flood Plain Location



Implementation, monitoring, and maintenance of Best Management Practices, as required per Caltrans standards, would ensure that project development would not result in substantial erosion or siltation violating water quality standards and discharge requirements. Proposed construction protocol, combined with existing enforceable provisions addressing erosion applicable to the project, would ensure that current water quality standards are maintained. Construction-related impacts related to project development are, therefore, considered less than significant.

The project would permanently impact 0.32 acre of depressional seasonal wetland and 0.02 acre of riverine seasonal wetland. Refer to Figure 4 in the Natural Environment Study prepared for the project (Helix 2019c, Amended 2020) for an exhibit showing the project impacts to biological communities. The project would have no impact on ephemeral drainage or ditches. The project would require a Section 404 and 401 Permit or be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act. Standard measures BIO-3, BIO-4, BIO-5 and BIO-9 as well as compensatory mitigation measure BIO-10, included in Section 2.1.4, Biological Resources, are required based on current regulatory requirements.

Compliance with the Caltrans Statewide Municipal Separate Storm Sewer System Permit (National Pollutant Discharge Elimination System Number CAS000003) would ensure that the areas surrounding the project site would not result in erosion or soil loss as a result of long-term operation. A Stormwater Data Report was prepared for the project to document the stormwater quality issues and design decisions made regarding project compliance with the Caltrans Statewide Municipal Separate Storm Sewer System National Pollutant Discharge Elimination System Permit. As documented in the Stormwater Data Report, because new impervious surfaces would be less than 1 acre per calculations following Caltrans' Stormwater Quality Handbook, no additional treated area is required, and the project is not required to implement treatment Best Management Practices. The project would implement the following Permanent Design Pollution Prevention Best Management Practices: slope/surface protection by maintaining the existing slopes to the maximum extent feasible, vegetating disturbed slopes upon completion, flared end sections at culvert outfalls, and velocity dissipaters, such as rock slope protection. In the pre-project condition, water flow from State Route 108/49 would collect in roadside ditches and flow southwest until it reaches Woods Creek. The project would not change the existing conveyance system.

Methods for compliance with the Caltrans Statewide Municipal Separate Storm Sewer System Permit have been analyzed and documented in the Stormwater Data Report. Permanent Design Pollution Prevention Best Management Practices identified in the Stormwater Data Report would result in a less than significant impact on water quality. Therefore, the potential

impacts associated with permanent impacts and operation are considered less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact—The project would add 0.2 acre of impervious surfaces to the roadway. Although this would be an increase, this is not large enough to substantially interfere with groundwater recharge. As a transportation facility, it would also not require groundwater supplies during regular operation. Therefore, the project would not 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; impacts would be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation onsite or offsite;

Less Than Significant Impact—The project design would include slope/surface protection by maintaining the existing slopes to the maximum extent feasible. The project design would also include vegetating disturbed slopes, including flared end sections at culvert outfalls and velocity dissipaters such as rock slope protection. These Permanent Design Pollution Prevention Best Management Practices would reduce potential erosion and siltation by increasing surface soil cohesion and dissipating velocity (thereby, decreasing energy and sediment transport capability) of stormwater flows.

During construction, erosion and siltation would be minimized through the implementation of standard methods as discussed in standard measure AQ-1 (detailed in Chapter 1 and Section 2.1.3 Air Quality). The following Caltrans Construction Site Best Management Practices were further specified in the Stormwater Data Report:

- Temporary Hydraulic Mulch (Bonded Fiber Matrix);
- Temporary Drain Inlet Protection;
- Temporary Fiber Roll;
- Temporary Silt Fence;
- Temporary High-Visibility Fence;
- Temporary Concrete Washout;
- Temporary Reinforced Silt Fence (Type I);

- Fiber Roll;
- Compost;
- Hydroseed;
- Rolled Erosion Control Product (Netting);
- Incorporate Materials;
- Hydromulch; and
- Street Sweeping

The Construction Site Best Management Practices noted above would reduce erosion and siltation by increasing surface soil cohesion or dissipating stormwater velocity. These standard Construction Site Best Management Practices would result in a less than significant impact.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;

No Impact—The project would result in a net increase of 0.2 acre of impervious surfaces. The project's drainage system would accommodate increases in the rate of surface runoff. The Stormwater Data Report stated that the project is expected to slightly increase the total runoff for the 100-year peak flow. Since the net increase in impervious surfaces is less than 1 acre, a rapid stability assessment and hydromodification are not required, per Caltrans' Hydromodification Requirements Guidance Manual. The project would not increase the rate or amount of surface runoff in a manner that would result in flooding, and no impact would occur.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

No Impact—The project would add 0.2 acre of impervious surfaces to the roadway. The project design, which would comply with Caltrans' Municipal Separate Storm Sewer System Permit, would accommodate increases in the rate of surface runoff. Permanent Design Pollution Prevention Best Management Practices and Construction Site Best Management Practices previously discussed would prevent polluted runoff. Therefore, no impact would occur.

iv) Impede or redirect flood flows?

No Impact—The proposed project is not in a flood hazard zone and does not have features that would redirect flood flows. Therefore, no impact would occur.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact—Pollutant releases are not expected because the facility is a roadway intersection. The project is not within the 100-year flood zone and is not near the coast. New Melones Lake is northwest of the site; however, it is over 1 mile away. Therefore, no impact would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact—The Tuolumne County Final Water Quality Plan (Environmental Science Associates 2007) identifies county pre-construction, construction, and post-construction activities as part of the water quality plan. Activities include preparing a Stormwater Pollution Prevention Plan and complying with the Tuolumne County Grading Ordinance (Tuolumne County 2019b) and the National Pollutant Discharge Elimination System General Permit for stormwater discharges associated with construction. Activities also include scheduling, evaluating site conditions, preserving existing vegetation, monitoring stormwater runoff and concentrated flows, managing stockpiles, controlling sediment and wind erosion, managing disturbed soil areas, and implementing Best Management Practices. These activities are consistent with Caltrans' standard design and construction practices, and no conflicts are expected.

Tuolumne County does not have a sustainable groundwater management plan. No impact would occur.

Environmental Consequences

The project would permanently impact 0.32 acre of depressional seasonal wetland and 0.02 acre of riverine seasonal wetland. The project would temporarily impact 0.01 acre of riverine seasonal wetland. The project would not impact ephemeral drainage or ditches. The project would require a Section 404 and 401 Permit or be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act. Standard measures BIO-3, BIO-4, BIO-5, and BIO 9 as well as compensatory mitigation measure BIO-10, included in Section 2.1.4, Biological Resources, are required based on current regulatory requirements.

The project would add 0.2 acre of impervious surface to the roadway, but it would not 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.

Moreover, the project would not result in substantial erosion. The project design would include slope/surface protection by maintaining the existing slopes to the maximum extent feasible. The project design would also include

vegetating disturbed slopes, including flared end sections at culvert outfalls and velocity dissipation devices such as rock slope protection. During construction, erosion and siltation would be minimized through the implementation of standard methods, as discussed in standard measure AQ-1.

Avoidance, Minimization, and/or Mitigation Measures

See measures AQ-1 in Section 2.1.3, Air Quality, and BIO-3, BIO-4, BIO-5, and BIO-9 and BIO-10 in Section 2.1.4, Biological Resources.

2.1.11 Land Use and Planning

Affected Environment

The following discussion is based on the Land Use Technical Memorandum (HELIX 2019b) prepared for the project, dated October 11, 2019, and amended on April 23, 2020.

State Route 108/49 is a two-lane (one lane in each direction) route serving eastbound and westbound traffic within Tuolumne County. Residents and visitors use Mackey Ranch Road to go to the Chicken Ranch Casino. The east leg of the intersection, Sierra Rock Road, connects to Sierra Rock Products Inc., a quarry.

The four parcels that surround the intersection are used for dryland grazing. Additionally, Assessor's Parcel Number 058-550-001, northwest of the intersection, is under Federal Trust Land and encompasses access roads, parking lots, and various facilities related to the Chicken Ranch Casino and Rancheria. The parcel southwest of the intersection (Assessor's Parcel Number 058-550-002) includes a home.

Regional Transportation Plan/Regional Transportation Improvement Program

Three projects identified in the 2016 Tuolumne County Regional Transportation Plan that partially overlap the project are summarized in Table 2.4.

Table 2.4 State Route 108/49 Projects as Described in the 2016 Regional Transportation Plan

Project Name	Priority	Agency	Description	Construction Year
State Route 108 Chicken Ranch Road to State Route 49 Climbing Acceleration, Deacceleration Lanes	Tier 1c	Caltrans	Build acceleration, deacceleration, and climbing lanes from Chicken Ranch Road to the State Route 49 exit Montezuma Junction. Implement Complete Streets improvements when reasonable.	TBD
State Route 108/49 New Signal Intersection Mackey Ranch Road and Sierra Rock Road	Tier 3—Unfunded Capital Improvement Projects	Tuolumne County	Build a new signal intersection at the intersection of Mackey Ranch Road, Sierra Rock Road and State Route 108/49.	TBD
State Route 108/120/49 Widen to a Four-lane Expressway from O'Byrnes Ferry Road to Chicken Ranch Road	Tier 3—Unfunded Capital Improvement Projects	Caltrans	Build a four-lane expressway along State Route 108/120/49 from O'Byrnes Ferry Road to Chicken Ranch Road.	TBD

Source: Tuolumne County Transportation Council 2016

The 2016 Tuolumne County Regional Transportation Plan states that Level of Service D—approaching unstable flow—is the minimum acceptable level of service for roadway segments and intersections on state highways.

Tuolumne County General Plan

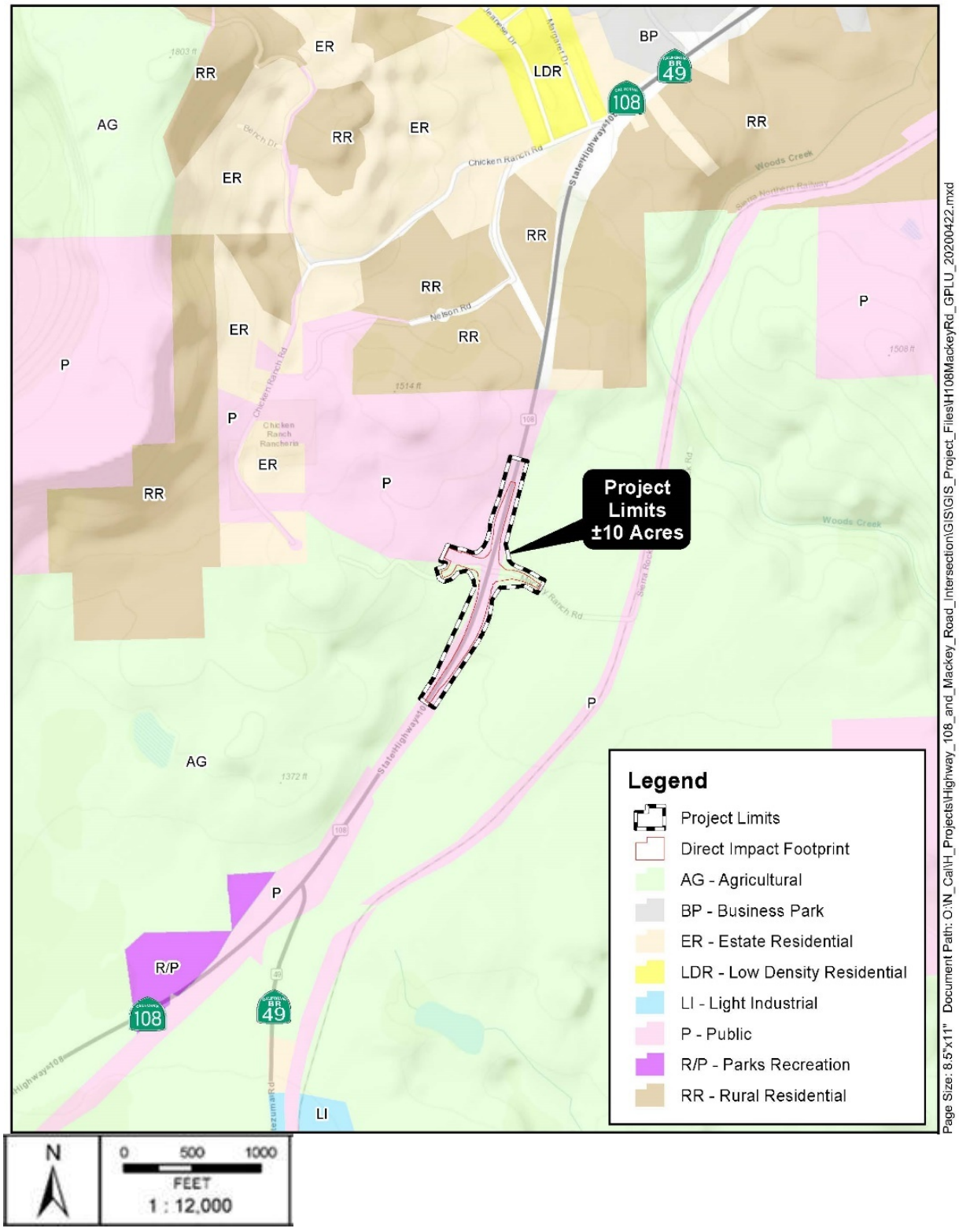
General Plan Land Use Designations. The parcel northwest of the intersection (Assessor's Parcel Number 058-550-001) is designated Public, and the parcels to the northeast, southeast, and southwest (Assessor's Parcel Numbers 058-550-018, 058-055-017, and 058-055-002, respectively) are designated Agricultural in the current 2018 Tuolumne County General Plan (Tuolumne County 2018a) (see Figure 2-4).

The Public designation "identifies lands that are owned by public agencies and recognizes that these lands are exempt from county land use regulations." (Tuolumne County 2019a) Assessor's Parcel Number 058-550-001 is Federal Trust Land and is designated Public.

The Agricultural designation "provides for the production of food, feed, fiber, nursery, apiary commodities, and other productive or potentially productive lands where commercial agricultural uses can exist without creating conflicts with other land uses or where potential conflicts can be minimized."

(Tuolumne County 2019a) Assessor's Parcel Numbers 058-550-018, 058-550-017, and 058-550-002 are designated Agricultural.

Figure 2-4 General Plan Land Use



County Designated Zoning District. The four parcels that surround the State Route 108/49 and Mackey Ranch Road intersection are zoned Exclusive Agricultural District, Thirty-Seven Acre Minimum District, and Open Space District (see Figure 2-5). Additionally, the parcel to the northeast, Assessor's Parcel Number 058-550-018, includes the Agricultural Preserve Combining District because this parcel is under a Williamson Act contract.

The purpose of the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District is to provide agricultural and resource production where commercial agricultural uses can exist without the encroachment of incompatible uses and provide the preservation and conservation of working landscapes and open space. Permitted uses in the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District include general farming and ranching, public safety facilities, accessory uses, structures pertinent to permitted uses, and public utility distribution facilities, among others. Permitted uses in Open Space Districts include roads, driveways, trails, bridges, and underground public utilities—permitted in conjunction with another entitlement for which an environmental review under CEQA has been adopted—among others. The purpose of the Agricultural Preserve Combining District is to implement the Williamson Act. When the Agricultural Preserve Combining District is combined with an Open Space District, permitted uses include those listed under Open Space, among others. When the Agricultural Preserve Combining District is combined with the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District, permitted uses include general ranching, accessory uses, and structures pertinent to permitted uses, among others.

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No impact—The project would not create a new barrier that would physically divide a community. The existing intersection would be changed to a roundabout, and access through State Route 108/49 would be maintained. No impacts would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact—The project would not conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, as described below.

Figure 2-5 Existing Zoning Map



State Plans and Programs

The project would improve the intersection at State Route 108/49 at Mackey Ranch Road and would not conflict with the Caltrans Highway Concept Plan. (Caltrans 2013) The proposed intersection improvements would also not prevent the future improvements identified in the concept plan. The project has independent utility and logical termini and would not require additional improvements to facilitate operation. The project limits are sufficient such that the improvements and striping would taper to match the existing roadway alignment, according to Caltrans standards.

Regional Transportation Plan/Regional Transportation Improvement Program

Proposed improvements have been presented to the Tuolumne County Transportation Council, and the project is not expected to conflict with the Regional Transportation Plan. Projects described in Table 2.4 are long-range and unfunded with no construction year identified. The “State Route 108/49 New Signal Intersection—Mackey Ranch Road and Sierra Rock Road” Tier 3 project appears to have been considered as an alternative for the project. The Traffic Operational Analysis Report (GHD 2019a) evaluated a roundabout alternative, traffic signal alternative, and an All-Way Stop-Control Alternative. The traffic signal alternative and All-Way Stop-Control Alternative were not carried forward because the roundabout alternative provided superior operations.

In the build year (2020), interim design year (2030), and ultimate design year (2040), the project is projected to provide overall Level of Service A— free flow—for all intersection movements. The project would operate acceptably and would be consistent with the goal identified in the 2016 Tuolumne County Regional Transportation Plan. The goal states that Level of Service D—approaching unstable flow—is the minimum acceptable level of service for roadway segments and intersections on state highways.

Local Plans and Programs

Tuolumne County General Plan

Designated Land Use. At Assessor’s Parcel Number 058-550-001, Mackey Ranch Road would shift slightly north into an area designated as Public and connect with an existing access road. Public districts are not subject to county land-use regulations, so the roadway shift would not conflict with designated land uses. At Assessor’s Parcel Number 058-550-002, Mackey Ranch Road would realign northward to intersect with Mackey Ranch Road. At Assessor’s Parcel Number 058-550-017, the proposed roadway would stay within an existing state right-of-way. At Assessor’s Parcel Number 058-550-018, the project footprint would extend slightly onto an area designated as Agricultural. Based on the permitted uses described in the following discussion of zoning districts, the roadway is a permitted use under existing zoning.

Designated Zoning District. Outside the project footprint, zoning districts would remain Exclusive Agricultural District, Thirty-Seven Acre Minimum District, Open Space District, and Agricultural Preserve Combining District.

As an accessory use to agricultural uses at Assessor's Parcel Number 058-550-018, the roadway is a permitted use within the Exclusive Agricultural District and the Thirty-Seven Acre Minimum District. The project would comply with CEQA and is expected to be allowable within the Open Space District. The project would be consistent with local zoning, as summarized in Table 2.5.

Table 2.5 Project Consistency with Zoning Districts

Affected Parcel	Zoning District	Project Impact	Permitted Use
058-550-001	Thirty-Seven Acre Minimum	Slight northward shift of Mackey Ranch Road.	Not applicable. The land use designation of this parcel is Public and not subject to Tuolumne County's land-use regulations.
058-550-001	Open Space	Slight northward shift of Mackey Ranch Road.	Not applicable. The land use designation of this parcel is Public and not subject to Tuolumne County's land-use regulations.
058-550-018	Thirty-Seven Acre Minimum	Partial intersection/roadway footprint.	Yes. It is expected that the roadway would be considered an accessory use to access existing dryland grazing lands under a Williamson Act contract. Accessory uses and structures pertinent to permitted uses are allowed.
058-550-018	Open Space	Partial intersection/roadway footprint.	Yes. Roads are permitted in conjunction with another entitlement for which an environmental review under CEQA has been adopted.
058-550-018	Open Space: Agricultural Preserve Combining District	Partial intersection/roadway footprint.	Yes. When the Agricultural Preserve Combining District is combined with an Open Space District, permitted uses under an Open Space District are allowed. The roadway is considered to be an accessory use that provides access to existing dryland grazing lands under a Williamson Act contract. Accessory uses and structures pertinent to permitted uses are allowed. No real property zoned Agricultural Preserve Combining District would be divided or reconfigured where any resulting parcel would be less than 160 acres for dryland grazing uses. The roadway would affect only 57 square feet of area.

Affected Parcel	Zoning District	Project Impact	Permitted Use
058-550-018	Thirty-Seven Acre Minimum: Agricultural Preserve Combining District	Partial intersection/roadway footprint.	When the Agricultural Preserve Combining District is combined with the Exclusive Agricultural District and Thirty-Seven Acre Minimum District, permitted uses include general ranching, accessory uses, and structures pertinent to permitted uses.
058-550-017	Thirty-Seven Acre Minimum	No impact	Not applicable
058-550-017	Open Space	No impact	Not applicable
058-550-002	Thirty-Seven Acre Minimum	Realignment of Mackey Ranch Road.	Yes. It is expected that the roadway would be considered an accessory use because it provides access to existing general ranching and agricultural activities. Accessory uses and structures pertinent to permitted uses are allowed.
058-550-002	Open Space	Realignment of Mackey Ranch Road.	Yes. Roads are permitted in conjunction with another entitlement for which an environmental review under CEQA has been adopted.

Environmental Consequences

The project would not conflict with allowable uses in the northeast parcel that are under a Williamson Act contract, as shown in Table 2.5. The roadway is considered an allowable use. The Williamson Act contract was changed to nonrenewal status starting on January 1, 2020, which starts a nine-year countdown to contract expiration. Therefore, the project would have a less than significant impact on lands under a Williamson Act contract, and would not conflict with any land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact—As discussed in answer "b" below, areas designated as Mineral Resource Zones are outside of the project site. The project would not require acquisition or changes to these resource areas. While not a designated Mineral Resource Zone, the nearby Sierra Rock Products Inc. does provide mineral resources. Sierra Rock Products Inc. is along Mackey Ranch Road and State Route 108/49. Project construction is not expected to impact operations with the implementation of traffic control and a Traffic Management Plan, as discussed in Section 2.1.17, Transportation.

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?

No Impact—Designated Mineral Resource Zone areas are outside of the project site. The nearest Mineral Resource Zone areas are at the Jamestown Mine, about 2 miles northeast, sand and gravel aggregate resources, about 0.5 mile to the southwest, and crushed stone aggregate resources, about 0.75 mile to the northwest. Intersection improvements would occur within an existing roadway. No impacts would occur.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.13 Noise

Affected Environment

Tuolumne County does not have a noise ordinance; however, projects may be conditioned to restrict construction days and hours and abide by noise standards. (Tuolumne County 2020a)

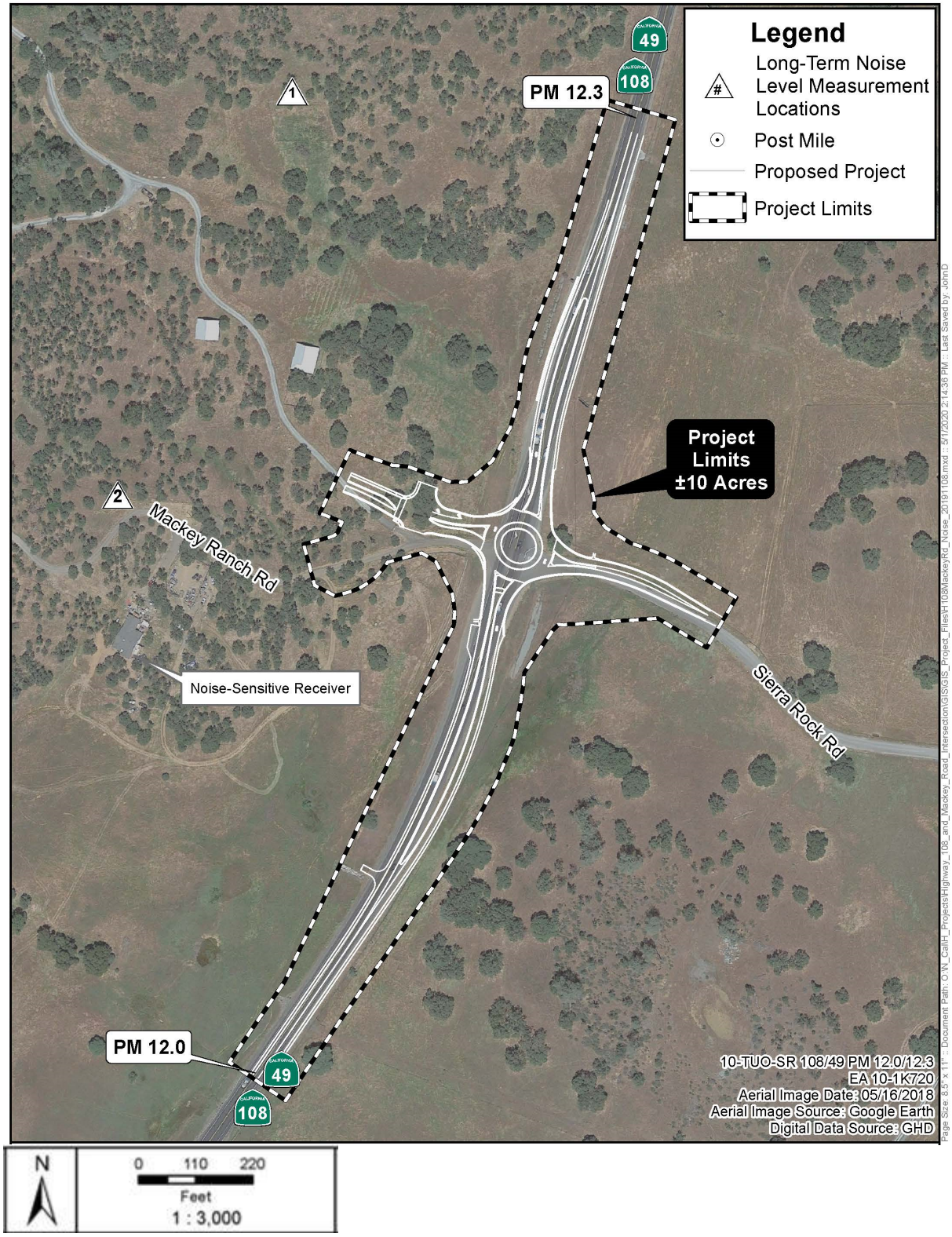
The following discussion is based on the Construction Noise Memorandum (Bollard Acoustical Consultants, Inc., 2018) dated November 30, 2018 and amended on April 23, 2020. Noise in the project vicinity is mainly from automobile traffic on State Route 108/49. To quantify existing ambient noise levels in the project vicinity and at the nearest home to the proposed construction area, a long-term (continuous) noise level survey was conducted at two measurement locations shown in Figure 2-6 on November 8, 2018. The noise level measurement results are summarized in Table 2.6.

Table 2.6 Summary of Long-Term Ambient Noise Measurement Results

Location	Day-Night Average Sound Level, Decibels	Daytime (7 a.m. to 10 p.m.) Equivalent Continuous Sound Level	Daytime (7 a.m. to 10 p.m.) Maximum Sound Level	Nighttime (10 p.m. to 7 a.m.) Light-Emitting Diode	Nighttime (10 p.m. to 7 a.m.) Maximum Sound Level
1	55	52 (47-56)	63 (60-74)	48 (44-53)	62 (59-64)
2	54	47 (40-52)	58 (49-69)	48 (42-53)	61 (56-69)

Source: Bollard Acoustical Consultants, Inc. (2019).

Figure 2-6 Noise Measurement Locations



Measurement location 1 is about 580 feet west of the construction limits. Measurement location 2 is a home about 400 feet away from the construction limits and is the nearest noise-sensitive receptor.

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

No Impact—The project site accommodates traffic noise that would occur with or without the project. A permanent increase in ambient noise levels would not result from the project. Permanent increases in ambient noise from transportation projects are expected from Type I projects. A Type I project, as defined in 23 Code of Federal Regulations 772, is a federal or federal-aid project for:

- The construction of a highway in a new location;
- The physical alteration of an existing highway where there is either:
    - Substantial horizontal alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or
    - Substantial vertical alteration. A project that removes shielding, thereby exposing the line of sight between the receptor and the traffic noise source; this is done by changing the vertical alignment of the highway or the topography between the highway traffic noise source and the receptor.
- The addition of a through-traffic lane. This includes the addition of a through-traffic lane that functions as a high-occupancy vehicle lane, high-occupancy toll lane, bus lane, or truck climbing lane;
- The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane;
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange;
- Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or
- The addition of a new or substantial alteration of a weigh station, rest stop, ride-book lot, or toll plaza.

Caltrans uses this same definition when evaluating State Highway System projects without federal funding. The project is not a Type I project because it

is not a new facility, and it takes place at an existing highway intersection. The project does not result in a substantial horizontal alteration because the roundabout does not halve the distance between the traffic noise source and the closest receptor. The project also does not change the vertical alignment and stays at the existing grade. Additionally, the project does not include through-traffic lanes, auxiliary lanes, interchange lanes or ramps, striping for traffic lanes or auxiliary lanes, or have a weigh station, rest stop, ride-book lot, or toll plaza. The operation of the project would have no impact on noise, and no mitigation would be required. Correspondingly, a permanent increase in ambient noise levels would not occur; only temporary construction impacts could occur.

Construction Noise

Existing noise levels were characterized at measurement location 1 and measurement location 2. As shown in Table 2.7, noise levels during construction are expected to be rated 68 in terms of the equivalent continuous sound level at the nearest noise-sensitive receptor.

Table 2.7 Estimated Noise Levels During Construction

Construction Equipment	Equivalent Continuous Sound Level at Nearest Noise-Sensitive Receptor
Excavator	59.1
Compactor (ground)	58.6
Scraper	62.0
Grader	63.4
Paver	56.6
Concrete Mixer Truck	57.2
Total	68.0

Source: Bollard Acoustical Consultants, Inc. (2019)

Correspondingly, construction noise is not expected to exceed 86 decibels, which is Caltrans' specification for nighttime operations and maximum construction noise levels. Construction noise levels would be similar to measured existing ambient conditions. Although project construction activities would result in short-term periods of elevated ambient noise levels in the immediate project vicinity, construction activities are expected to be primarily (or completely) limited to daytime hours. Section 14-8.02, Noise Control, of Caltrans' Standard Specifications (2018), as described in minimization measure NOI-1, would minimize and avoid impacts.

Even though Tuolumne County does not have a noise ordinance, projects may be conditioned to restrict construction days and hours and abide by noise standards. The project would implement construction noise restrictions if conditioned by Tuolumne County.

Based on the analysis above, and with the implementation of minimization measure NOI-1, project construction would not result in an impact on noise.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact—Groundborne vibration or noise would be localized to construction equipment used for pavement breaking. Homes or persons outside of the project roads would not be exposed to excessive groundborne vibration or groundborne noise levels. Therefore, the impact would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?

No Impact—The project is not within the vicinity of a private airstrip. The nearest private airstrip is Kistler Ranch Airport, about 7 miles southwest of the project site. The project is not within an airport land use plan, and it is not within 2 miles of a public or public-use airport. The nearest public or public-use airport is Columbia Airport, which is about 7 miles north-northeast of the project site. No impacts would occur.

Environmental Consequences

Construction has the potential to produce groundborne vibration or noise during pavement breaking. Groundborne vibration or noise would not impact homes or persons outside of the project area because the vibration or noise would be localized to construction equipment. Estimated construction noise levels are shown in Table 2.7.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and Minimization Measure

NOI-1. Implement Section 14-8.02, Noise Control, of Caltrans' Standard Specifications (2018). The specification states: "Do not exceed 86 decibels, A-weighted at 50 feet from the job site activities from 9 p.m. to 6 a.m."

2.1.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned 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)?

No Impact—The project does not include any residential or commercial development, or employment-generating land uses. The project would not extend roads to undeveloped areas; it would have no impact on unplanned population growth.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact—No houses are present in the project limits. The project would have no impact on the displacement of people or housing.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.15 Public Services

CEQA Significance Determinations for Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

or

Police protection?

No Impact—The project would not involve residential development or result in an increase in population. There would be no need for additional fire protection or police protection facilities; therefore, the project would have no impact on fire protection or police protection.

Schools?

or

Parks?

No Impact—The project would not involve residential development, result in an increase in population, or require the need for educational or park facilities. Therefore, the project would have no impact on schools or parks.

Other public facilities?

No Impact—The project would not involve residential development or result in an increase in population. The project would have no impact on other public facilities, such as hospitals or libraries.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.16 Recreation

CEQA Significance Determinations for Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact—The project would replace a stop-controlled intersection with a roundabout. No new travel lanes would be built; therefore, the project would not cause an increase in the use of parks or recreational facilities.

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?

No Impact—The project would not involve the construction, expansion, or use of recreational facilities. The project would replace the existing State Route 108/49 and Mackey Ranch Road intersection with a modern, yield-controlled, four-legged, single-lane roundabout. Therefore, no impacts would result from project development.

Avoidance, Minimization, and/or Mitigation Measures

None proposed.

2.1.17 Transportation

Affected Environment

The discussion below is based on the Final Traffic Operational Analysis Report (GHD 2019a), which was approved on September 6, 2019.

The existing intersection at State Route 108/49 and Chicken Ranch Road exhibits an acceptable intersection level of service and delay during the a.m. and p.m. peak periods of the Existing Year (2017). The existing intersection provides acceptable 95th-percentile queues for all movements for a.m. and p.m. peak periods. However, the intersection's eastbound left-turn movement operates at an unacceptable Level of Service E—unstable flow, operating at capacity—during the p.m. peak period, with a 36-second delay. Based on projected traffic volumes, the No-Build (No-Action) Alternative for the State Route 108/49 and Chicken Ranch Road intersection would operate at an

overall Level of Service B—reasonably free flow—or better in the build year (2020), the interim year (2030), and ultimate design year (2040).

The existing intersection at State Route 108/49 and Mackey Ranch Road provides an acceptable intersection level of service and delay during the a.m. and p.m. peak periods of the Existing Year 2017. The existing intersection provides acceptable 95th-percentile queues for all movements for a.m. and p.m. peak periods. Based on projected traffic volumes, the No-Build (No-Action) Alternative for the State Route 108/49 and Mackey Ranch Road intersection would operate at an overall Level of Service B or better in the build year 2020, the interim year (2030), and ultimate design year (2040).

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

No Impact—As discussed in the 2018 Tuolumne County General Plan Circulation Element (2018a), the county considers Level of Service D the threshold level of service on Caltrans' facilities. Under the No-Build (No-Action) Alternative scenario, overall intersection operations would decline to Level of Service B during the 2030 p.m. peak period for the State Route 108/49 and Chicken Ranch Road intersection. Eastbound turn movements would decline to Level of Service F—forced or breakdown flow—(see Table 2.8 through Table 2.21).

In Table 2.8 through 2.21, the lowest level of service and the highest delay of all turning movements were used to generate data for Level of Service (A.M./P.M.) and Delay (A.M./P.M.).

Table 2.8 Existing Year 2017 Peak Hour (A.M. Peak/P.M. Peak) State Route 108/49 and Chicken Ranch Road Intersection Operations (No-Build (No-Action) Alternative)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/A	2.1/4.5
Eastbound left	C/E	15.8/36.1
Eastbound right	A/C	7.8/23.9
Northbound left	A/A	1.9/4.9
Northbound through	A/A	1.1/1.1
Southbound through	A/A	1.6/2.6
Southbound right	A/A	0.4/0.7

Source: GHD 2019a

Table 2.9 Existing Year 2017 Peak Hour (A.M. Peak/P.M. Peak) State Route 108/49 and Mackey Ranch Road Intersection Operations (No-Build (No-Action) Alternative)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	A/C	1.5/1.9
Eastbound left/through/right	B/C	13.3/15.9
Westbound left/through/right	A/A	5.7/6.8
Northbound left/through/right	A/A	2.1/0.8
Southbound left/through/right	A/A	2.3/2.9

Source: GHD 2019a

Table 2.10 Year 2020 Peak Hour (A.M. Peak/P.M. Peak)
State Route 108/49 and Chicken Ranch Road Intersection Operations
(No-Build (No-Action) Alternative)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/A	2.2/5.0
Eastbound left	C/E	17.2/41.3
Eastbound right	A/D	8.1/28.5
Northbound left	A/A	2.0/5.3
Northbound through	A/A	1.1/1.2
Southbound through	A/A	1.5/2.7
Southbound right	A/A	0.4/0.7

Source: GHD 2019a

Table 2.11 Year 2020 Peak Hour (A.M. Peak/P.M. Peak)
State Route 108/49 and Mackey Ranch Road Intersection Operations
(No-Build (No-Action) Alternative)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	B/A	1.5/1.9
Eastbound left/through/right	A/B	9.7/15.0
Westbound left/through/right	B/B	14.7/10.4
Northbound left/through/right	A/A	1.1/0.7
Southbound left/through/right	A/A	2.3/3.0

Source: GHD 2019a

Table 2.12 Year 2020 Peak Hour (A.M. Peak/P.M. Peak)
State Route 108/49 and Chicken Ranch Road Intersection Operations
(Proposed Project)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/A	1.0/1.4
Eastbound left	B/D	13.8/26.8
Eastbound right	A/A	4.1/9.2
Northbound left	Not Applicable	Not Applicable
Northbound through	A/A	0.7/0.7
Southbound through	A/A	0.9/1.2
Southbound right	A/A	0.2/0.3

Source: GHD 2019a

Table 2.13 Year 2020 Peak Hour (A.M. Peak/P.M. Peak)
State Route 108/49 and Mackey Ranch Road Intersection Operations
(Proposed Project)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	A/A	7.4/7.6
Eastbound left/through/right	A/A	8.0/8.8
Westbound left/through/right	A/A	8.4/9.5
Northbound left/through/right	A/A	7.1/7.1
Southbound left/through/right	A/A	7.6/7.8

Source: GHD 2019a

**Table 2.14 Interim Year 2030 (A.M. Peak/P.M. Peak)
State Route 108/49 and Chicken Ranch Road Intersection Operations
(No-Build (No-Action) Alternative)**

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/B	2.5/10.9
Eastbound left	C/F	20.2/97.7
Eastbound right	B/F	10.1/87.9
Northbound left	A/A	2.8/6.1
Northbound through	A/A	1.2/1.3
Southbound through	A/A	1.7/3.1
Southbound right	A/A	0.4/0.8

Source: GHD 2019a

**Table 2.15 Interim Year 2030 (A.M. Peak/P.M. Peak)
State Route 108/49 and Mackey Ranch Road Intersection Operations
(No-Build (No-Action) Alternative**

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	A/A	1.6/2.1
Eastbound left/through/right	C/D	18.8/27.3
Westbound left/through/right	B/C	10.2/17.6
Northbound left/through/right	A/A	0.9/0.8
Southbound left/through/right	A/A	2.4/3.1

Source: GHD 2019a

Table 2.16 Interim Year 2030 (A.M. Peak/P.M. Peak)
State Route 108/49 and Chicken Ranch Road Intersection Operations
(Proposed Project)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/A	1.2/1.7
Eastbound left	C/D	18.9/31.3
Eastbound right	A/B	6.3/13.2
Northbound left	Not Applicable/A	Not Applicable/3.6
Northbound through	A/A	0.8/0.8
Southbound through	A/A	1.0/1.4
Southbound right	A/A	0.2/0.3

Source: GHD 2019a

Table 2.17 Interim Year 2030 (A.M. Peak/P.M. Peak)
State Route 108/49 and Mackey Ranch Road Intersection Operations
(Proposed Project)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	A/A	7.5/7.8
Eastbound left/through/right	A/A	8.9/9.9
Westbound left/through/right	A/A	8.9/10.4
Northbound left/through/right	A/A	7.1/7.2
Southbound left/through/right	A/A	7.7/7.9

Source: GHD 2019a

Table 2.18 Ultimate Design Year 2040 (A.M. Peak/P.M. Peak) State Route 108/49 and Chicken Ranch Road Intersection Operations (No-Build (No-Action) Alternative)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/B	2.8/12.8
Eastbound left	C/F	23.3/122.8
Eastbound right	B/F	11.3/97.2
Northbound left	A/A	3.0/6.8
Northbound through	A/A	1.3/1.4
Southbound through	A/A	1.9/3.3
Southbound right	A/A	0.5/1.0

Source: GHD 2019a

Table 2.19 Ultimate Design Year 2040 (A.M. Peak/P.M. Peak) State Route 108/49 and Mackey Ranch Road Intersection Operations (No-Build (No-Action) Alternative)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	A/A	1.7/2.1
Eastbound left/through/right	C/D	16.7/27.2
Westbound left/through/right	B/D	14.7/25.8
Northbound left/through/right	A/A	1.0/0.8
Southbound left/through/right	A/A	2.5/3.3

Source: GHD 2019a

Table 2.20 Ultimate Design Year 2040 (A.M. Peak/P.M. Peak) State Route 108/49 and Chicken Ranch Road Intersection Operations (Proposed Project)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Chicken Ranch Road (Overall)	A/A	1.2/1.9
Eastbound left	C/E	19.1/42.4
Eastbound right	A/C	8.3/21.7
Northbound left	A/Not Applicable	0.4/Not Applicable
Northbound through	A/A	0.8/0.8
Southbound through	A/A	1.0/1.4
Southbound right	A/A	0.3/0.3

Source: GHD 2019a

Table 2.21 Ultimate Design Year 2040 (A.M. Peak/P.M. Peak) State Route 108/49 and Mackey Ranch Road Intersection Operations (Proposed Project)

Intersection/Approach	Level of Service (A.M./P.M.)	Delay in Seconds (A.M./P.M.)
State Route 108/49 and Mackey Ranch Road/Sierra Rock Road (Overall)	A/A	7.6/7.9
Eastbound left/through/right	A/A	9.6/10.7
Westbound left/through/right	A/A	9.3/11.0
Northbound left/through/right	A/A	7.1/7.3
Southbound left/through/right	A/A	7.8/8.1

Source: GHD 2019a

With the project, the State Route 108/49 and Chicken Ranch Road intersection and the State Route 108/49 and Mackey Ranch Road intersection would operate at an overall Level of Service A—free flow—during a.m. and p.m. peak periods in the build year (2020), the interim year (2030), and design year (2040). Additionally, the eastbound left-turn movement at the State Route 108/49 and Chicken Ranch Road intersection would operate at a Level of Service D during the 2030 p.m. peak period. Correspondingly, the project would not conflict with Tuolumne County's level of service policy described in the 2018 Tuolumne County General Plan Circulation Element.

There would be no conflict with proposed bicycle or pedestrian facilities. The 2018 Tuolumne County General Plan identifies several planned bicycle and pedestrian projects, but the nearest one would be bicycle facilities within State Route 108/49 within the Jamestown Community Plan. As discussed in Chapter 1, the project would convey pedestrian and bicycle traffic. Proposed 5-foot shoulders would convey bicycle traffic through the intersection, and sharrows would convey this action to cyclists and drivers. No impacts would occur.

b) Conflict with or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b)?

No Impact—The project would not conflict with State CEQA Guidelines Section 15064.3, subdivision (b). Section 15064.3 states that vehicle miles traveled is the most appropriate measure of transportation impacts, and under subdivision (b), transportation projects "that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant impact." The California Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA (2018) lists "the installation of roundabouts or traffic circles" as a project type that "would not likely lead to a substantial or measurable increase in vehicle travel, generally should not require an induced travel analysis…" Accordingly, further analysis is not needed, and the project would not conflict with or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b). No impacts would occur.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact—While there would be raised concrete surfaces (medians) to guide traffic, standard signage would be included, and the roundabout would be lighted to increase the visibility of the intersection. The project would be designed in accordance with the Caltrans Highway Design Manual and applicable standards. Hazards due to a geometric design feature would be less than significant.

d) Result in inadequate emergency access?

No Impact—The project would not change emergency access. In the short term, construction could cause potential traffic delays. However, with the implementation of standard measure TRA-1, the project would not impact emergency access.

Environmental Consequences

The geometric design would raise concrete surfaces such as the medians to guide traffic. This design feature would include standard signage, and the

roundabout would be lighted to increase the visibility of the intersection. The project would be designed in accordance with the Caltrans Highway Design Manual and applicable standards and would minimize geometric design hazards.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measure

TRA-1. A Traffic Management Plan would be prepared and implemented during construction to facilitate through-traffic requirements and minimize disruptions to traffic and emergency services. Emergency service providers would be notified as early as possible to plan for lane closures and other delays related to construction activities. Law enforcement personnel would be notified in advance of any road closures.

2.1.18 Tribal Cultural Resources

Regulatory Setting

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

CEQA requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as “unique” archaeological resources. California Public Resources Code Section 5024.1 established the California Register of Historical Resources and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the California Register of Historical Resources and, therefore, a historical resource. Historical resources are defined in California Public Resources Code Section 5020.1(j). In 2014, Assembly Bill 52 added the term “tribal cultural resources” to CEQA, and Assembly Bill 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in California Public Resources Code Section 21074(a), a tribal cultural resource is a California Register of Historical Resources or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in California Public Resources Code Section 21083.2.

California Public Resources Code Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the National

Register of Historic Places listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register of Historic Places or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with California Public Resources Code Section 5024 are outlined in a Memorandum of Understanding between the Department and the State Historic Preservation Officer, effective January 1, 2015. For most federal-aid projects on the State Highway System, compliance with the Section 106 Programmatic Agreement would satisfy the requirements of California Public Resources Code Section 5024.

Affected Environment

The discussion below is based on the Historical Resources Compliance Report/Archaeological Survey Report (Cogstone 2020), which was approved on May 18, 2020. The Historical Resources Compliance Report/Archaeological Survey Report identifies the Project Area Limit. The Project Area Limit makes up 5.89 acres and consists of the maximum extent of project-related activities. The Project Area Limit extends along State Route 108/49 from post mile 12.0 to post mile 12.3 and includes the intersection of Mackey Ranch Road. The maximum vertical Project Area Limit is expected to be 8 to 10 feet below the existing ground surface for utility work. Other depths of ground disturbance include 3 feet for paving, 6 feet for drainage, and 5 feet for lighting.

The Central California Information Center, which is located at California State University, Stanislaus, completed a California Historical Resources Information System records search on October 23, 2018. (Central California Information Center 10873/O) The records search covered the entire Project Area Limit and a 1-mile radius.

Cogstone requested a Sacred Lands File search from the Native American Heritage Commission on October 9, 2018. The Native American Heritage Commission responded on October 18, 2018, that a search of the Sacred Lands File was positive for the presence of Native American cultural resources within the Project Area Limit and that the Tribe should be consulted regarding sacred sites within the Project Area Limit.

Tim Spillane of Cogstone reached out to the Tribe via Kyrsten Shields of HELIX Environmental Planning, Inc. on July 29, 2019. Tribal Environmental Manager Bailey Hunter responded on August 2, 2019, with a confidential memorandum summarizing the results of a California Historical Resources Information System records search and survey overseen by Charlane Gross, a Registered Professional Archaeologist of Analytical Environmental Services.

Emily Barton, a staff archaeologist with Cogstone, completed an intensive-level pedestrian survey of the 5.89-acre Project Area Limit on July 26, 2019.

CEQA Significance Determinations for 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:

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

No Impact—No Native American groups have requested notification of projects in the project area per Assembly Bill 52 and Public Resources Code Section 5020.1(k). During the preparation of the Historical Resources Compliance Report/Archaeological Survey Report, the Tribe was consulted regarding sacred sites and tribal cultural resources, but none were identified. While no locations of known tribal cultural resources have been identified, standard measures would be implemented for accidental discoveries of archaeological resources or unknown tribal cultural resources. Standard measure CUL-1 outlines the steps that would be taken to stop work if an accidental discovery is made. Standard measure CUL-2 discusses the inclusion of archaeological and tribal cultural resource awareness during construction worker environmental training. With the implementation of standard measures CUL-1 and CUL-2, the project would result in no impact.

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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact—As discussed in answer, “a” above, project construction could potentially result in an accidental discovery of an archaeological or tribal cultural resource, which would result in potentially significant impacts. Standard measure CUL-1 outlines the steps that would be taken to stop work if an accidental discovery is made. Standard measure CUL-2 discusses the inclusion of archaeological and tribal cultural resource awareness during construction worker environmental training. With the implementation of standard measures CUL-1 and CUL-2, the project would result in no impact.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measures

See CUL-1 and CUL-2 in Section 2.1.5, Cultural Resources.

2.1.19 Utilities and Service Systems

Affected Environment

Utilities in the project limits include Pacific Gas and Electric Company overhead electrical lines across State Route 108/49, American Telephone and Telegraph Corporation overhead communication lines along the east edge of State Route 108/49, and Central Valley Independent Network underground fiber-optic lines along the west edge of State Route 108/49.

The Tuolumne County Sheriff's Office provides police protection services within the project vicinity. The nearest sheriff's office is at 19130 Rawhide Road, Jamestown, California 95327, about 2.5 miles north of the project site.

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact—The project is expected to underground existing American Telephone and Telegraph Corporation communication lines and remove a portion of Pacific Gas and Electric Company's overhead electrical lines within the immediate vicinity of the roundabout. Electrical lines would be rerouted from tribal land to maintain existing service. As described in minimization measure UTI-1, standard coordination with utility providers would take place before construction starts to prevent service interruptions. The project would have a less than significant impact on utilities and service systems.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact—Project development would not result in the need for new or expanded water supplies. The project would have no impact on sufficient water supplies.

c) 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?

No Impact—The project would not increase the population in the project vicinity that would result in the need for new or expanded water or wastewater facilities or the need for the expansion of existing facilities. The project would have no impact on wastewater treatment.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

or

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact—The project would generate solid waste during construction; however, the long-term generation of solid waste would not occur because the facility is a roadway. Solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure would not result. Therefore, the project would have no impact.

Environmental Consequences

Proposed project work would include utility relocation. Pacific Gas and Electric Company's overhead electrical lines within the immediate vicinity of the roundabout would be relocated and rerouted from tribal land to maintain existing services. Coordination with utility providers would minimize interruptions to service during relocation.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and Minimization Measure

UTI-1 Before construction starts, standard coordination with utility providers would take place to prevent service interruptions.

2.1.20 Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact—The project is in a state responsibility area classified as having a high fire hazard. (California Department of Forestry and Fire Protection 2019) Since State Route 108 in Tuolumne County is a key

route for those driving to and from the Sierra Nevada Mountains to the Central Valley, there is a potential that project construction could impair emergency activities during a wildfire. However, implementing standard measure TRA-1 would include notifying emergency agencies of project construction and preparing a traffic management plan that would facilitate through-traffic requirements and minimize disruptions to traffic and emergency services. Therefore, the project would have a less than significant impact on emergency services.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact—Operationally, the project would not exacerbate wildfire risks. The project is at an existing intersection and would not include new development in a previously unoccupied area. The intersection accommodates projected traffic and is not expected to cause unplanned growth.

During construction, there is a potential for higher fire risk due to the use of heavy construction equipment onsite and near grasslands. However, with the implementation of standard measures WDF-1 and WDF-2, there would be no impact.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact—The project would reconfigure an existing intersection; installing associated infrastructure would not be required. Therefore, no impacts would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact—The project footprint is within an existing paved roadway. Stormwater runoff volumes and rates are not expected to be substantially different than existing volumes and rates. The final design of stormwater drainage would be consistent with Caltrans' standards. Post-fire slope instability is not expected because exposed slopes would be revegetated/hydroseeded in accordance with Caltrans' Standard Specifications. Therefore, the project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. No impacts would occur.

Environmental Consequences

A review of the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone maps for the project area indicates that the project is in a high fire hazard severity zone. The project would improve the existing project location and would not increase the risk of wildfires with the implementation of Construction Site Best Management Practices. Because State Route 108 is a heavily traveled and essential route to and from the Sierra Nevada Mountains to the Central Valley, there is a potential that project construction could impair emergency activities during a wildfire. However, coordination with emergency responses would minimize any impacts. Standard measure TRA-1 would be implemented.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measures

WDF-1. Require Spark-Generating Construction Equipment be Equipped with Manufacturers' Recommended Spark Arresters: Caltrans would require contractors to fit any construction equipment that includes a spark arrester with an arrester in good working order. Subject equipment would include, but would not be limited to, heavy equipment and chainsaws. Implementation of this measure would minimize a source of construction-related fires.

WDF-2. If dry vegetation or other fire fuels exist on or near staging areas, welding areas, or any other area on which equipment would be operated, the contractors would clear the immediate area of fire fuel. To maintain a firebreak and minimize the availability of fire fuels, Caltrans would require contractors to clear areas subject to construction activities of combustible natural materials to the extent feasible.

2.1.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially 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?

Less Than Significant Impact—Section 2.1.4, Biological Resources, describes several special-status plants and animals that have the potential to occur within the Biological Study Area. Based on the implementation of standard measures BIO-1 through BIO-9 as well as compensatory mitigation measure BIO-10 and minimization/avoidance measures BIO-11 and BIO-12, the potential impact on biological resources would be less than significant.

Potential cultural resources within the Project Area Limit were determined exempt from further review, as detailed in Section 2.1.5, Cultural Resources. No cultural resources were found eligible for the California Register of Historical Resources, and no historical resources under CEQA are within the Project Area Limit. Therefore, project development would not impact historical resources.

With the implementation of standard measure CUL-1, steps would be taken to stop work and coordinate with the Tribe if an accidental discovery is made. Standard measure CUL-2 requires the inclusion of archaeological and tribal cultural resource awareness during construction worker environmental training.

With the implementation of standard measures BIO-1 through BIO-9, compensatory mitigation measure BIO-10, and minimization/avoidance measures BIO-11 and BIO-12 as well as standard measures CUL-1 through CUL-3, the project's potential to substantially 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 would be less than significant.

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.)

Less Than Significant Impact—The project would reconfigure an existing intersection and would have a less than significant contribution to cumulative impacts. Cumulative impacts refer to two or more individual effects, which, when considered together, are considerable or compound or increase other environmental impacts. A search of the Tuolumne County Online Permit Tracking System for building permits (Tuolumne County 2020b) did not reveal pending building permit applications in the vicinity of the intersection. Roadway improvements west of Mackey Ranch Road, however, are expected as future projects and are considered in the analyses below. Key areas of concern are discussed in detail below.

Biological Resources. Roadway improvements west of Mackey Ranch Road may occur in the future. Such improvements could potentially impact biological resources. Cumulatively, the intersection project would have a less than significant contribution because the project site is disturbed with the existing intersection, and standard measures would be implemented to address suitable habitat for protected species, aquatic resources, and trees.

Therefore, the potential impact would be less than significant, and potential cumulative impacts on biological resources would be avoided.

Hydrology and Water Quality. Roadway improvements west of Mackey Ranch Road may result in new impervious surfaces and effects on hydrology and water quality. Cumulatively, the intersection project would have a less than significant contribution because Construction Site Best Management Practices would be implemented to minimize impacts on aquatic features and water quality. Potential impacts on hydrology and water quality would be less than significant, and potential cumulative impacts would be avoided.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No Impact—Adverse effects on human beings would result from construction-related air quality emissions and noise. However, as discussed in Section 2.1.3, Air Quality, emissions would be controlled with the implementation of minimization measures, and therefore, no impact is expected to occur. As discussed in Section 2.1.13, Noise, there would be no impact on operational noise and no impact from construction noise based on the implementation of minimization measures. Project-related effects on human beings are, therefore, considered less than significant with the implementation of minimization measures.

2.2 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 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 by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity, including carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. Carbon dioxide is the most abundant greenhouse gas; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated carbon dioxide.

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 greenhouse gas 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.

2.2.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce greenhouse gas emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source greenhouse gas reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and greenhouse gas emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 U.S. Code Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices. (Federal Highway Administration 2019) This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.” (Federal Highway Administration). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 U.S. Code Section 6201) and Corporate Average Fuel Economy Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the U.S. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy program based on each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the U.S.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005-2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration is responsible for setting greenhouse gas emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the U.S. Fuel efficiency standards directly influence greenhouse gas emissions.

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.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 greenhouse gas emission reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (Health and Safety Code Section 38551(b)) The law requires the California Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The California Air Resources Board re-adopted the low carbon fuel standard 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 greenhouse gas reduction goals.

Senate Bill 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land use, and housing policies to plan how it would achieve the emissions target for its region.

Senate Bill 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 Assembly Bill 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the governor, including the California Air Resources Board, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015) establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs the California Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalents. [Greenhouse gases differ in how much heat each trap in the atmosphere (global warming potential). Carbon dioxide is the most important greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called "carbon dioxide equivalent." The global warming potential of carbon dioxide is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of carbon dioxide]. Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, Chapter 249, 2016, codifies the greenhouse gas reduction targets established in Executive Order B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Senate Bill 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."

Assembly Bill 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 the California Air Resources Board to prepare a report that assesses progress made by each Metropolitan Planning Organization in meeting its 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 greenhouse gas emissions.

Executive Order N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce greenhouse gas emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This executive order also directs the California Air Resources Board to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

2.2.2 Environmental Setting

The proposed project site is in a rural area characterized by a population generally dispersed throughout small towns made up of mixed-use development surrounded by open expanses consisting of agriculture, native vegetation, and low-density development. State Route 108 is the main transportation route through the area for both passenger and commercial vehicles. The nearest alternate route is State Route 49, 4 miles to the north. Traffic volumes are low, and State Route 108 is rarely congested; however, many of the identified future roadway deficiencies would occur on segments

that have a current degree of deficiency. (Tuolumne County 2018d) Certain turning movements along State Route 108 operate at unacceptable levels, including at the State Route 108/49 Mackey Ranch Road project intersection. There are no pedestrian or transit facilities along this roadway. There is a 5-foot shoulder so cyclists can ride next to vehicle traffic.

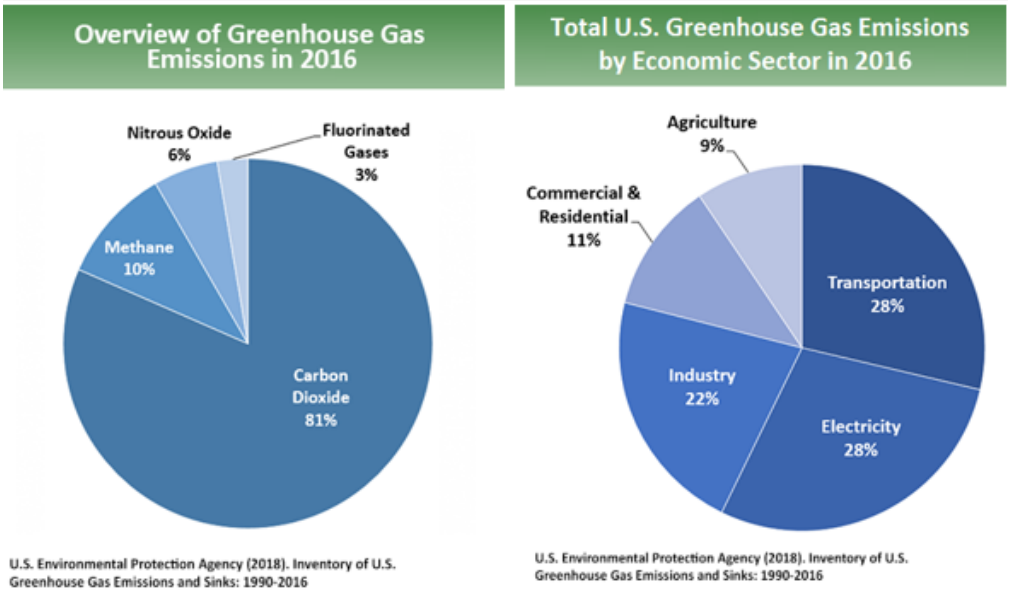
The Tuolumne County Transportation Council guides transportation development in the project area. Additionally, the 2018 Tuolumne County General Plan Transportation Element (Chapter 4) and Climate Change Element (Chapter 18) address greenhouse gases in the project area.

A greenhouse gas emissions inventory estimates the amount of greenhouse gases discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual greenhouse gas emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. The U.S. Environmental Protection Agency is responsible for documenting greenhouse gas emissions nationwide, and the California Air Resources Board does so for the state, as required by Health and Safety Code Section 39607.4.

National Greenhouse Gas Inventory

The U.S. Environmental Protection Agency prepares a national greenhouse gas inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of greenhouse gas emissions in the U.S., reporting emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. It also accounts for emissions of carbon dioxide that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store carbon dioxide (carbon sequestration). Figure 2-7 shows the 2016 emissions inventory for the U.S. The 1990-2016 inventory found that of 6,511 million metric tons of carbon dioxide equivalent greenhouse gas emissions in 2016, 81 percent consist of carbon dioxide, 10 percent are methane, and 6 percent are nitrous oxide; the balance consists of fluorinated gases. (U.S. Environmental Protection Agency 2018) In 2016, greenhouse gas emissions from the transportation sector accounted for nearly 28.5 percent of U.S. greenhouse gas emissions.

Figure 2-7 U.S. 2016 Greenhouse Gas Emissions



State Greenhouse Gas Inventory

The California Air Resources Board collects greenhouse gas 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 greenhouse gas reduction goals. The 2019 edition of the greenhouse gas emissions inventory found total California emissions of 424.1 million metric tons of carbon dioxide equivalent for 2017, with the transportation sector responsible for 41 percent of total greenhouse gases. It also found that overall statewide greenhouse gas emissions declined from 2000 to 2017 despite growth in population and state economic output. (California Air Resources Board 2019a) Figure 2-8 shows the 2017 emissions inventory for California. Figure 2-9 shows the change in California's gross domestic product, population, and greenhouse gas emissions between 2000 and 2017.

Figure 2-8 California 2017 Greenhouse Gas Emissions

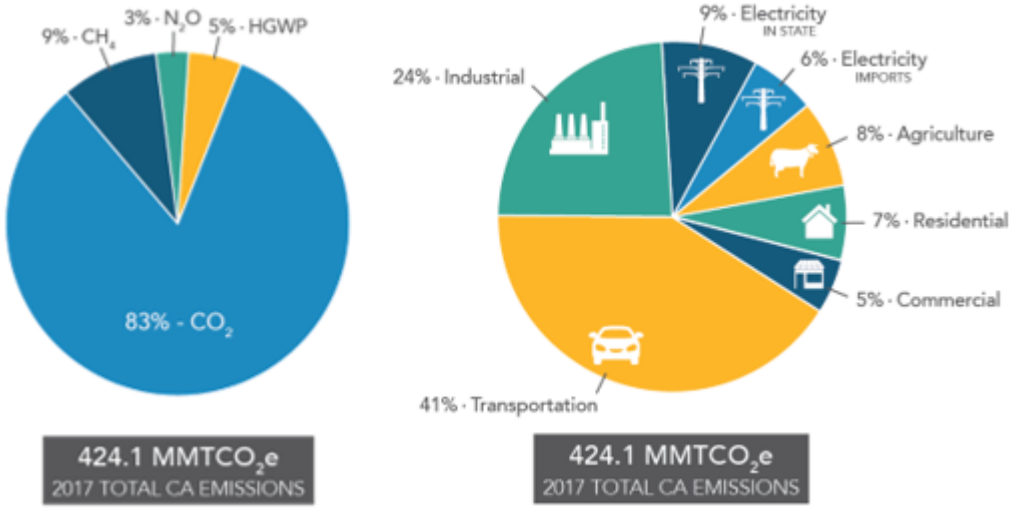
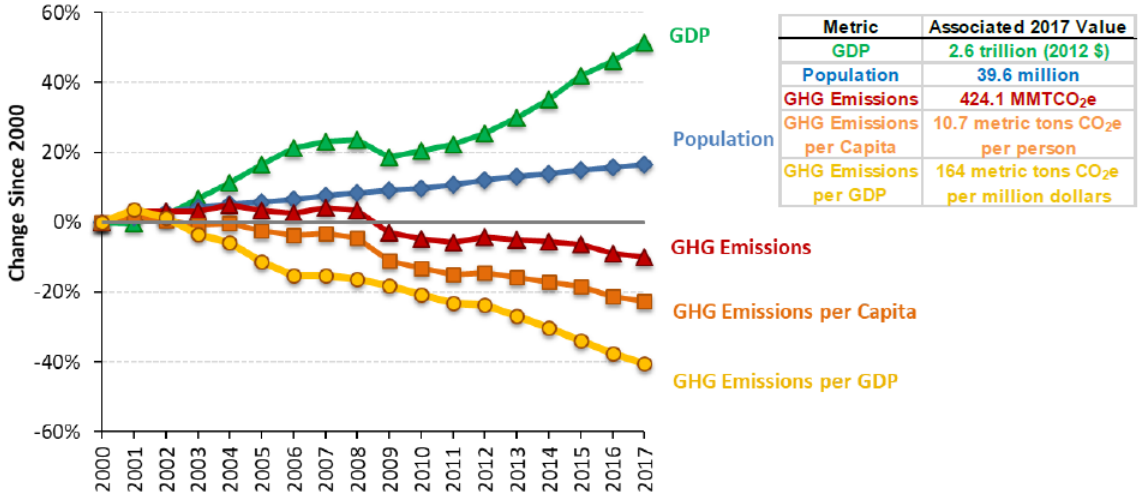


Figure 2-9 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions Since 2000



Source: California Air Resources Board 2019b

Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California would take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every five years. The California Air Resources Board 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 Executive Order B-30-15 and Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California would use to reduce greenhouse gas emissions.

Regional Plans

The California Air Resources Board sets regional targets for California's 18 Metropolitan Planning Organizations to use in their Regional Transportation

Plan/Sustainable Communities Strategy to plan future projects that would cumulatively achieve greenhouse gas reduction goals. Targets are set at a percent reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. As a rural regional planning agency, the Tuolumne County Transportation Council is not required to comply with Senate Bill 375 because it only applies to Metropolitan Planning Organizations.

The proposed project is included in the Tuolumne County Transportation Council's 2016 Regional Transportation Plan, which contains a rural sustainable strategies element that builds upon previous Tuolumne County regional blueprint plans. The rural sustainable strategies element provides an alternative sustainability plan that is more feasible to Tuolumne County and possibly other rural agencies for compliance with Assembly Bill 32. The project is outside of the Jamestown area plan boundary, as described in the rural sustainable strategies. The following rural sustainable strategies goals are applicable to the project:

- Goal 1: Ensure the balance of environmental, economic, and social equity metrics in making transportation decisions.
- Objective: implement the rural sustainable strategies.
- Policy 1: Use the rural sustainable project level performance assessment (Appendix F) tool for funding transportation projects.
- Policy 3: Support and prioritize the greenhouse gas emission reduction policies.
- Goal 2: Integrate land use and transportation decisions by prioritizing infrastructure investments within the defined community boundaries that strike a balance between development, available infrastructure, conserves natural resources, and provides for a high quality of life. (Regional Goal 6)
- Objective: Increase funding toward transportation projects that support the land uses within the defined community boundaries. (Regional Blueprint Greenhouse Gas Study)
- Policy 2: Provide a variety of transportation choices by adopting policies that promote more alternative modes of transportation.
- Goal 3: Practice environmental stewardship by protecting air quality, natural resources, and historical and cultural assets. (Regional Goal 5)
- Objective: Identify and mitigate potential environmental impacts from the transportation system.
- Policy 2: Reduce air quality emissions and greenhouse gas emissions from the transportation sector. (Regional Blueprint Greenhouse Gas Study)
- Policy 3: Reduce vehicle miles traveled by increasing the use of alternative modes of transportation.

Additionally, the project is consistent with applicable rural sustainable strategies:

- Complete Streets—Prioritize projects that add complete streets improvements along the State Highway System and the local road network.
- Highways and Local Roads—Prioritize projects that reduce traffic congestion.
- Improve Traffic Operations—Improve the flow of traffic by building left-turn channelization projects, improving traffic signal timing, building roundabouts where appropriate, and other traffic flow improvements.
- Non-Motorized Transportation—Prioritize non-motorized transportation infrastructure along congested corridors.
- Safety—Support, facilitate, and prioritize safety studies and safety improvement projects.

Tuolumne County has started the process of developing a climate action plan that is expected to have specific strategies and priority actions for the proposed 2030 and 2050 greenhouse gas reduction scenarios. A draft climate action plan is not yet available.

Intersection improvements at the proposed project site were identified as a Tier 3 Unfunded Capital Improvement Project in the Tuolumne County Transportation Council's 2016 Final Regional Transportation Plan. The project description provided in the Final Regional Transportation Plan includes the following:

- Build a new signal intersection at the intersection of Mackey Ranch Road/Sierra Rock Road and State Route 108/49.

The 2016 Regional Transportation Plan's description of the proposed project is inconsistent with the current description. Since the Regional Transportation Plan was published, a traffic analysis was completed for the project, and it was determined that the preferred alternative would be the construction of a roundabout at the intersection. The proposed project, as currently described, would meet the purpose and need identified in the Regional Transportation Plan.

2.2.3 Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the State Highway System and those produced during construction. The primary greenhouse gas emissions produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion

engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. In addition, a small amount of hydrofluorocarbon 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. (Public Resources Code, Section 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 Association 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 project is to improve overall operations, circulation, and accessibility for all transportation modes, such as driving and cycling, by replacing the current intersection at State Route 108/49 and Mackey Ranch Road with a modern, yield-controlled, four-legged, single-lane roundabout with share-the-road demarcations. A literature review by the Insurance Institute for Highway Safety found that roundabouts can reduce fuel consumption by 23 percent to 34 percent and carbon dioxide emissions by about 23 percent to 37 percent. (Insurance Institute for Highway Safety 2018) The roundabout would be designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Casino. The project would not increase the vehicle capacity of the roadway. This type of project generally causes minimal or no increase in operational greenhouse gas emissions. Because the project would not increase the number of travel lanes on State Route 108/49, no increase in vehicle miles traveled would occur as a result of project implementation. While some greenhouse gas emissions during the construction period would be unavoidable (see discussion below), there would be improved flow through the intersection and an associated reduction in future idling during project operation. As such, the project may result in a reduction in operational greenhouse gas emissions as compared to continued use of the project intersection without project improvements. Additionally, there would likely be long-term greenhouse gas benefits from an improved operation and smoother pavement surfaces.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Greenhouse gas emissions related to expected construction activities were quantified using Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model (version 9.0.0). Construction parameters included a construction start year of 2020, and a duration of six months. Total construction-generated carbon dioxide emissions were estimated to be 2,636 total tons (2,418 metric tons of carbon dioxide equivalent, consisting of carbon dioxide, methane, and nitrous oxide). The construction-generated greenhouse gas emissions for the project equals 80.6 metric tons of carbon dioxide equivalent per year when annualized over an assumed 30-year period.

Project-level greenhouse gas reduction strategies are identified in the greenhouse gas reduction strategies in the next section. These measures include using energy-efficient light-emitting diode roadway lighting, prohibiting burning material, minimizing landscape water consumption, minimizing construction equipment idling time, avoid removing existing mature trees, using Tier 3 engines for construction equipment, and avoid using onsite diesel-fueled generators, among others.

All construction contracts include Caltrans Standard Specifications Sections 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 would comply with all the California Air Resources Board 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 greenhouse gas emissions.

CEQA Conclusion

While the proposed project would result in greenhouse gas emissions during construction, it is expected that the project would not result in any increase in operational greenhouse gas 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 the implementation of construction greenhouse gas-reduction measures, the impact would be less than significant.

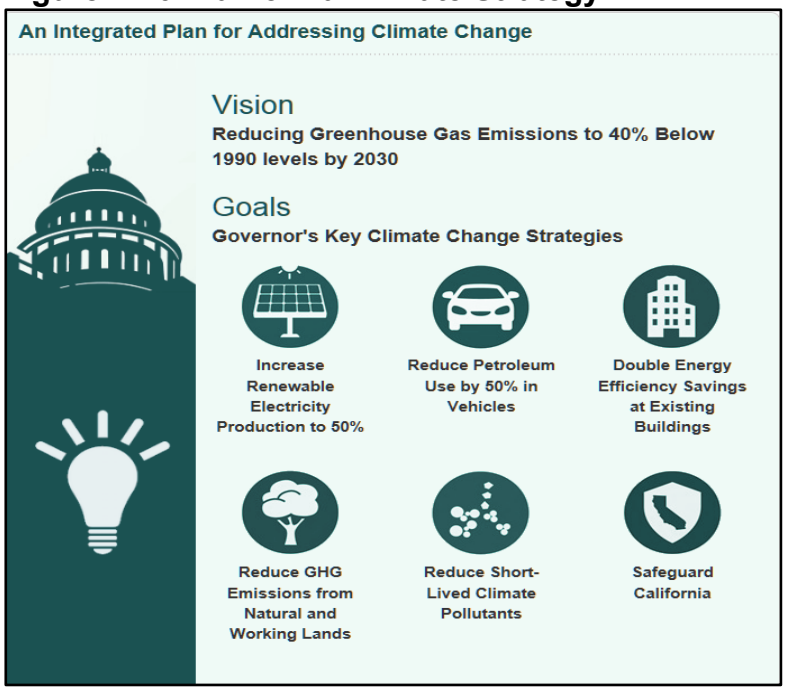
Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

2.2.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, would need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. As shown in Figure 2-10, Former Governor Edmund G. Brown Jr. promoted greenhouse gas 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 2-10 California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve greenhouse gas 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. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. A key state goal for reducing greenhouse gas 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, Senate Bill 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-ground and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Executive Order B-30-15, issued in April 2015, and Senate Bill 32 (2016), set an interim target to cut greenhouse gas 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 (2040)

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. In 2016, Caltrans completed the California Transportation Plan 2040, which establishes a new model for developing ground transportation systems, consistent with carbon dioxide 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.

Senate Bill 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under Assembly Bill 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation Plan 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 greenhouse gas emissions, among other goals. Specific performance targets in the plan that would help to reduce greenhouse gas emissions include:

- Increasing percentage of non-auto mode share;
- Reducing vehicle miles traveled; and
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) greenhouse gas emissions.

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas 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 Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas 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 Climate Change (June 22, 2012) is intended to establish a Department policy that would 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 greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project.

Project Initial Study and Proposed Negative Declaration

The project design as a roundabout would improve traffic flow. Vehicles do not idle for as long at a roundabout as they do at a signal or stop sign because they are not required to stop or queue while passing through a roundabout; this helps to reduce fuel consumption and vehicle emissions.

Standard Measure

EGY-2: Implement Caltrans Standard Specifications Sections 14 and 14-9.02., which state:

- Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017. (Public Contract Code Section 10231)
- Do not dispose of material by burning.

Avoidance and Minimization Measures

EGY-2: The final design would incorporate energy-efficient light-emitting diode roadway lighting.

EGY-3: If landscaping is included in the final design, water-efficient choices would be implemented per the statewide Model Water Efficient Landscape Ordinance or local ordinances as applicable.

GHG-1: Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes. (California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485)

2.2.5 Adaptation

Reducing greenhouse gas 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 would 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.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and Federal Highway Administration NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every four years, in accordance with the Global Change Research Act of 1990. (15 U.S. Code Chapter 56A Section 2921 et seq.) The *Fourth National Climate Assessment,* published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts,

consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime." (U.S. Global Change Research Program 2018)

The U.S. Department of Transportation Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of Department of Transportation in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions." (U.S. Department of Transportation 2011)

Federal Highway Administration order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014) established Federal Highway Administration policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The Federal Highway Administration has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels. (Federal Highway Administration 2019)

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.

Executive Order 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 Ris*k. (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.

Executive Order 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* in 2010, with instructions for how state agencies could incorporate "sea-level rise 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.

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

Assembly Bill 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 expected 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 infrastructure that meets the needs of all Californians.

Project Adaptation Analysis

The following climate change vulnerability assessments and adaptation documents were consulted for assessing the project's vulnerability to climate change impacts and the potential to exacerbate those impacts:

- Caltrans Climate Change Vulnerability Assessment; District 10 Technical Report. (Caltrans 2019c)
- Tuolumne County 2018 General Plan. (Tuolumne County 2018e)

As described in the Caltrans Climate Change Vulnerability Assessment for District 10, extreme weather impacts in District 10, including within Tuolumne County, are expected to include heavy precipitation events. Such events could result in additional flooding, increased size and number of areas affected by wildfire, and combined effects of wildfire and flooding (e.g., slip outs and washouts). Additionally, the assessment discusses the potential for sea-level rise within the Stockton and Sacramento areas.

The Tuolumne County 2018 General Plan includes adaptation strategies for a more resilient county. Examples include: 1) identifying critical infrastructure vulnerable to extreme heat events, 2) developing outreach programs for outdoor workers to prevent heat-related illnesses, 3) exploring options to incorporate cool pavement technology, 4) establishing an excessive-heat emergency response plan, and 5) identifying critical infrastructure vulnerable to wildfire. As part of the 2018 General Plan, Tuolumne County identified the need to address climate change, adaptation, and resiliency through the preparation of a climate action plan. Tuolumne County is in the process of preparing a climate action plan, and no draft document is currently available.

Climate change risk analysis involves uncertainties as to the timing and intensity of potential risks; this uncertainty is inherent in projections and modeling future conditions. However, the Caltrans Climate Change Vulnerability Assessment for District 10 uses the most recent generation of greenhouse gas scenarios produced by the Intergovernmental Panel on Climate Change—the leading international body recognized for its work in quantifying the potential effects of climate change.

Sea-Level Rise

The project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts on transportation facilities due to a projected sea-level rise are not expected.

Floodplains Analysis

The project site is outside of the 100-year flood plain, in a Federal Emergency Management Agency Zone X—area of minimal flood hazard—and does not contain a bridge or culvert that would be susceptible to damage from increased flooding associated with future climate change scenarios. The project site is within an area identified as having a 0.0 percent to a 4.9 percent change in the 100-year storm precipitation depth by 2025, 2055, and 2085. (Caltrans 2019c) Therefore, the project site is not expected to be subject to a substantial increase in 100-year storm precipitation depths. Furthermore, the project would not substantially increase impervious surfaces in the area, have features that would redirect flows, or otherwise exacerbate potential flooding through changes in grade or slope.

Wildfire

The project is in a state responsibility area classified as having a high fire hazard. (California Department of Forestry and Fire Protection 2019) The project site is an exposed roadway within an area that Caltrans identifies would have a high level of concern by 2025, 2055, and 2085. (Caltrans 2019c) In addition to the direct effects of wildfires on transportation facilities, they can indirectly contribute to:

- Landslide and flooding exposure by burning off soil-stabilizing land covers and reducing the capacity of the soils to absorb rainfall.
- Wildfire smoke, which can affect visibility and the health of the public and Caltrans staff.

Operationally, the project would not exacerbate wildfire risks. The project is at an existing intersection and would not include new development in a previously unoccupied area. The intersection accommodates projected traffic and is not expected to cause unplanned growth.

During construction, there is a potential for higher fire risk due to the use of heavy construction equipment onsite and near grasslands. Implementation of Caltrans Standard Specifications and Best Management Practices would avoid impacts.

Stormwater runoff volumes and rates are not expected to be substantially different than existing volumes and rates. The final design of stormwater drainage would be consistent with Caltrans' standards. Post-fire slope instability is not expected because exposed slopes would be revegetated/hydroseeded in accordance with Caltrans' Standard Specifications. The project would not be exposed to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes.

U.S. Army Corps of Engineers

The aquatic resources delineation and a request for a preliminary jurisdictional delineation were sent to the U.S. Army Corps of Engineers on July 18, 2019. The U.S. Army Corps of Engineers concurred with the aquatic resources delineation and provided a preliminary jurisdictional delineation on December 2, 2019.

Central California Information Center

The Central California Information Center, which is based out of California State University, Stanislaus, completed a California Historical Resources Information System records search on October 23, 2018. (Central California Information Center 10873/O) The records search covered the Project Area Limit and a 1-mile radius.

Native American Heritage Commission

Cogstone requested a Sacred Lands File search from the Native American Heritage Commission on October 9, 2018. The Native American Heritage Commission responded on October 18, 2018, that a search of the Sacred Lands File was positive for the presence of Native American cultural resources within the Project Area Limit and that the Tribe should be consulted regarding sacred sites within the Project Area Limit.

Chicken Ranch Rancheria of Me-Wuk Indians of California

Tim Spillane of Cogstone reached out to the Tribe via Kyrsten Shields of HELIX Environmental Planning, Inc. on July 29, 2019. Tribal Environmental Manager Bailey Hunter responded on August 2, 2019, with a confidential memorandum summarizing the results of a California Historical Resources Information System records search and survey overseen by Charlane Gross, a Registered Professional Archaeologist of Analytical Environmental Services.

Chapter 4 List of Preparers

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

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Charlie Do, Caltrans Project Manager. Contribution: Project oversight.

William L. Duttera, Landscape Architect. Contribution: Review of visual study.

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Divine Yang, Associate Environmental Planner. B.S., Pharmaceutical Chemistry, University of California, Davis. Contribution: Coordinated reviews of technical studies and the environmental document.

Chicken Ranch Rancheria of Me-Wuk Indians of California

Bailey Hunter, Environmental and Natural Resources Manager. Contribution: Oversight/project proponent.

Bollard Acoustical Consultants, Inc.

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HELIX Environmental Planning, Inc.

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Candice Guider-Heitmann, Regulatory Specialist. B.S., Business Administration, California State University, Sacramento. Contribution: Coordinated the preliminary jurisdictional determination with the U.S. Army Corps of Engineers.

John DeMartino, Geographic Information Systems Manager. B.S., Geology, California State University, Northridge; B.S., Economics, Florida State University. Contribution: Geographic Information System mapping.

Cogstone

Tim Spillane, Principal Investigator/Archaeologist. M.A., Text and Material Culture with an emphasis in Archaeological Approaches, University of Roehampton London; B.A., Anthropology, San Francisco State University. Contribution: Prepared the Historical Resources Compliance Report/Archaeological Survey Report.

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Wayne Shijo, Air Quality Specialist. B.S., Environmental Planning and Management. Contribution: Prepared the Air Quality Technical Memorandum.

Chapter 5 Distribution List

- California State Clearinghouse
- American Telephone and Telegraph Corporation
- California Transportation Commission
- Central Valley Independent Network
- Pacific Gas and Electric Company
- Tuolumne County
- California Department of Fish and Wildlife
- Regional Water Quality Control Board
- State Water Resources Control Board
- U.S. Army Corps of Engineers

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Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
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Making Conservation a California Way of Life.

November 2019

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, remedies, 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, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/business-and-economic-opportunity/title-vi.

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, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
Director

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

Appendix B Avoidance, Minimization, and/or Mitigation Summary

To ensure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record that follows) would be implemented. During project design, avoidance, minimization, and/or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in the Environmental Commitments Record are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. Because the following Environmental Commitments Record is a draft, some fields have not been completed; they will be filled out as each of the measures is implemented.

Note: Some measures may apply to more than one resource area. Duplicated or redundant measures have not been included in this Environmental Commitments Record.

AES-1. Exposed slopes would be revegetated in accordance with Caltrans standards regarding erosion control.

AES-2. If aesthetic elements, such as hardscape aesthetic treatments, are incorporated during the project's final design, such features would be designed and implemented in coordination with Caltrans' landscape architects.

AES-3. Vegetation clearing would only occur within the delineated project boundaries to minimize the impacts. Trees in areas along the edge of the construction zone would be trimmed whenever possible, and only those trees that lie within the active construction areas would be removed.

AES-4. Construction lighting types, plans, and placement would comply with Caltrans' standards and local standards to minimize light and glare impacts on surrounding sensitive uses.

AES-5. Implement dust suppression in accordance with Caltrans Standard Specifications for Construction Sections 10 and 18. (Dust Control)

AQ-1. Implement Caltrans' Standard Best Management Practices during construction. Best Management Practices may include the following features to minimize erosion and sediment loss:

- Staging areas would include reinforced temporary construction entrances, protected concrete washout, and storage facilities for materials, as necessary;
- Following tree and shrub removal, all disturbed areas would be stabilized with temporary hydraulic mulch;
- During construction, temporary hydraulic mulch, check dams, and fiber rolls would be placed in advance of predicted rain events in areas currently under construction;
- Erosion controls made up of hydroseed, hydromulch, and fiber rolls would be placed along the project where necessary to prevent erosion;
- Following the completion of grading and paving activities, all equipment and materials would be removed, and staging areas would be restored to resemble pre-construction conditions;
- Permanent erosion control made up of hydroseed, hydromulch, and biodegradable fiber roll would be used where ground-disturbing activities occur. Native seed mix would be used for all revegetation; and
- Following final stabilization, temporary Best Management Practices and temporary fencing would be removed.

BIO-1. A qualified biologist would conduct a pre-construction survey for coast horned lizards within the Biological Study Area within 14 days before ground-disturbing activities start. If no coast horned lizards are seen, no additional measures would be recommended. If construction does not start within 14 days or stops for more than 14 days after the pre-construction survey, then a new survey would be recommended.

If coast horned lizards are found, a qualified biologist would conduct a second pre-construction survey within 24 hours before construction activities start. The qualified biologist would be present onsite during initial ground clearing and grading activities to relocate any coast horned lizards found within the construction footprint to suitable habitat away from the construction zone but within the Biological Study Area.

If coast horned lizards are found, a qualified biologist would conduct an environmental awareness training for all construction personnel. The training would include how to identify special-status species, required practices before the start of construction, and general measures that are being implemented to conserve the species as they relate to the project. The training would also cover penalties for non-compliance and boundaries of the Biological Study Area and the permitted disturbance zones. Supporting materials containing training information would be prepared and distributed.

Upon completion of training, all construction personnel would sign a form stating that they have attended the training and understand all the measures. The project proponent would keep proof of this instruction on file. The project

proponent would provide the California Department of Fish and Wildlife with a copy of the training materials and the forms signed by construction personnel showing that training has been completed within 30 days of the completion of the first training session. Copies of signed forms would be submitted monthly as additional training occurs for new employees. The crew foreman would be responsible for ensuring that construction personnel stick to guidelines and restrictions. If new construction personnel are added to the site, the crew foreman would ensure that they receive the mandatory training before starting work.

BIO-2. Pre-construction surveys for special-status bat species are recommended within 14 days before the start of ground-disturbing or tree removal activities. If no special-status bat species are seen roosting, then a letter report documenting the results of the survey would be provided to the project proponent, and no additional measures would be recommended. If construction does not start or if any trees expected to be removed are not removed within 14 days after the pre-construction survey or construction stops for more than 14 days, a new survey would be recommended.

If special-status bat species are found, consultation with the California Department of Fish and Wildlife would be recommended to determine appropriate avoidance measures. Appropriate avoidance measures may include establishing a buffer around the roost tree until it is no longer occupied. The roost tree would not be removed until a biologist has determined that special-status bat species no longer occupy the tree.

BIO-3. The Tribe would obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit, issued by the Regional Water Quality Control Board. The Tribe would also implement water quality Best Management Practices to prevent discharging pollutants to surface waters during construction. These Best Management Practices would include standard measures for tracking sediment reduction, such as vehicle washing and street sweeping, and revegetating all areas with native species that were disturbed by construction activities.

BIO-4. Before starting ground-disturbing activities, the Tribe would obtain all required regulatory authorizations from the U.S. Army Corps of Engineers and Regional Water Quality Control Board for the discharge of dredged or fill material within waters of the U.S.

BIO-5. All aquatic resources delineated within the project site are considered potential waters of the U.S. and/or waters of the State. If it is determined that some of the aquatic resources within the project site are not subject to federal jurisdiction, these resources may still be subject to waste discharge requirements under the Porter-Cologne Water Quality Control Act should the project result in impacts to these resources. Section 13260(a) of the Porter-

Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste—other than to a community sewer system—within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may make up a discharge of waste that could affect the quality of waters of the State. A report of waste discharge would be filed for impacts to non-federal waters if required.

BIO-6. If construction is expected to occur during the nesting season—February 1 through September 30—then a qualified biologist would conduct an environmental awareness training for all construction personnel. The training would include information about the potential for active nests to occur within the Biological Study Area and procedures to follow if active nests are found during construction.

BIO-7. If feasible, tree removals would be completed outside of the nesting season—October 1 through January 31. The nesting season is from February 1 through September 30.

BIO-8. A qualified biologist would conduct a pre-construction survey for active nests within 14 days before the start of construction and tree removal activities if they are expected to start during the nesting season—February 1 through September 30. An additional pre-construction survey would be conducted within 72 hours before the start of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, then a letter report would be submitted to the project proponent and the California Department of Fish and Wildlife for their records, and no additional measures would be recommended. If construction does not start within 72 hours or stops for more than 72 hours after the pre-construction survey, then an additional pre-construction survey would be recommended.

If active nests are within the Biological Study Area, a qualified biologist would establish an appropriate buffer zone around the nests. The qualified biologist would mark the buffer zone with construction tape or pin flags and maintain the buffer zone until the end of the breeding season or until the young birds have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found onsite, a qualified biologist would monitor the nests weekly during construction to evaluate potential construction-related disturbances. If establishing the typical buffer zone is impractical, then the qualified biologist may reduce the buffer depending on the species. Daily monitoring would be recommended to ensure that the nests are not disturbed and that no forced fledging occurs. Daily monitoring would occur until the qualified biologist determines that the nests are no longer occupied. Once the qualified biologist determines that the nests are no longer active, a letter report would be submitted to the project proponent and the California Department of Fish and Wildlife for their records.

BIO-9. The Applicant would obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit, issued by the California Regional Water Quality Boards, and implement water quality Best Management Practices to prevent discharge of pollutants to surface waters during construction. These Best Management Practices will include standard measures for sediment-tracking reduction, such as vehicle washing and street sweeping, and revegetation of all areas disturbed by construction with native species.

BIO-10. To minimize permanent loss of waters of the U.S. resulting from project development, the Tribe may submit a compensatory mitigation plan to the U.S. Army Corps of Engineers and Regional Water Quality Control Board proposing in-kind replacement of impacted waters of the U.S. at a minimum 1 to 1 ratio.

BIO-11. After construction, affected areas would be revegetated with plant species native to the vicinity and approved by a Caltrans biologist. The plant mix would avoid the use of any plant species listed in the California Invasive Plant Council's Invasive Plant Inventory with a high or moderate rating.

BIO-12. Implement Tree Protection Measures:

- Tree protection fencing, consisting of 4-foot tall, brightly colored, high-visibility plastic fencing, would be placed around the perimeter of the tree protection zone (dripline radius plus 1 foot) of all protected trees within 20 feet of the project footprint. The tree protection zone is the minimum distance for placing protective fencing. Tree protection fencing would be placed as far outside of the tree protection zone as possible. Signs would be placed along the fence, indicating this as a tree protection zone that would not be moved until construction is complete. Trees or tree clusters with canopies extending beyond 50 feet from project boundaries may be fenced only along the sides facing the project. In cases where proposed work infringes in the tree protection zone, fencing would be placed at the edge of the worksite.
- Whenever possible, a fence would be placed around multiple trees together in a single tree protection zone.
- Tree protection fencing would not be moved without prior authorization from an International Society of Arboriculture-certified arborist and Tuolumne County.
- No parking, portable toilets, dumping or storing of any construction materials, grading, excavating, trenching, or other infringement by workers or domesticated animals is allowed in tree protection zones.
- No signs, ropes, cables, or any other item would be attached to a protected tree unless recommended by an International Society of Arboriculture-certified arborist.

- Underground utilities would be avoided in the tree protection zone, but, if necessary, would be bored or drilled. If boring is impossible, all trenching would be done by hand under the supervision of an International Society of Arboriculture-certified arborist.
- No cut or fill within the dripline of existing native oaks would take place. If cut or fill within the dripline is unavoidable, an International Society of Arboriculture-certified arborist would monitor work to determine whether trees would be significantly impacted.
- Pruning living limbs or roots over 2 inches in diameter would be done under the supervision of an International Society of Arboriculture-certified arborist.
- All wood plant material smaller than 6 inches in diameter would be mulched onsite. Resulting mulch would be spread in a layer 4 to 6 inches deep in the tree protection zone of preserved trees. Mulch would not be placed touching the trunk of preserved trees.

Appropriate fire prevention techniques would be used around all significant trees to be preserved. This includes cutting tall grass, removing flammable debris within the tree protection zone, and prohibiting the use of tools that may cause sparks, such as metal-bladed trimmers or mowers.

CUL-1. If cultural materials are discovered during project construction, all work would stop within 100 feet of the discovery, and the resident engineer would be notified immediately. If the cultural materials are Native American in origin, Caltrans would contact the appropriate Native American group regarding the discovery. The resident engineer, a Caltrans representative, an archaeologist meeting the Secretary of the Interior's Standards in archaeology, and an appropriate Native American group would assess the discovery to determine if it qualifies as a tribal cultural resource. The appropriate treatment of the discovery, including any applicable avoidance or mitigation strategies, would be determined in consultation with the Native American group. Construction activities would not start until the appropriate treatment has been determined and any applicable mitigation has been completed. Mitigation would follow the recommendations detailed in Public Resources Code Sections 21084.3(a) and 21084.3(b), and State CEQA Guidelines Section 15370.

CUL-2. Worker environmental training would include archaeological and tribal cultural resource awareness. The training would be developed in coordination with the Tribe and would be provided before the start of project construction activities for all personnel working within the project site. The training would identify the appropriate point of contact if a tribal cultural resource is discovered. The training would also include relevant information regarding tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating state laws and regulations.

Additionally, the training would emphasize the requirement for confidentiality and culturally appropriate treatment of tribal cultural resources.

CUL-3: Implement Inadvertent Discovery Procedures for Accidental Discovery of Human Remains. Public Resources Code Section 5097.98 must be followed in the event of an accidental discovery or recognition of any human remains. The following steps would be taken if there is an accidental discovery or recognition of human remains once project-related earthmoving activities begin.

- There would be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains until the county coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required.
- If the coroner determines the remains to be Native American, then the coroner would contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission would identify the person it believes to be the “Most Likely Descendant” of the deceased Native American.
- The Most Likely Descendant may recommend to the landowner or the person responsible for the excavation work, means of treating or disposing of the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Where the following conditions occur, the landowner or an authorized representative would rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the Most Likely Descendant or in the project area in a location not subject to further subsurface disturbance.

- The Native American Heritage Commission is unable to identify a Most Likely Descendant, or the Most Likely Descendant failed to make a recommendation within 48 hours after being notified by the commission;
- The Most Likely Descendant identified fails to make a recommendation; or
- The landowner or an authorized representative rejects the recommendation of the Most Likely Descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

EGY-1. Implement Caltrans Standard Specifications Sections 14 and 14-9.02., which state:

- Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017. (Public Contract Code Section 10231)

- Do not dispose of material by burning.

EGY-2. The final design would incorporate energy-efficient light-emitting diode roadway lighting.

EGY-3. If landscaping is included in the final design, water-efficient choices would be implemented per the statewide Model Water Efficiency Landscape Ordinance or local ordinances as applicable.

GHG-1. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes. (California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485).

HAZ-1. Pre-characterization of soil and groundwater for potential aerially deposited lead impacts would occur before construction activities start. Pre-construction characterization of groundwater would occur if construction activities include dewatering, and if a laboratory analysis of pre-construction soil borings indicates an elevated total and soluble threshold limit concentration of 1,000 parts per million and 5 milligrams per liter, respectively. If lead impacted soil or groundwater is identified during pre-construction characterization, a Construction Soil Groundwater Monitoring Plan would be developed to identify protocols to be used. The plan would proactively manage potentially impacted soil and groundwater within the project alignment and reduce exposure to site workers.

In areas of ground disturbance below 3.5 feet, pre-construction soil borings would be performed to characterize petroleum plume and lead concentrations in soil and groundwater in anticipation of construction activities. Once the areas of ground disturbance and potential dewatering are confirmed, the preparation of a preliminary site investigation work plan that would identify the location and number of borings necessary for pre-characterization and depth for sample collection would be prepared. Historic soil boring information (if available) would be reviewed to further define boring locations and mitigate duplicative borings.

Laboratory analytical results of soil samples collected from the borings would be used to make sure health and safety concerns are present for construction workers. The laboratory analytical results would also determine the potential for aerially deposited lead, California Administrative Manual 17 metals, naturally occurring asbestos impacted groundwater, and soil and/or groundwater handling and disposal options. Proposed soil borings and/or groundwater sample locations would be determined following the identification of the areas and depths of soil excavation and dewatering activities. If pre-construction total threshold limit concentration soil characterization sampling indicates that concentrations of lead are elevated above 1,000 parts per million, or if soluble threshold limit concentration analytical results are greater than 5 milligrams per liter, such data may indicate potential aerially deposited lead impacts to groundwater. If

groundwater impacts are indicated by soil characterization, pre-construction characterization of potentially impacted groundwater would occur. To proactively manage potentially impacted soil and groundwater, which may be encountered during construction, a Construction Soil Groundwater Monitoring Plan would be prepared if pre-construction characterization indicates aerially deposited lead impacts to soil and/or groundwater.

If pre-construction characterization indicates aerially deposited lead/California Administrative Manual 17 metal impacts above soluble threshold limit concentration levels to soil and/or groundwater, site workers involved in excavation activities would be trained in hazardous waste operations and emergency response. (California Occupational Safety and Health Administration 1910.120) If naturally occurring asbestos is present, a Naturally Occurring Asbestos Management Plan would be prepared to manage, sample, and characterize naturally occurring asbestos soils. The Naturally Occurring Asbestos Management Plan would address onsite soil management, soil sampling, worker protection, and pre-construction characterization. If pre-construction characterization indicates naturally occurring asbestos in detectable levels, material would be sampled via the California Environmental Protection Agency Air Resources Board Test Method 435 (Test Method 435) in compliance with Naturally Occurring Asbestos Management Plan sampling plan. Each Test Method 435 must consist of three random bulk material samples of aggregate materials for preparation and analysis. Materials stored onsite should be representatively sampled before disposal, as noted in the Method 435 California Air Resources Board Guidance document.

If the project construction impacts treated wood, materials would be handled as treated wood waste-regulated solid waste. Treated wood waste would be disposed of in a solid waste landfill certified by the State Water Resources Control Board, versus a hazardous waste landfill.

NOI-1. Implement Section 14-8.02, Noise Control, of Caltrans' Standard Specifications (2018). The specification states: "Do not exceed 86 decibels, A-weighted at 50 feet from the job site activities from 9 p.m. to 6 a.m."

TRA-1. A Traffic Management Plan would be prepared and implemented during construction to facilitate through-traffic requirements and minimize disruptions to traffic and emergency services. Emergency service providers would be notified as early as possible to plan for lane closures and other delays related to construction activities. Law enforcement personnel would be notified in advance of any road closures.

UTI-1 Before construction starts, standard coordination with utility providers would take place to prevent service interruptions.

WDF-1. Require Spark-Generating Construction Equipment be Equipped with Manufacturers' Recommended Spark Arresters: Caltrans would require contractors to fit any construction equipment that includes a spark arrester with an arrester in good working order. Subject equipment would include, but would not be limited to, heavy equipment and chainsaws. Implementation of this measure would minimize a source of construction-related fires.

WDF-2. If dry vegetation or other fire fuels exist on or near staging areas, welding areas, or any other area on which equipment would be operated, the contractors would clear the immediate area of fire fuel. To maintain a firebreak and minimize the availability of fire fuels, Caltrans would require contractors to clear areas subject to construction activities of combustible natural materials to the extent feasible.

Appendix C List of Acronyms and Abbreviations

Acronym/Abbreviation	Full Title
A.M.	Ante Meridiem
CA	California
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
NEPA	National Environmental Policy Act
P.M.	Post Meridiem
Tribe	Chicken Ranch Rancheria of Me-Wuk Indians of California
U.S.	United States

Appendix D Visual Renderings



Figure D-1. Photograph of Existing Intersection, Looking North
Source: Google Earth 2019



Figure D-2. Photo-Simulation of Build Alternative, Looking North
Source: GHD



Figure D-3. Photograph of Existing Intersection, Looking South
Source: Google Earth 2019



Figure D-4. Photo-Simulation of Build Alternative, Looking South
Source: GHD

Appendix E Species Lists

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sonora (3712084))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
big-scale balsamroot *Balsamorhiza macrolepis*	PDAST11061	None	None	G2	S2	1B.2
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
Congdon's lomatium *Lomatium congdonii*	PDAPI1B0B0	None	None	G2	S2	1B.2
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
foothill yellow-legged frog *Rana boylii*	AAABH01050	None	Endangered	G3	S3	SSC
Grady's Cave amphipod *Stygobromus gradyi*	ICMAL05460	None	None	G1	S1	
hirsute Sierra sideband *Monadenia mormonum hirsuta*	IMGASC7072	None	None	G2T1	S1	
Jepson's onion *Allium jepsonii*	PMLIL022V0	None	None	G2	S2	1B.2
Mariposa clarkia *Clarkia biloba ssp. australis*	PDONA05051	None	None	G4G5T3	S3	1B.2
Mariposa cryptantha *Cryptantha mariposae*	PDBOR0A1Q0	None	None	G2G3	S2S3	1B.3
Nissenan manzanita *Arctostaphylos nissenana*	PDERI040V0	None	None	G1	S1	1B.2
North American porcupine *Erethizon dorsatum*	AMAFJ01010	None	None	G5	S3	
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
prairie falcon *Falco mexicanus*	ABNKD06090	None	None	G5	S4	WL
Rawhide Hill onion *Allium tuolumnense*	PMLIL022W0	None	None	G2	S2	1B.2
Red Hills cryptantha *Cryptantha spithamaea*	PDBOR0A2M2	None	None	G2	S2	1B.3
Red Hills ragwort *Senecio clevelandii var. heterophyllus*	PDAST8H0R2	None	None	G4?T2Q	S2	1B.2

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Red Hills soaproot *Chlorogalum grandiflorum*	PMLIL0G020	None	None	G3	S3	1B.2
Red Hills vervain *Verbena californica*	PDVER0N050	Threatened	Threatened	G2	S2	1B.1
San Joaquin roach *Lavinia symmetricus ssp. 1*	AFCJB19021	None	None	G4T3Q	S3	SSC
shaggyhair lupine *Lupinus spectabilis*	PDFAB2B3P0	None	None	G2	S2	1B.2
Stanislaus monkeyflower *Erythranthe marmorata*	PDPHR01130	None	None	G2?	S2?	1B.1
stinkbells *Fritillaria agrestis*	PMLIL0V010	None	None	G3	S3	4.2
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G3G4	S2	SSC
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Tuolumne button-celery *Eryngium pinnatisectum*	PDAPI0Z0P0	None	None	G2	S2	1B.2
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC

Record Count: 33

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

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Project information

NAME

10-1K720

LOCATION

Tuolumne County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS

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California Red-legged Frog Rana draytonii — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/2891

California Tiger Salamander Ambystoma californiense — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Chinese Camp Brodiaea Brodiaea pallida No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8290	Threatened
Red Hills Vervain Verbena californica No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7344	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS

NOT FOR CONSULTATION

ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch *Carduelis lawrencei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Nuttall's Woodpecker *Picoides nuttallii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Song Sparrow *Melospiza melodia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
Spotted Towhee *Pipilo maculatus clementae* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird *Agelaius tricolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10

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Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

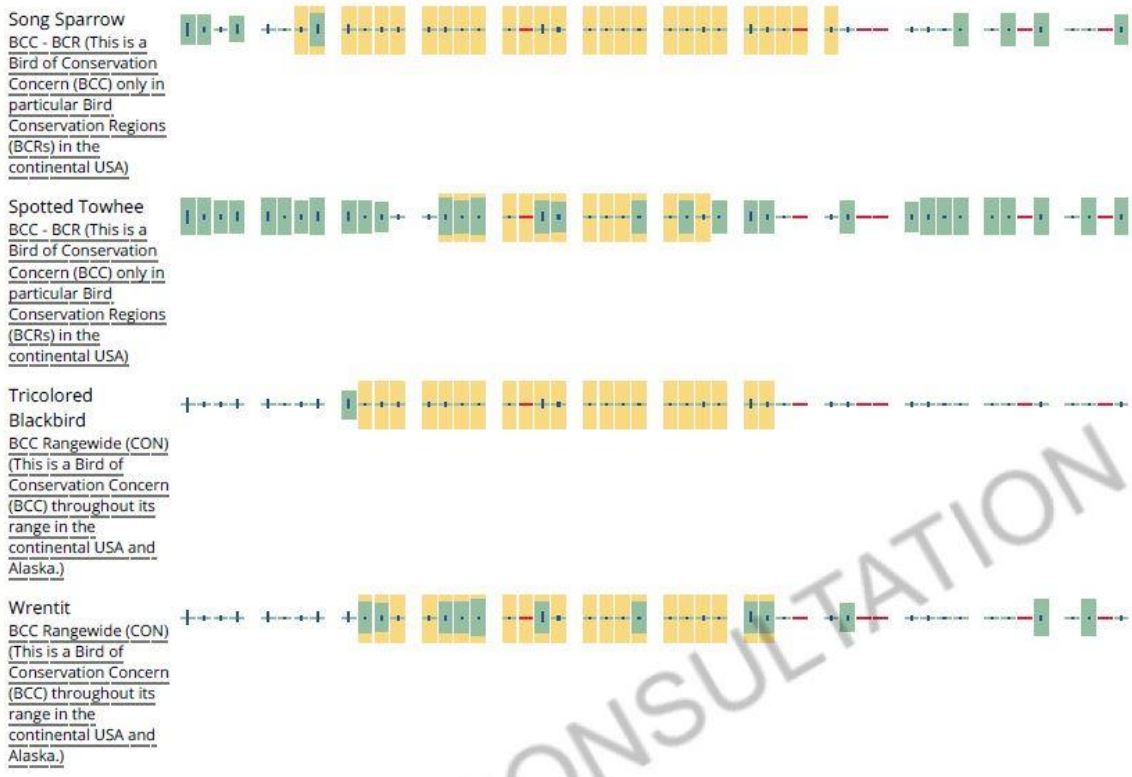
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Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

NOT FOR CONSULTATION

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

NOT FOR CONSULTATION

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

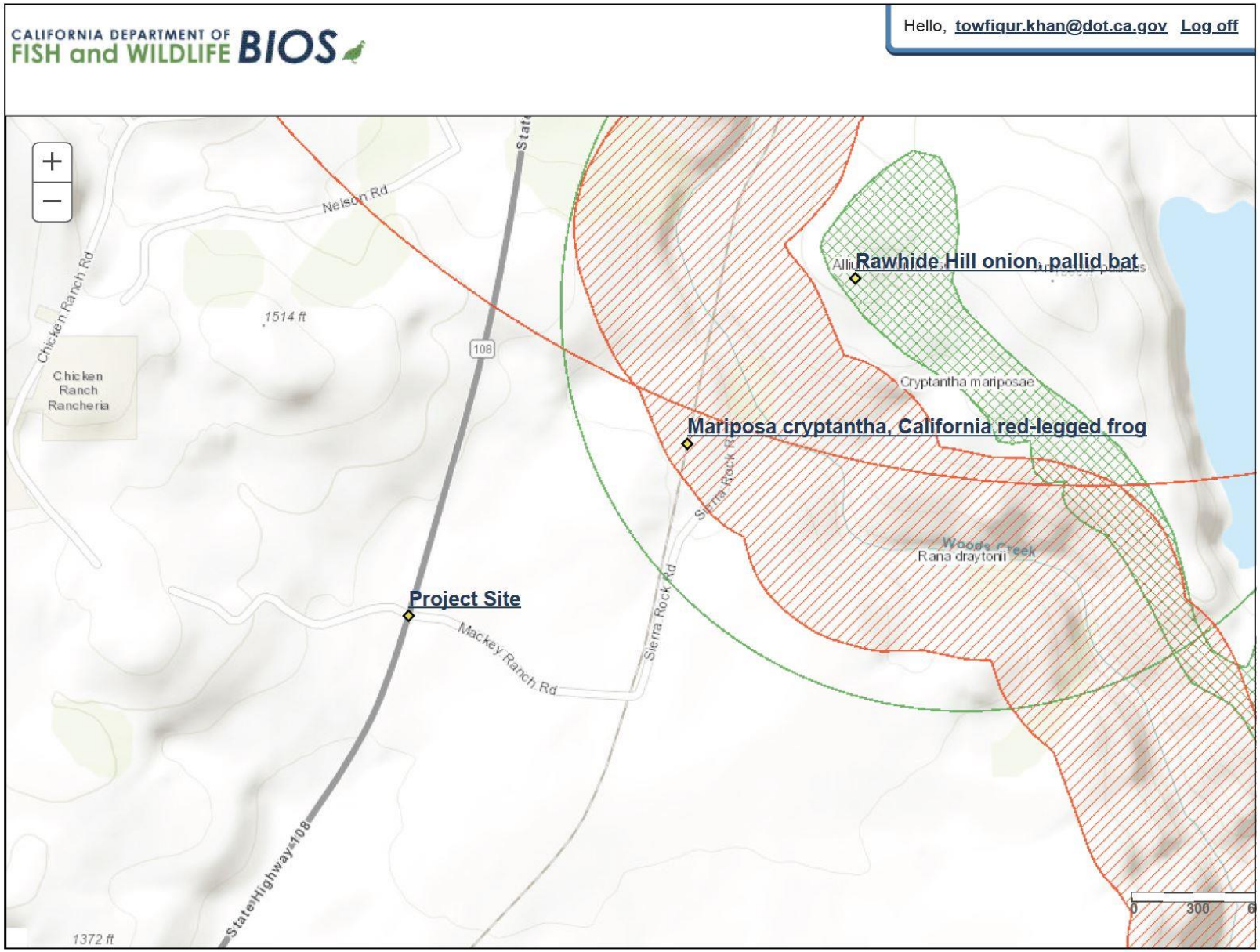
Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

7/28/2020 BIOS viewer 5.89.14c



https://apps.wildlife.ca.gov/bios/?al=ds45 1/1

Appendix F Roadway Construction Emissions Model—Output

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> SR 108/49 & Mackey Ranch Road Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.17	9.98	12.99	2.56	0.56	2.00	0.92	0.50	0.42	0.02	2,125.20	0.58	0.05	2,153.40
Grading/Excavation	6.09	48.15	68.73	5.00	3.00	2.00	3.13	2.72	0.42	0.10	9,630.29	2.87	0.12	9,738.85
Drainage/Utilities/Sub-Grade	3.58	30.56	36.45	3.77	1.77	2.00	2.06	1.65	0.42	0.06	5,647.59	1.20	0.08	5,701.92
Paving	1.65	17.61	16.21	0.97	0.97	0.00	0.87	0.87	0.00	0.03	2,781.19	0.75	0.06	2,816.27
Maximum (pounds/day)	6.09	48.15	68.73	5.00	3.00	2.00	3.13	2.72	0.42	0.10	9,630.29	2.87	0.12	9,738.85
Total (tons/construction project)	1.66	13.65	18.05	1.50	0.83	0.67	0.89	0.75	0.14	0.03	2,636.41	0.72	0.04	2,665.41

Notes:

Project Start Year ->	2020
Project Length (months) ->	6
Total Project Area (acres) ->	7
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	40
Grading/Excavation	0	0	0	0	800	40
Drainage/Utilities/Sub-Grade	0	0	0	0	560	40
Paving	0	0	0	0	400	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> SR 108/49 & Mackey Ranch Road Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.05	0.40	0.51	0.10	0.02	0.08	0.04	0.02	0.02	0.00	84.16	0.02	0.00	77.36
Grading/Excavation	1.09	8.58	12.25	0.89	0.54	0.36	0.56	0.48	0.07	0.02	1,716.12	0.51	0.02	1,574.40
Drainage/Utilities/Sub-Grade	0.43	3.63	4.33	0.45	0.21	0.24	0.24	0.20	0.05	0.01	670.93	0.14	0.01	614.52
Paving	0.10	1.05	0.96	0.06	0.06	0.00	0.05	0.05	0.00	0.00	165.20	0.04	0.00	151.76
Maximum (tons/phase)	1.09	8.58	12.25	0.89	0.54	0.36	0.56	0.48	0.07	0.02	1716.12	0.51	0.02	1,574.40
Total (tons/construction project)	1.66	13.65	18.05	1.50	0.83	0.67	0.89	0.75	0.14	0.03	2636.41	0.72	0.04	2,418.05

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	SR 108/49 & Mackey Ranch Road	
Construction Start Year	2020	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	6.00	months
Working Days per Month	132.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.37	miles
Total Project Area	6.60	acres
Maximum Area Disturbed/Day	0.20	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.60		1/1/2020
Grading/Excavation		2.70		1/20/2020
Drainage/Utilities/Sub-Grade		1.80		4/12/2020
Paving		0.90		6/6/2020
Totals (Months)		6		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Paving (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Paving (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

List of Technical Studies

- Archaeological Survey Report (confidential)
- Air Quality Construction Emissions Analysis Technical Memorandum and Amendment Memorandum
- Air Quality Analysis for Federal Conformity
- Construction Noise Memorandum and Amendment Memorandum
- Historical Resources Compliance Report (confidential)
- Initial Site Assessment
- Materials Report
- Land Use Technical Memorandum and Amendment Memorandum
- Natural Environment Study and Amendment Memorandum
- Long Form Stormwater Data Report
- Traffic Operational Analysis Report
- Visual Impact Assessment—Minor Level

To obtain a copy of one or more of these technical studies/reports or the Initial Study, please send your request to the following email address: district10publicaffairs@dot.ca.gov.

Please indicate the project name and project identifying code (under the project name on the cover of this document) and specify the technical report or document you would like a copy of. Provide your name and email address or U.S. postal service mailing address (street address, city, state and zip code).