

South Madera 6-Lane

On State Route 99 from north of Avenue 7 to Avenue 12 in Madera County

06-MAD-99-PM 0.1-8.1

EA 06-0H220 and Project ID 0612000158

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment



Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code 327 and the Memorandum of Understanding dated December 23, 2016, and executed by the Federal Highway Administration and Caltrans.

February 2021



General Information About This Document

What's in this document:

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

What you should do:

- Please read the document. Additional copies of the document and the related technical studies are available for review at the Caltrans district office at 1352 West Olive Avenue, Fresno, California, 93728, the Madera County Public Library at 121 North G Street, Madera, California, 93637 and the Madera County Government Center at 200 West 4th Street, Madera, California, 93637. The Caltrans district office is open to the public from 8:00 a.m. to 5:00 p.m. Monday through Friday, and the library will be open to the public from 10:00 a.m. to 6:00 p.m. on Monday and Wednesday, from 10:00 a.m. to 3:00 p.m. on Saturday; it will also be open on Wednesday from 9:00 a.m. to 10:00 a.m. for seniors and individuals needing special accommodations. The Madera County Government Center is available by appointment only through the Madera County Public Works Department at 559-675-7811 from 8:00 a.m. to 5:00 p.m. Monday through Friday. The document can also be downloaded at the following website: <https://dot.ca.gov/caltrans-near-me/district-6>.
- Tell us what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline. Send comments via U.S. mail to: Richard Putler, Senior Environmental Planner, Central Region Environmental, California Department of Transportation, 855 M Street, Suite 200, Fresno, California, 93721. Submit comments via email to: richard.putler@dot.ca.gov.
- Be sure to send comments by the deadline: March 11, 2021.

What happens next:

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Richard Putler, Central Region Environmental, 855 M Street, Suite 200, Fresno, California, 93721; 559-445-5286 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

Widen State Route 99 from four lanes to six lanes from post miles 0.1 to 8.1
in Madera County

**INITIAL STUDY
with Proposed Mitigated Negative Declaration/
ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S. Code 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation
and
Responsible Agencies: California Transportation Commission



Juergen Vespermann
Acting Office Chief
Southern San Joaquin Valley Environmental Office
California Department of Transportation
NEPA and CEQA Lead Agency

02-04-2021

Date

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DRAFT
Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to widen State Route 99 in Madera County from just north of Avenue 7 to Avenue 12 (post miles 0.1-8.1). One lane would be built in each direction on the highway median to create a six-lane highway. Additionally, the existing lanes and shoulders of State Route 99 would be rehabilitated, and a concrete median barrier would be installed along with an auxiliary lane at the Avenue 12 northbound off-ramp.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This Mitigated 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 proposed project would not have a significant effect on the environment for the following reasons.

The project would have no effect on coastal resources, wild and scenic rivers, parks and recreational facilities, forest resources, community character and cohesion, environmental justice, hydrology and floodplains, geology and soils, natural communities, wetlands and other waters, plant species, mineral resources, energy, public services, population and housing, recreation, and wildfire.

The project would have no significant effect on existing and future land use, farmland, growth, relocation and real property acquisition, utilities and emergency services, traffic and transportation, cultural resources, water quality, hazardous materials, water quality, air quality, and noise.

The project would have no significantly adverse effect on aesthetics, paleontology, and greenhouse gases because the following mitigation measures would reduce potential effects to insignificance:

Aesthetics

- "Where the Palm Meets the Pine" landmark would be permanently removed from the State Route 99 median within the project limits and relocated to the southbound shoulder of State Route 99. A single row of 15 Canary Island date palm trees followed by 15 Deodar Cedar pine trees would be planted on the southbound shoulder of State Route 99. The oleanders in the median would be permanently removed from the State Route 99 median within the project limits. New oleanders would be planted on the southbound shoulders of State Route 99.

Paleontology

- Mitigation would consist of pre-construction environmental awareness training, field monitoring during construction, and the salvaging, preparation, identification, and curation of scientifically significant fossils if discovered.

Greenhouse Gases

- Mitigation would consist of installing level two electric vehicle chargers for public use.

Juergen Vespermann
Acting Office Chief
Southern San Joaquin Valley Environmental Office
California Department of Transportation

Date

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Chapter 1 **Proposed Project**

1.1 Introduction

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 U.S. Code 327 for more than 5 years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Barack Obama on July 6, 2012, amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 (NEPA Assignment Memorandum of Understanding) with the Federal Highway Administration. The NEPA Assignment Memorandum of Understanding became effective October 1, 2012, and was renewed on December 23, 2016, for a term of 5 years. In summary, the Department continues to assume Federal Highway Administration responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes.

With NEPA Assignment, Federal Highway Administration assigned, and the Department assumed all of the U.S. Department of Transportation Secretary’s responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that the Federal Highway Administration assigned to the Department under the 23 U.S. Code 326 Categorical Exclusion Assignment Memorandum of Understanding, projects excluded by definition, and specific project exclusions.

Caltrans proposes to improve a segment of State Route 99 in Madera County from north of Avenue 7 to Avenue 12 (see Figures 1-1 and 1-2). The total length of the project is 8 miles. Widening in the median would occur from post mile 1.5 to post mile 7.6. From post mile 0.1 to post mile 1.5, State Route 99 already has the width of a six-lane highway but is currently striped as a four-lane highway. The Madera 99 Widening Project between Avenue 12 and Avenue 17 is currently under construction. That project will be built as a six-lane highway but will be striped as a four-lane highway from post mile 7.6 to post mile 8.1. Once the median widening from post mile 1.5 to post mile 7.6 is complete, the entire project limits would be restriped as a six-lane highway.

To the north and south of the project limits, State Route 99 is a six-lane facility. This project would lead to gap closure and continue the statewide objective of eliminating four-lane segments on State Route 99 in the San Joaquin Valley. The project would also eliminate the existing bottleneck, improve operation, and reduce congestion.

The project is included in the 2018 Interregional Transportation Improvement Program and is proposed for funding from the 2020 Regional Transportation Improvement Program. The project is also included in the Madera Transportation Commission's 2019 Federal Transportation Improvement Program.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to reduce congestion by increasing capacity, improving connectivity of the highway system, and preserving acceptable facility operation.

1.2.2 Need

The State Route 99 highway within the project limits currently operates at acceptable levels of service during peak traffic hours and will continue to do so through the year 2027 without any improvements. However, by the year 2047, the highway mainline will have insufficient capacity to accommodate the forecasted traffic demand under the No-Build Alternative, and delays would significantly increase.

The existing (2019) level of service for the northbound and southbound lanes is Level of Service D. In the year 2027, the levels of service would be D to E for both the northbound and southbound lanes. Twenty years later, in the year 2047, the level of service would deteriorate to a level of service F for both the northbound and southbound lanes if the highway is still only two lanes in each direction.

The existing annual average daily traffic within the project limits is about 80,500.

In the year 2027, the annual average daily traffic is forecast to be 90,500. In the year 2047, the annual average daily traffic is forecast to be 127,000.

1.3 Project Description

Caltrans proposes to widen State Route 99 in Madera County from just north of Avenue 7 to Avenue 12 (post miles 0.1-8.1). One lane would be built in each direction on the highway median to create a six-lane highway. The existing lanes and shoulders of State Route 99 would be rehabilitated. A concrete median barrier would be installed along with an auxiliary lane at the Avenue 12 northbound off-ramp.

The purpose of the project is to reduce congestion by increasing capacity, improving connectivity of the highway system, and preserving acceptable facility operation.

A future Caltrans project, the Cottonwood Creek Bridge Replacement, is at the northern end of the South Madera 6-Lane project limits at post mile 7.28. Construction of these two projects is expected to start at the same time in spring 2024 and be completed in summer 2027.

Figure 1-1 Project Vicinity Map

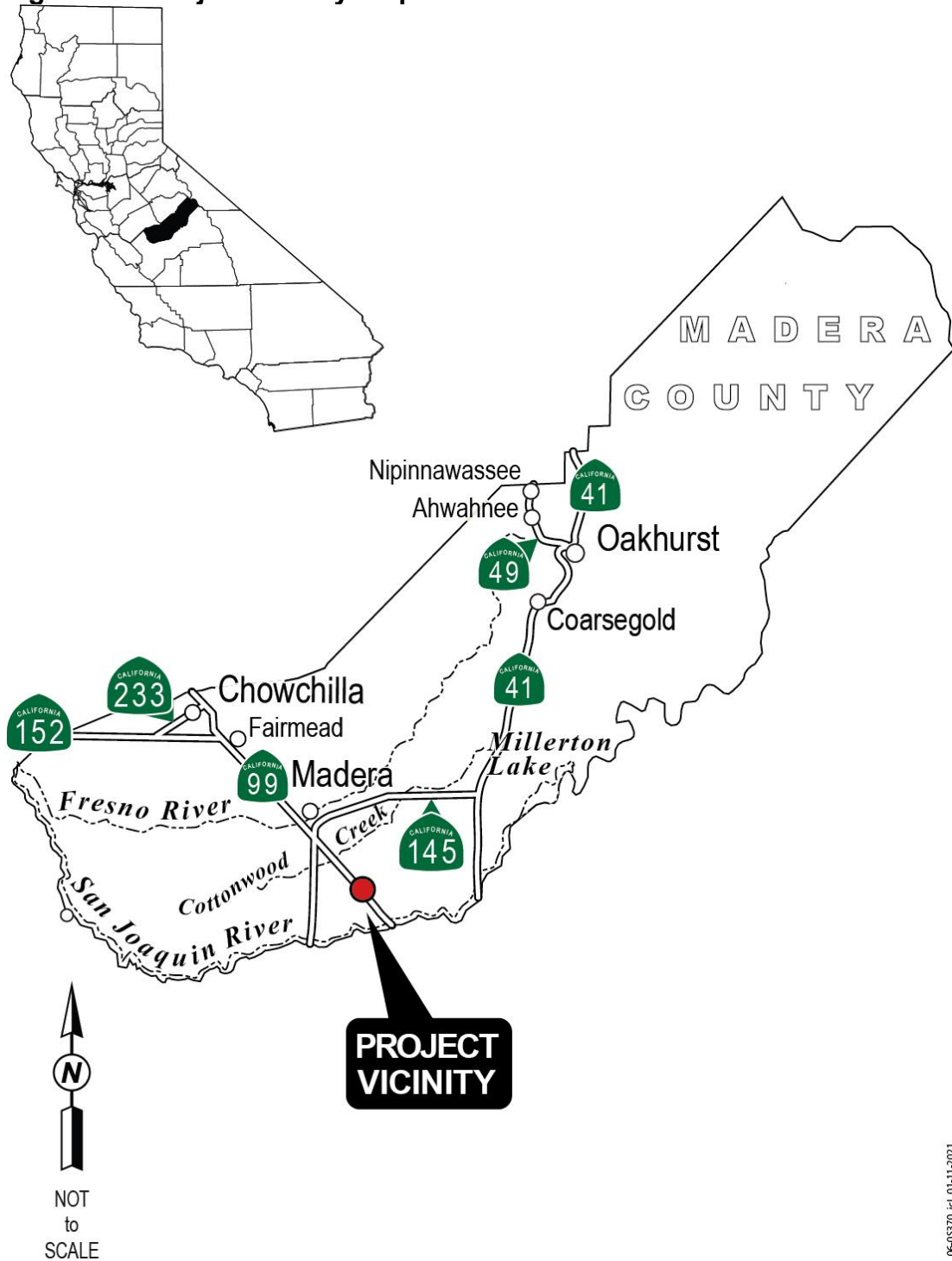
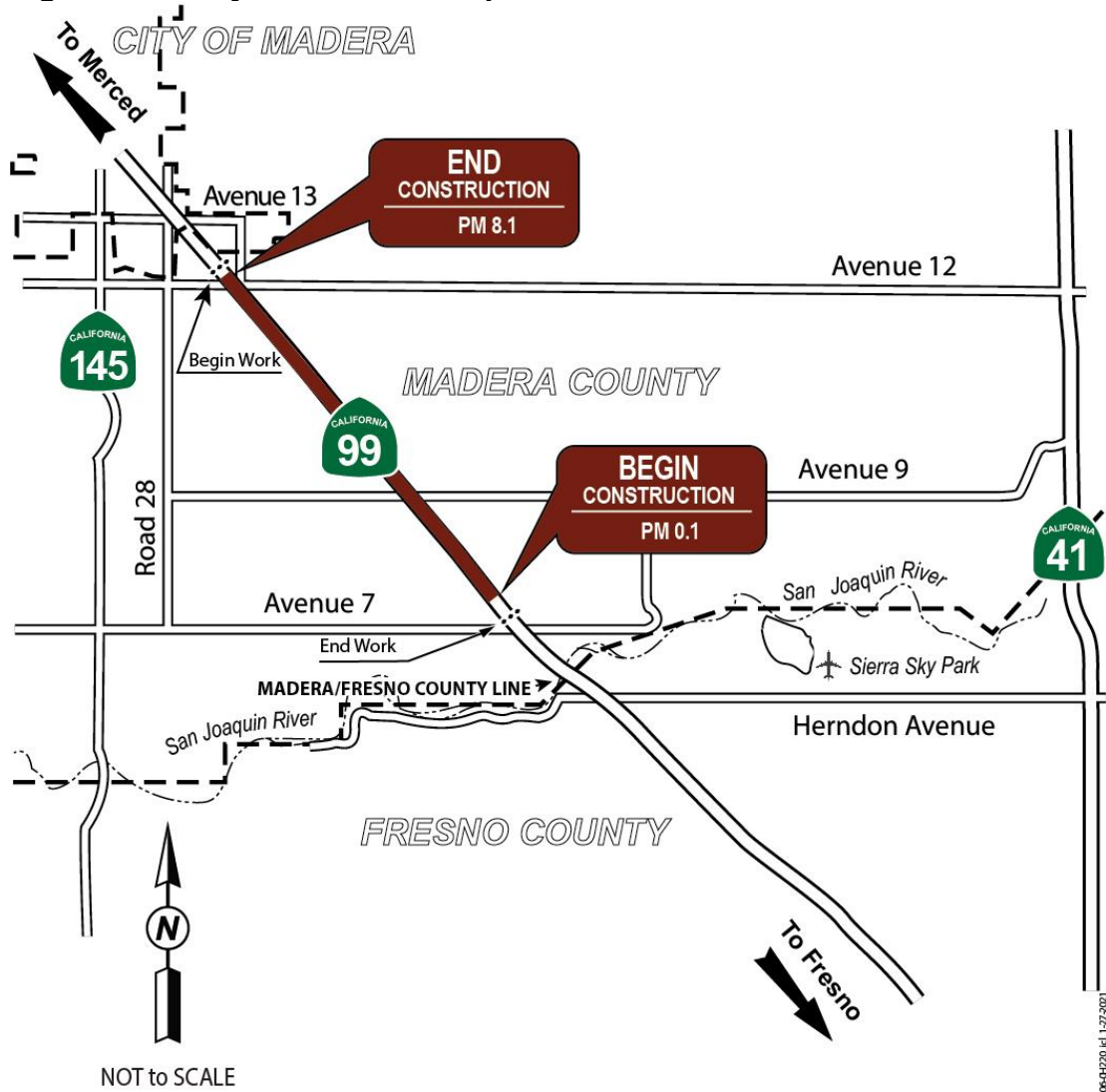


Figure 1-2 Project Location Map



1.4 Project Alternatives

This project contains several 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 proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

1.4.1 Build Alternative

The Build Alternative would convert the existing four-lane highway to a six-lane highway by adding new lanes in the median to accommodate 12-foot lanes and 10-foot shoulders in each direction. Widening in the median would occur from post mile 1.5 to post mile 7.6. From post mile 0.1 to post mile 1.5, State Route 99 already has the width of a six-lane highway but is currently striped as a four-lane highway. The Madera 99 Widening Project between Avenue 12 and Avenue 17 is under construction; it will be built as a six-lane highway but will be striped as a four-lane highway from post mile 7.6 to post mile 8.1. Once the median widening from post mile 1.5 to post mile 7.6 is complete, the entire project limits would be restriped as a six-lane highway.

A concrete median barrier would be installed along with an auxiliary lane at the Avenue 12 northbound off-ramp. A retaining wall would be built at the auxiliary lane location to limit encroachment into the railroad right-of-way. Existing drainage systems would be abandoned or replaced with a combination of cross culverts and longitudinal drainage systems. Stormwater retention basins would be built to accommodate water runoff. Preliminary design plans are shown in Appendix B.

The work would consist of widening the existing outside shoulders four to eight feet to strengthen the existing lanes and preparing the existing shoulder for truck traffic. Lanes would then be restriped to shift traffic away from the median. K-rail would be placed along the length of the project to separate construction in the median from passing traffic. Work within the median would continue with little interruption to the detoured traffic. Work within the median would include removing the median barrier, clearing and grubbing oleanders, soil excavation for placement of travel lanes, and building travel lanes and a concrete median barrier or three beam barrier. K-rail would be removed after the median barrier is installed. Two existing changeable message signs would be relocated 800 feet away from the Avenue 8 overcrossing and overhead. One changeable message sign would be relocated on the northbound side, and the other would be relocated on the southbound side of State Route 99.

Existing inlets in the median would be removed and culverts abandoned as required. To accommodate the additional storage requirements, the existing

side ditches would be changed to optimize drainage water storage capacity within the existing right-of-way.

Project construction is slated to start in the Spring of 2024 and finish in the Summer of 2027.

Construction, which is expected to be done in five stages, would take 320 working days to complete; about 120 nights of work are also expected. Activities would include working on resurfacing outside shoulders under temporary lane closures, building a temporary median detour, setting up K-rails (temporary concrete barriers), shifting K-rails to change temporary traffic control lanes, and removing the temporary median detour.

Total project cost for the Build Alternative, including right-of-way acquisition and roadway work, is estimated to be \$126,860,000.

1.4.2 No-Build (No-Action) Alternative

The No-Build Alternative would maintain the existing facility in its present condition. The No-Build Alternative would not address the deteriorating level of service of the existing facility and would make the already congested highway unable to preserve acceptable facility operation. The No-Build Alternative would not meet the purpose and need of the project.

1.5 Comparison of Alternatives

When alternatives are evaluated, the purpose and need of the project, as well as the locations where environmental impacts could occur, need to be considered.

The Build Alternative would satisfy the purpose and need of the project because it would improve traffic flow, address current and future traffic operational needs, and alleviate congestion. Although the Build Alternative would result in changes to existing conditions, the changes would not be substantial with the incorporation of avoidance, minimization, and mitigation measures. Chapter 2 provides information on the proposed project's potential environmental impacts.

The No-Build Alternative would not satisfy the purpose or need of the project because it would not address the projected increases in traffic volume over time, which would result in longer motorist delays and excessive congestion within the project limits on State Route 99. The No-Build Alternative would not result in any construction or changes to existing conditions. With the No-Build Alternative, longer motorist delays, excessive congestion, increased greenhouse gases, and a reduced level of service within the project limits would be expected.

1.6 Alternatives Considered but Eliminated from Further Discussion

Two other alternatives were considered for this project to address the increased congestion, connectivity of the highway system, and acceptable facility operation.

Build Alternative 2

Build Alternative 2 would have added three new lanes to the west of the existing State Route 99 southbound lanes. An additional 80 feet of right-of-way would have been required to the west to accommodate a median width of 64 feet. After the construction of the new southbound lanes, the existing southbound lanes would have been demolished. The existing northbound lanes would have remained with the addition of a third lane along the west side of the existing travel lanes. Additionally, Build Alternative 2 would have required the construction of up to seven new structures after demolishing the existing structures. Proposed structures would have been built along their existing alignments with longer spans to accommodate the wider roadway, wider median, and higher vertical clearance.

Build Alternative 3

Build Alternative 3 is similar to Build Alternative 2 except that the median width would have been a 42-foot paved median with the acquisition of 60 feet of right-of-way to the west. Up to seven new structures would have been built after demolishing the existing structures. Proposed structures would have been built along their existing alignments with longer spans to accommodate the wider roadway, wider median, and higher vertical clearance.

The Caltrans Project Development Team eliminated Build Alternative 2 and Build Alternative 3 due to excessive cost and concluded that the alignment shift both alternatives proposed is not consistent with similar improvements to State Route 99 to the north and south of this segment. Therefore, the Caltrans Project Development Team decided on Build Alternative 1 with a No-Build Alternative as the viable option to be considered for this project.

1.7 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
San Joaquin Valley Unified Air Pollution Control District	National Emissions Standards for Hazardous Air Pollutants Notification	The contractor would be required to notify the San Joaquin Valley Unified Air Pollution Control District 10 days before construction starts.
California Department of Fish and Wildlife	California Fish and Wildlife 1602 Lake and Streambed Alteration Agreement	Application to be submitted during the project's final design phase.
U.S. Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit	Application to be submitted during the project's final design phase.
Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	Application to be submitted during the project's final design phase.

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

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

- Coastal Zone—The project is not within or near the Coastal Zone. The project is set within an inland valley of California, more than 100 miles from the coast. (Field Review)
- Wild and Scenic River—There are no wild and scenic rivers within the project limits. (Field Review)
- Parks and Recreational Facilities—There are no parks or recreational facilities within the project limits. (Field Review)
- Timberland—No timberland production zones are in the proposed project area. (Madera County Planning Department, 2020)
- Community Character and Cohesion—The project would not change community character and cohesion in the project area.
- Environmental Justice—No minority or low-income populations that would be adversely affected by the proposed project were identified. Therefore, this project is not subject to the provisions of Executive Order 12898. (U.S. Census FactFinder)
- Hydrology and Floodplain—The proposed project crosses two segments within a floodplain. These segments do not make up a significant floodplain encroachment as defined in the Code of Federal Regulations, Title 23, Section 650.105(q). (Supplemental Location Hydraulic Study, 2019)
- Geology, Soils, Seismicity and Topography—No geologic or topographic features were identified within southern Madera County. (National Park Service/Registry of Natural Landmarks website, 2020) No active faults exist within the proposed project area. (California Department of Conservation website, 2020)
- Natural Communities—A California Natural Diversity Database query did not identify any natural communities of special concern with the potential to occur within the project area. So, no potential impacts on natural

communities of special concern are expected, and further discussion is not warranted. (Natural Environment Study-Minimal Impacts, 2020)

- Wetlands and Other Waters—No wetlands were identified within the project area. (Natural Environment Study-Minimal Impacts, 2020)
- Plant Species—Due to the high level of current and historic disturbance and habitat modification, the project area does not support appropriate conditions for any rare or special status plant species, and no further discussion is warranted. (Natural Environment Study-Minimal Impacts, 2020)

2.1 Human Environment

2.1.1 Existing and Future Land Use

This section describes the current and planned land use within the proposed project limits. Land use planning within the project limits is mainly a function of the Madera County General Plan. State law requires seven elements to be addressed in the general plan: land use, circulation, housing, natural resources, noise, open space, and public safety. Land use plans and zoning are the main methods of managing local land use. These mechanisms govern the type and density of development in accordance with the Madera County General Plan.

Affected Environment

The project limits lie in southwest Madera County, just north of the Fresno/Madera County line, about 8 miles south of the City of Madera, and immediately north of the San Joaquin River. The foothills of the Sierra Nevada Mountains sit east of the project limits, and the gently rolling terrain consists mostly of agricultural lands.

Existing Land Use

Within the project limits, most of the area surrounding State Route 99 is designated as rural agriculture or rural commercial. (Madera County General Plan) Roughly 90 percent of the project corridor is currently either open space grazing land or farm fields. The remaining 10 percent of the project corridor is built up and includes commercial and industrial uses and residential areas. There are currently no public schools, institutional facilities, community services or recreational facilities, or parks within or next to the project area. Emergency services are provided to this area by the Madera County Fire Department Station Number 1 (California Department of Forestry and Fire Protection station), at 14225 Road 28, Madera, California, 93638.

Future Land Use

As mentioned above, lands next to the project area are within the jurisdiction of Madera County and designated as rural agriculture or rural commercial.

Land use policies in the Madera County General Plan restrict activities to intensive agriculture or rural commercial activities. Land use activities near the project area are not expected to change in the foreseeable future.

Environmental Consequences

Most of the proposed project would be built within the existing highway right-of-way, with some additional right-of-way needed for stormwater retention basins. The Build Alternative would not directly affect existing homes and businesses along State Route 99.

The Build Alternative would acquire 26.5 acres of right-of-way along the west side of the existing State Route 99. All the land is currently agricultural production and commercial development.

For additional information regarding the conversion of farmland due to the proposed right-of-way needed for the project, such as Williamson Act contracts and soil types, please refer to Section 2.1.3 Farmland. For additional information regarding potentially affected employees and relocation assistance, please refer to Section 2.1.5 Relocations and Real Property Acquisitions.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.1.2 Consistency with State, Regional, and Local Plans and Programs

Affected Environment

Transportation Plans

Transportation plans and programs applicable to this project include the Caltrans State Route 99 Corridor System Management Plan, the Madera County Regional Transportation Plan, and the Madera County Federal Transportation Improvement Program.

Caltrans Plan

The 2030 concept for this segment of State Route 99 is a six-lane highway through Madera County. The Ultimate Transportation Concept is an eight-lane highway through Madera County.

Madera County Plans

The Madera County plan significant to the project study area is the Madera County General Plan.

Environmental Consequences

Transportation Plans

The project is currently included in Madera County's 2019 Regional Transportation Plan as a capacity-increasing project. The project would consist of widening State Route 99 to a six-lane highway from Avenue 7 to Avenue 12. Funding is proposed from the Interregional Improvement Program and Federal Stimulus funds. The project is also listed in the 2019 Madera County Federal Transportation Improvement Program as a four-lane to six-lane improvement from Avenue 7 to Avenue 12, with funding proposed from the Trade Corridor Enhancement Program and Measure T funds. The Build Alternative is consistent with these plans, as amended. The No-Build Alternative would not be consistent with these plans.

Madera County Area Plans

Table 2.1 shows the consistency between the project alternatives and the Madera County area plans.

Table 2.1 Consistency with Local Plans

Policy	Build Alternative	No-Build Alternative
<i>Policy 2.A.12. The County shall provide for improvements to street and highway facilities as necessary to serve new development and to meet the traffic demands of the county.</i>	Consistent —Provides additional lanes to meet the future traffic demands of Madera County.	Not Consistent —Would not make any improvements to State Route 99 to meet the future traffic demands of Madera County.
<i>Policy 2.E.4. The County shall plan for and maintain a roadway system that provides for efficient and safe movement of goods within Madera County and provides for connections between truck and rail movements.</i>	Consistent —Creates a more efficient route for trucks that would reduce conflicts with automobile traffic.	Not Consistent —Would not provide an efficient route for trucks that would reduce conflicts with automobile traffic.
<i>Policy 5.A.1. The County shall maintain agriculturally designated areas for agricultural uses and direct urban uses to designated new growth areas, existing communities, and/or cities.</i>	Consistent —The Build Alternative has been designed to acquire only narrow strips of farmland along the sides of the existing roadway. These acquisitions would not result in the subdivision of agricultural parcels, substantially diminish the size of agricultural parcels, or change the existing use, designation, or zoning of agricultural parcels.	Consistent —No change to existing land use.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.1.3 Farmland

Regulatory Setting

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

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

Affected Environment

Madera County is one of California's largest agricultural producing counties. Important Farmland—farmland classified by the California Department of Conservation's Farmland Mapping and Monitoring Program as prime farmland, farmland of statewide importance, farmland of local importance, and unique farmland—makes up 645,358 acres in Madera County. (U.S. Census of Agriculture 2017) The top commodities are fruits, nuts, berries, milk, and vegetables. Madera County's gross value from agricultural production was \$1,492,587,000 in 2017. (U.S. Census of Agriculture 2017)

Within the project limits, farmland is used mostly as almond orchards and grape vineyards. Five parcels under Williamson Act contracts, or agricultural preserve lands, were identified within the proposed project limits.

NEPA and the provisions of the Farmland Protection Policy Act require that Caltrans examine the effects on farmland before taking or approving any federal action that would result in the conversion of farmland. The Natural Resource Conservation Service-CPA-106 Farmland Conversion Impact Rating for Corridor Type Projects form was submitted to the local Natural Resources Conservation Service office in Madera County requesting a determination on whether the project location has farmland that is subject to the Farmland Protection Policy Act. Results of the Natural Resource Conservation Service-CPA-106 Farmland Conversion Impact Rating for Corridor Type Projects form completed for this project show that both prime farmland and farmland of statewide importance are within the project footprint. The Natural Resources Conservation Service determined that the project would convert about 8 acres of prime farmland and 15 acres of farmland of statewide importance to nonagricultural use.

Environmental Consequences

Research and consultation with the Natural Resources Conservation Service were conducted to evaluate the possible effects of the proposed project on local farmlands. Documents reviewed included the California Department of Conservation Farmland Mapping and Monitoring Program data and aerial photographs. The current Madera County General Plans, zoning ordinances, and maps were also reviewed.

The Natural Resources Conservation Service Farmland Conversion Impact Rating (see Appendix C) was completed in August 2020. This rating

determines the relative value of farmland to be converted by using a formula that weighs farmland classification, soil characteristics, irrigation, acreage, creation of non-farmable land, availability of farm services, and other factors. If the rating is more than 160 points, Caltrans may consider measures that would minimize or mitigate farmland impacts. The Natural Resources Conservation Service Farmland Conversion Impact Rating for this project is 153.

The Farmland Mapping and Monitoring Program designates and tracks “important farmland” in California, including four categories of agricultural land:

- Prime Farmland—Land with the best combination of physical and chemical characteristics for producing agricultural crops.
- Unique Farmland—Land other than prime farmland that has lesser quality soils that is used for production of high-value specialty crops.
- Farmland of Statewide Importance—Land that does not qualify as prime farmland or unique farmland. Land that is currently irrigated, pastureland, or produces nonirrigated crops and is important, as determined by the state.
- Farmland of Local Importance—Land that does not qualify as prime farmland or unique farmland. Land that is currently irrigated, pastureland, or produces nonirrigated crops and is important as determined by the local government.

The Build Alternative would acquire 26.5 acres of right-of-way, of which 23 acres are currently zoned for agricultural use. Eight acres are prime or unique farmland, and 15 acres are statewide or locally important farmland. Table 2.2 shows the farmland amounts that would be converted to transportation use. The Build Alternative would acquire small slivers, or linear strips of land, from each parcel along State Route 99, and does not bisect parcels and allows for continued farming on the parcels.

Table 2.2 Farmland Conversion

Alternative	Total Right-of-Way Needed (Acres)	Total Acres in Corridor	Prime and Unique Farmland (Acres)	Farmland of Statewide and Local Importance (Acres)	Percent of Farmland in Madera County (About 759,000 Acres)	Percent of Farmland in California (About 25.5 Million Acres)	Farmland Conversion Impact Rating
Build Alternative	26.5	883	8	15	0.0097	0.0002	153

Source: Form Natural Resource Conservation Service-CPA-106 (Farmland Conversion Impact Rating for Corridor Type Projects)

The conversion of farmland to transportation use cannot be avoided because farmland surrounds the project corridor, and there is no feasible alternative in this area that would not convert farmland to transportation use.

Williamson Act

Five parcels (see Table 2.3) under a Williamson Act contract or agricultural preserve lands were identified within the proposed project limits. The five parcels are owned by four separate family farms on the west side of State Route 99, where right-of-way would be acquired for the project. These parcels would remain under a Williamson Act contract after Caltrans acquires the needed right-of-way. Of the 23 acres listed in Table 2.2 as prime or unique farmland and farmland of statewide and local importance, 9.49 acres are under a Williamson Act contract and would be acquired from the five parcels.

Table 2.3 Potential Impacts to Williamson Act Parcels

Assessor's Parcel Number	Total Area (Acres)	Build Alternative Acquisition (Acres)
048-190-001	82.96	1.06
048-180-001	48.95	0.235
047-230-014	100.02	6.996
047-230-013	12.98	1.032
047-110-003	75.47	0.167
Total	320.38	9.49

Acreage from Madera County Property Parcel website

Total acreage needed for the Build Alternative from parcels under Williamson Act contracts is about 9.49 acres, including 1.06 acres from an 82.96-acre parcel, 0.235 acre from a 48.95-acre parcel, 6.996 acres from a 100.02-acre parcel, 1.032 acres from a 12.98-acre parcel, and 0.167 acre from a 75.47-acre parcel. The conversion of small slivers, or linear strips, of land to transportation use would not affect the Williamson Act contracts or agricultural preserve status of the remaining parcels because the amount of acreage remaining on the parcels is above the 10-acre minimum required to avoid cancellation of a Williamson Act contract.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.1.4 Growth

Regulatory Setting

The Council on Environmental Quality regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, require evaluation of the potential environmental effects of all proposed

federal activities and programs. This includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The Council on Environmental Quality regulations (40 Code of Federal Regulations 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

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

Affected Environment

A "first-cut screening" was completed for the proposed project. The first-cut screening is the first phase of the evaluation of the project and asks specific questions used to identify potential growth-related impacts that would result from the project.

The first-cut screening analyzed the area bounded by the San Joaquin River on the south and east, Road 28 on the west, and Avenue 12 on the north.

The proposed project would widen State Route 99 through a mostly rural area of Madera County; however, the project area is not remote. The project begins north of the Fresno/Madera County line at post mile 0.1 and ends at post mile 8.1, about 0.5 mile south of the city of Madera. The project proposes to add an additional lane in each direction of State Route 99 to meet the needs of planned growth next to and surrounding the project area.

Environmental Consequences

Caltrans conducted a preliminary analysis to determine whether there would be potential for project-related growth. Caltrans considered the interrelated factors of accessibility, project type, project location, and growth pressure. The screening process also took into consideration the General Plans of Madera County and the City of Madera.

For the following reasons, based on the first-cut screening, no further analysis is required:

The Build Alternative would not change access to State Route 99. The project would add an additional lane in each direction to relieve congestion, eliminate the existing bottleneck, enhance operational efficiency, and improve the level of service. The project would also lead to gap closure and continue the statewide objective of eliminating four-lane segments on State Route 99 in the San Joaquin Valley.

This type of project is consistent with accommodating growth and not influencing growth. The area is within the jurisdiction of Madera County and is an intensive agricultural area. Madera County has strong policies that ensure the continued continuation of intensive agriculture in these areas.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.1.5 Relocations and Real Property Acquisition

Regulatory Setting

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

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix A for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

Caltrans completed a Draft Relocation Impact Report for this project in September 2016 and an updated Right-of-Way Data Sheet in December 2020 to address the project's Build Alternative and right-of-way changes.

Caltrans would need to acquire right-of-way from parcels that are directly next to State Route 99 in the project limits. The parcels are on land that is zoned Agricultural Exclusive and contains vegetation that is suitable for livestock grazing. The land is primarily used for orchards and vineyards.

Partial acquisitions could potentially affect agricultural operations, homes, and businesses if the remaining land or structures are not functional after the project is built. Therefore, proposed partial acquisitions can result in a full acquisition of the property parcel or structures on the parcel.

The project area is mostly rural, with agricultural lands and isolated commercial and residential development.

The various forms of potential residential displacements include single-family homes and multifamily homes. Single-family homes include any stand-alone, detached homes that accommodate a family or household. Multifamily homes have been separated into two categories, with "multifamily homes (four or

more units)” representing apartment buildings or condominiums and “multifamily homes (two or three units)” being duplex or triplex units.

The Draft Relocation Impact Report also grouped the potential nonresidential displacements into four categories—commercial, industrial/manufacturing, nonprofit organizations, and agricultural/farms. Commercial includes retail stores, auto-related services, professional services, gas stations, and similar businesses. Industrial/manufacturing includes warehouses, manufacturing operations, storage units, and similar businesses. The Draft Relocation Impact Report did not identify any nonprofit organizations within the project limits.

Environmental Consequences

The project requires partially acquiring 16 parcels with a total of 26.5 acres; all parcels are located on the southbound lane of State Route 99. The parcels consist of agriculture use, apart from one vacant commercial parcel and two government-owned vacant parcels. The land is a mixture of almond orchards and wine grapes.

The proposed stormwater detention basins are on three separate parcels with a total of 11.834 acres. All proposed stormwater detention basins would be almond orchard partial acquisitions. One property is a grape vineyard and has personal property scattered along the fence bordering State Route 99; relocation assistance would be required to move this personal property. Four outdoor advertising signs are present in the project area and would require relocation. The new right-of-way that would be required from the parcels is shown below in Table 2.4.

Table 2.4 Proposed Right-of-Way Acquisition

Build Alternative: Assessor's Parcel Number	Build Alternative: Right-of-Way (acres)
048-190-002	0.58
048-190-001	1.06
048-180-001	0.235
048-070-016	5.241
048-070-015	0.587
Madera County Road 31 1/2	1.677
048-070-013	1.337
048-070-007	0.182
047-420-021	1.030
047-230-014	6.996
047-230-013	1.032
047-230-001	0.961
047-110-013	4.210
047-110-003	0.167
047-110-021	0.916
Madera County Road 29	0.298

Avoidance, Minimization, and/or Mitigation Measures

Caltrans would assist in the moving process, payments for moving expenses, and counseling in accordance with the Uniform Act and Relocation Assistance Program of 1970 (as amended). This act was created to provide protection and assistance services to people who have properties that are being acquired for transportation projects and those being relocated in the event a displacement is required. Relocation benefits offered under the Uniform Act include assistance in the moving process and payments for moving expenses.

2.1.6 Utilities and Emergency Services

Affected Environment

Caltrans completed a Right-of-Way Data Sheet for the project in December 2020.

Utilities

The following utilities are found within the project corridor: Pacific Gas and Electric Company distribution and transmission poles, underground American Telephone and Telegraph telephone lines, and Pacific Bell (American Telephone and Telegraph) fiber-optic underground lines.

Emergency Services

The closest fire station to the project is Madera County Fire Department Station Number 1, about 4 miles north of the project near the census-designated town of Parksdale. The closest police station to the project is the City of Madera Police Department, about 3.5 miles north of the project in the City of Madera. The closest medical facility to the project is the Madera Community Hospital, about 3 miles north of the project in the City of Madera. Table 2.5 lists the locations of the emergency services in the area and how far they are from the project.

Table 2.5 Emergency Services Near the Project Area

Name	Facility Type	Address	Distance (Miles)
Madera Community Hospital	Hospital	1250 East Almond Avenue, Madera, California, 93637	2.7
Pistoresi Ambulance	Ambulance Service	113 North R Street Madera, California, 93637	4
City of Madera Police Department	Police Station	330 South C Street, Madera, California, 93638	3
Madera County Sheriff's Headquarters	Sheriff Office	2725 Falcon Drive, Madera, California, 93637	7
Madera County Fire Department Station Number 1	Fire Station	14225 Road 28, Madera, California, 93638	3.6

Environmental Consequences

There are eight American Telephone and Telegraph telephone poles, a Pacific Gas and Electric Company gas line, underground American Telephone and Telegraph telephone lines, Pacific Gas and Electric Company distribution and transmission poles, and Pacific Bell (American Telephone and Telegraph) fiber-optic underground lines being evaluated for utility relocation at this time.

Avoidance, Minimization, and/or Mitigation Measures

Detours would be available to lessen any impacts to emergency services. Detours would allow emergency services on State Route 99 to function as they normally would.

2.1.7 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

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

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S.

Department of Transportation regulations (49 Code of Federal Regulations 27) implementing Section 504 of the Rehabilitation Act. (29 U.S. Code 794) The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to Federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

Traffic and Transportation

State Route 99 is one of the main thoroughfares in the Central Valley and takes traffic from its start point south of Bakersfield to its end point east of the City of Red Bluff. State Route 99 has a high percentage of truck traffic and is used by farmers and commercial industries throughout the valley to transport goods to markets. State Route 99 is the most used north-south highway in Madera County. It is used by commuters to get to and from the City of Madera along with being used by interstate and intrastate commuters.

Because of this heavy use, two projects are planned near the project's vicinity. The Madera Widening project, a project to the north from Avenue 12 to Avenue 17 and currently in construction, will widen State Route 99 from a four-lane highway to a six-lane highway. A bridge replacement project also to the north, the proposed Cottonwood Creek Bridge Replacement project, would involve the construction of a six-lane bridge to accommodate the future six-lane facility of both the Madera Widening project and the South Madera 6-Lane project.

State Route 99 in the project area is currently a divided four-lane highway. To the north and south of the project limits, State Route 99 is a six-lane highway. The South Madera 6-Lane project would close the 6.1-mile gap and become a continuous six-lane highway. The posted speed limit in the project area is 70 miles per hour. Pedestrians and bicyclists are prohibited from using State Route 99 and would not be impacted by this project. The nearest interchange is the Avenue 12/Road 29 interchange located at the north end of the project limits.

Residential communities closest to the project are Irrigosa, Parkwood, Parksdale, and Madera. Irrigosa is in the project vicinity and next to the proposed project. Irrigosa is an unincorporated community in Madera County. Irrigosa has not been included in past census counts, so there is no population information for this community. Parkwood is about 0.5-mile northwest of the project. Parkwood is a census-designated town in Madera County. Its population was 2,268 in the 2010 Census, up from 2,119 in 2000.

Traffic Volumes

Traffic volume and quality of traffic flow are used to analyze highway operation and related congestion issues:

- Traffic volumes are represented as annual average daily traffic counts, which are the average number of vehicles that pass a given point within a 24-hour period.
- Quality of traffic flow is represented as Level of Service. Level of Service ranges from A to F. Level of Service “A” indicates free-flowing traffic, while Level of Service “F” indicates gridlock and stop-and-go conditions. Caltrans strives to provide a minimum Level of Service D/E in rural areas.
- A traffic analysis was performed for existing conditions (2019), open-to-traffic year (2027) and design-year conditions (2047).

The State Route 99 segment was analyzed for its Level of Service. Table 2.6 shows the existing traffic conditions and level of service for State Route 99 between Avenue 7 and Avenue 12.

Table 2.6 Existing Traffic Conditions and Level of Service on State Route 99 between Avenue 7 and Avenue 12

Year	Annual Average Daily Traffic (Total)	Annual Average Daily Traffic-Truck (19.23 Percentage)	Morning/Evening Peak Volume	Morning/Evening Peak Speed	Morning/Evening Peak Level of Service
2019	80,500	15,480	14,600/16,600	62/62	D/D

Source: Caltrans Updated Traffic Operational Analysis 2019

Pedestrian and Bicycle Facilities

There are currently no designated pedestrian facilities on State Route 99 including bicycle lanes or sidewalks.

Public Transportation

The Madera County Connection transit system uses State Route 99 to provide service from Downtown Madera to La Vina through its Eastin Arcola-Ripperdan-La Vina route.

Environmental Consequences

Traffic and Transportation

Tables 2.7 and 2.8 show the traffic conditions and level of service with and without the project for the open-to-traffic year (2027) and future conditions (2047).

**Table 2.7 Traffic Conditions and Level of Service on State Route 99
Between Avenue 7 and Avenue 12 No-Build Alternative**

Year	Annual Average Daily Traffic (Total)	Annual Average Daily Traffic- Truck (19.23 Percentage)	Morning/Evening Peak Volume	Morning/Evening Peak Speed	Morning/Evening Peak Level of Service
2027	90,500	17,403	17,000/18,900	62/61	D/E
2047	127,000	24,422	23,800/26,300	53/49	F/F

Source: Caltrans Updated Traffic Operational Analysis 2019

**Table 2.8 Traffic Conditions and Level of Service on State Route 99
Between Avenue 7 and Avenue 12 Build Alternative**

Year	Annual Average Daily Traffic (Total)	Annual Average Daily Traffic- Truck (19.23 Percentage)	Morning/Evening Peak Volume	Morning/Evening Peak Speed	Morning/Evening Peak Level of Service
2027	90,500	17,403	17,000/18,900	64/63	B/C
2047	127,000	24,422	23,800/26,300	62/62	D/D

Source: Caltrans Updated Traffic Operational Analysis 2019

Based on the data presented, without the proposed project, the level of service would worsen to Level of Service F by 2047 for both morning and evening peak hour traffic. Without the proposed project, traffic is expected to be congested and operate with considerable delays.

With the proposed project, there would be an improved level of service for the open-to-traffic year (2027). A decrease in the level of service is expected for future conditions. However, the project would avoid a level of service designation below D in future conditions.

Construction impacts on traffic and transportation would not be substantial. Access to and from State Route 99 would be available during construction and the highway will remain open to traffic during construction.

Pedestrian and Bicycle Facilities

There are currently no designated pedestrian facilities on State Route 99 including bicycle lanes or sidewalks.

Public Transportation

The Madera County Connection transit system uses State Route 99 to provide service from Downtown Madera to La Vina through its Eastin Arcola-Ripperdan-La Vina route.

Avoidance, Minimization, and/or Mitigation Measures

Traffic and Transportation

No mitigation measures are required for impacts to traffic and transportation. During construction, a traffic management plan would be developed to handle local traffic patterns and reduce delays, congestion, and the likelihood of accidents. The traffic management plan would include incident management through the Construction Zone Enhanced Enforcement Program, notifying the public of construction activities via changeable message signs, construction strategies, and the Central Valley Traffic Management Center. The center reduces congestion by monitoring traffic and informing the public via media outlets, such as radio and television.

Pedestrian and Bicycle Facilities

No avoidance, minimization, and/or mitigation measures are required for Pedestrian facilities.

Public Transportation

No avoidance, minimization, and/or mitigation measures are required for public transportation.

2.1.8 Visual/Aesthetics

Regulatory Setting

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

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

California Streets and Highways Code Section 92.3 directs Caltrans to use drought resistant landscaping and recycled water when feasible and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

Affected Environment

A visual impact assessment was completed for the project in December 2020. The visual impact assessment was prepared in accordance with the guidelines in the Federal Highway Administration's Visual Impact Assessment for Highway Projects. (Federal Highway Administration 2015)

Visual Setting

The landscape is characterized by relatively flat terrain throughout the project limits. To the east and west are the Sierra Nevada and coastal mountain ranges. The project site is surrounded by agricultural croplands and commercial and industrial sites that service the agricultural community.

The flat terrain does not limit the viewing distance within the proposed project limits. Occasionally, as the highway profile rises and falls with overpasses and underpasses, the viewing distance varies. Air quality can also affect distant views within the project limits.

The proposed project is not listed as a State Scenic Highway.

Existing Visual Resources

The most notable feature within the project limits is a regional landmark, "Where the Palm Meets the Pine" located at post mile 5.7 in Madera County. There are two trees in the median that symbolize the "center" of California. A Canary Island date palm (*Phoenix canariensis*) symbolizes southern California, and a Deodar Cedar (*Cedrus deodara*) pine tree is symbolic of northern California. The two trees are symbolic of the geographic "center" of the state. While the two trees have been replaced over the years, it is believed that "Where the Palm Meets the Pine" were originally planted in the 1920s. Even though the landmark is not the actual geographic center of California, the trees are well-known and widely recognized as a landmark on State Route 99.

There are mature oleanders in the median throughout the project limits. Within the 8-mile project length, there are 5.2 miles of oleanders in the median. The oleanders in the median are the last of the oleanders in Madera County, south of the City of Madera. The oleanders in the median are a "signature planting" of State Route 99 in the Central Valley as defined by local agencies. The vegetation provides a visual screen from oncoming traffic as well as visually screening nearby land uses.

Oleanders in the median, together with large, towering eucalyptus trees, were once an iconic relic of the State Route 99 corridor. While a small portion of the oleanders remains, the eucalyptus trees are all but gone. There are six remaining eucalyptus trees at the Avenue 9 interchange area and a few more scattered along the project corridor.

Visual Characteristics

The large, expansive agricultural fields provide the strongest sense of visual character in the project corridor. Some crops are permanent crops like orchards and vineyards. This vegetation provides a different visual experience from seasonal crops like corn and cotton. The orchard trees and vineyards provide visual interest through all the seasons of the year. All the row crops provide a strong pattern of parallel lines in the landscape. The overall visual effect is a patchwork of patterns and textures throughout the project corridor.

The residential, industrial, and commercial structures within the project limits provide an inconsistent variety of colors and textures that are typical of a rural agricultural area. The roadway is visually separated by large, mature oleanders in the median. This vegetation creates a strong, noticeable line that is continuous from Avenue 7 to Avenue 12.

“Where the Palm Meets the Pine” landmark trees add to the visual character of the project corridor. As shown in Appendix E, “Where the Palm Meets the Pine” landmark is located in the median about 10 feet away from the inside travel lane. Metal thrie-beam guardrail shields the trees. The trees are a focal point and can be easily identified by passing motorists. The trees add a unique visual element to the rural agricultural setting.

Environmental Consequences

The project would remove 5.2 miles of oleanders in the median. While the removal of the oleanders from the median would be noticeable, the new concrete median barrier to take its place would provide visual continuity with the existing concrete median barrier south of Avenue 7 and north of Avenue 12. The overall visual effect from the loss of vegetation in the median is a transition from a rural highway to an urban highway with a concrete median barrier. In an urban setting, this new urban character would be visually fitting. However, the project is in a rural, agricultural area. So, the net effect is that of building an urban highway in a rural, agricultural environment.

With the loss of the oleanders from the median, there is expected to be an increase in oncoming headlight glare. However, the concrete median barrier being built would be 56 inches high and would provide a visual screen from the oncoming headlight glare. The change from oleanders to concrete in the median would change the color and texture of the visual experience. This change would be heightened by the extent of the change. After project construction, there would be no more oleanders on State Route 99 from the Madera County line to the City of Madera in southern Madera County.

The project would replace “Where the Palm Meets the Pine” landmark. The replacement planting would occur on the southbound side of the highway, south of the existing trees. As a result of relocating the trees from the median the visual scale and the dominance of the trees would be greatly reduced.

The Project Development Team analyzed “Where the Palm Meets the Pine” landmark and explored several design options (see Appendix E) that would allow the landmark to remain in the median.

One option left the landmark undisturbed in its existing location. This option would provide a 14-foot-wide median at the location of the landmark. However, the northbound inside and outside shoulders would be 7 feet wide instead of 10 feet wide, which would require a design exception. The southbound direction would have standard 10-foot-wide shoulders. This option was rejected because of safety concerns with creating a sudden reduction in the shoulder width at the location of the existing trees. This option would also create restricted maintenance access.

The second option to allow the landmark to remain in the median included leaving the northbound lanes in their current alignment and moving the southbound lanes 16 feet to the west, creating a 14-foot-wide, 150-foot-long median. A new palm tree and a new pine tree would then be planted in the median. This option would impact a nearby home and a local road—Golden State Boulevard. Relocating Golden State Boulevard was feasible because it would be relocated on agricultural land. However, this design option was also rejected because of safety concerns similar to those in the first option described above.

The third option included removing the landmark from the median and planting 15 new palm trees and 15 new pine trees on the west side of State Route 99 at 55 feet from the edge of the traveled way for clear recovery. This option would impact a nearby home. However, shifting the new row of trees about 330 feet south of the existing location of the landmark would avoid impacts to the home. This alternative was preferred because of the safety to the traveling public and to maintenance personnel.

As a result of removing the oleanders and relocating “Where the Palm Meets the Pine” landmark the overall change to visual character would be high.

The realignment of irrigation canals and the construction of stormwater drainage basins would require the removal of some orchard trees, which would disrupt the visual pattern of the landscape. Since there are additional orchard trees the loss of these trees is expected to be visually negligible.

No-Build Alternative

Under the No-Build Alternative, the project would not be built, and the project site would remain unaltered. Therefore, there would not be a change in visual quality.

Avoidance, Minimization, and/or Mitigation Measures

This section describes avoidance, minimization, and/or mitigation measures to address specific visual impacts. These avoidance, minimization, and/or

mitigation measures would be designed and implemented with concurrence from the Caltrans District 6 Landscape Architect.

The following avoidance and minimization measures would be incorporated into the project to avoid or minimize visual impacts:

1. Minimize vegetation removal. Remove only vegetation and shrubs required for the construction of the new roadway facilities. Avoid removing vegetation and shrubs for temporary uses such as construction staging areas or temporary stormwater conveyance systems.
2. Where feasible, avoid grading areas where existing vegetation provides screening of nearby properties.

The following mitigation measures would be incorporated into the project to offset visual impacts:

1. “Where the Palm Meets the Pine” would be permanently removed from the median and relocated to the southbound shoulder of State Route 99. To compensate for the visual loss in relocating the landmark trees, a single row of 15 palm trees followed by 15 pine trees would be planted on the southbound side, south of the existing trees.
2. The oleanders in the median would be removed and new oleanders would be planted outside of the roadside a minimum of 55 feet from the edge of the traveled way.

2.1.9 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:

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation. (36 Code of Federal Regulations 800) On January 1, 2014, the First Amended Section 106 Programmatic Agreement among the Federal Highway

Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council on Historic Preservation's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program. (23 U.S. Code 327)

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code 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 Caltrans to inventory state-owned structures in its rights-of-way. Procedures for compliance with California Public Resources Code Section 5024 are outlined in a Memorandum of Understanding between Caltrans 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 will satisfy the requirements of California Public Resources Code Section 5024.

Affected Environment

A Historic Property Survey Report that was prepared in August 2020 summarizes the Archaeological Survey Report and Archaeological Evaluation. A Historic Resource Evaluation Report was prepared in August 2020. Sixteen historic-era properties were identified and formally evaluated.

Cultural resource studies for the project included fieldwork, such as archaeological survey and visual inspection. Identification efforts included record searches of the National Register of Historic Places, California Register of Historical Resources, California Points of Historical Interest, California Historical Resources Information System, National Historic Landmark, California Historical Landmarks, Caltrans Historic Bridge Inventory, Caltrans Cultural Resources Database, and the Southern San Joaquin Valley Information Center at California State University, Bakersfield. The Native American Heritage Commission requested a sacred lands file records search and a Native American contact list.

The Area of Potential Effects was established as the area subject to direct and indirect effects of activities during the project. The Area of Potential Effects for the Build Alternative includes widening the roadway over the Madera Canal (also sometimes called Friant-Madera Canal), widening the shoulders to the standard width of 10 feet, changing/replacing culverts, and raising the road profile. A 160-foot horizontal Area of Potential Effects along the length of the project and a vertical Area of Potential Effects of 6 feet for the culvert work was established for the project.

Archaeological Resources

There are no known prehistoric sites within the Area of Potential Effects. No archaeological resources eligible for the National Register of Historic Places or California Register of Historical Resources have been recorded within the Archaeological Study Area. No archaeological sites were discovered during pedestrian surveys of the Archaeological Survey Coverage Area in 2016 or 2019.

Architectural Resources

Caltrans identified 16 potential historical properties within the Area of Potential Effects and determined that the following properties are not eligible for the National Register of Historic Places. The State Historic Preservation Officer provided concurrence for this determination of eligibility on November 3, 2020, for the South Madera 6-Lane project.

“Where the Palm Meets the Pine” landmark was determined to be exempt from section 106 review because the original trees have been replaced several times over the years. The most recent replacement having occurred in 2007 by the California Department of Transportation.

Caltrans notified the Madera County Historical Society about the project on July 18, 2019. On September 9, 2019, the Madera County Historical Society called Caltrans to inquire about the fate of the Deodar Cedar pine tree and the Canary Island date palm tree in the State Route 99 median. These trees are of interest to the City of Madera and the County of Madera. A Caltrans Project Development Team provided a presentation to the Madera County Historical Society and the County of Madera on the three alternatives being

proposed for the “Where the Palm Meets the Pine” landmark. All parties agreed that the relocation of the landmark to the southbound shoulder would be the best option.

Environmental Consequences

Archaeological Resources

No known prehistoric sites would be impacted within the Area of Potential Effects. No archaeological resources eligible for the National Register of Historic Places or California Register of Historical Resources have been recorded within the Archaeological Study Area. No archaeological sites were discovered during pedestrian surveys of the Archaeological Survey Coverage Area in 2016 or 2019.

Architectural Resources

Caltrans identified 16 potential historical properties within the Area of Potential Effects and determined the properties are not eligible for the National Register of Historic Places. Overall, the project would have no adverse effect on historical properties.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would be incorporated into the project to avoid or minimize cultural impacts.

- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the county coroner should be contacted. If the coroner thinks the remains to be Native American, the coroner will notify the Native American Heritage Commission, who, pursuant to Public Resources Code Section 5097.98, will then notify the Most Likely Descendant. At this time, the person who discovers the remains will contact Richard Putler, Senior Environmental Planner, Central Region Environmental, so that he may work with the Most Likely Descendant on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

No mitigation measures would be required.

2.2 Physical Environment

2.2.1 Water Quality and Stormwater Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

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

The goal of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

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

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

According to the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. [The U.S. Environmental Protection Agency defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall]." In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

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

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards

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

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of stormwater discharges, including Municipal Separate Storm Sewer Systems. A Municipal Separate Storm Sewer Systems is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater.” The State Water Resources Control Board has identified the Department as an owner/operator of a Municipal Separate Storm Sewer System under federal regulations. The Department’s Municipal Separate Storm Sewer System permit covers all Department rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National

Pollutant Discharge Elimination System permits for 5 years, and permit requirements remain active until a new permit has been adopted.

The Department's Municipal Separate Storm Sewer System Permit, Order Number 2012-0011-DWQ (adopted on September 19, 2012, and effective on July 1, 2013), as amended by Order Number 2014-0006-EXEC (effective January 17, 2014), Order Number 2014-0077-DWQ (effective May 20, 2014) and Order Number 2015-0036-EXEC (conformed and effective April 7, 2015), has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges; and
3. The Department's stormwater discharges must meet water quality standards through the implementation of permanent and temporary (construction) Best Management Practices, to the maximum extent practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards.

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

Construction General Permit

Construction General Permit, Order Number 2009-0009-DWQ (adopted on September 2, 2009, and effective on July 1, 2010), as amended by Order Number 2010-0014-DWQ (effective February 14, 2011), and Order Number 2012-0006-DWQ (effective on July 17, 2012). The permit regulates stormwater discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General

Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to the Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop Stormwater Pollution Prevention Plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Level 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the risk level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff potential of hydrogen and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Stormwater Pollution Prevention Plans. In accordance with the Department's Stormwater Management Plans and Standard Specifications, a Water Pollution Control Program is necessary for projects with a Disturbed Soil Area less than 1 acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permit that triggers 401 Certification is a Clean Water Act Section 404 permit issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the U.S. Army Corps of Engineers issues a 404 permit.

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

Affected Environment

Caltrans completed a Water Quality Assessment Report for the project on December 9, 2019.

The project area is in Madera County, just outside of the southeast corner of the City of Madera limits. The San Joaquin River forms the southern and western boundaries of Madera County and is the drainage basin for about 90 percent of Madera County. The San Joaquin River runs about one mile south of the project limits.

This segment of State Route 99 traverses two creeks near the northern end of the project limits, Cottonwood Creek and Little Dry Creek. Cottonwood Creek discharges into an area of southwestern Madera County.

Little Dry Creek traverses the project area south of Cottonwood Creek. The extent of Little Dry Creek crossing beneath State Route 99 is not shown on maps, which indicates that this area is likely the western end portion of the creek's segment that gets periodically flooded and is dry for most of the year.

There are no receiving water bodies within the project limits listed as impaired and threatened, such as stream and river segments or lakes that have been identified and reported to the U.S. Environmental Protection Agency.

No drinking water reservoirs and/or recharge facilities have been identified within the project limits. There are no known Regional Water Quality Control Board special requirements or concerns related to the proposed project.

Currently, all stormwater runoff flows to side storage ditches or to open rangeland or farmland.

The proposed project would result in new impervious surfaces. However, new drainage inlets, drainage ditches, and culverts would be installed to address the increased runoff. Any additional runoff beyond the holding capacity of the proposed drainage system would overflow into Cottonwood Creek, Little Dry Creek, and swales next to State Route 99, allowing groundwater recharge into the underlying aquifer.

Environmental Consequences

The Build Alternative proposes three detention basins to accommodate stormwater runoff generated as a result of the proposed project (see Appendix B Layout Plans L-5, L-6, L-16, L-21, and L-22).

The total Disturbed Soil Area for the Build Alternative is about 76.2 acres. The existing impervious (solid) surface area is 59 acres. The Build Alternative would add a new impervious surface area of 17.2 acres.

Dewatering and active treatment systems are not expected because the project would not affect groundwater.

Construction

The project would not result in a substantial increase in sediment runoff. The project would capture and detain stormwater runoff within Caltrans right-of-way; therefore, the project would not result in sediment loading to any receiving waters. No temporary detention basins are proposed.

Construction activities would include grading, paving, striping, material stockpiling, and storage at staging areas, and installing new drainage ditches and inlets. In-channel work would also occur for the widening of State Route 99 crossing Cottonwood Creek. Hydrology and water quality impacts would primarily be related to vehicle use and maintenance activities along the roadway.

Potential sources of water pollution associated with this project include stormwater runoff containing sediment from soil erosion, petroleum and wear products from motor vehicle operation, accidental spills of hazardous materials during construction activities, and accidental spills during normal roadway operation. Contaminants in stormwater runoff from the road would include sediment, oils and grease, and heavy metals. However, implementing commonly used construction Best Management Practices would minimize potential impacts.

After Construction

The project is expected to cause long-term water quality impacts because of the increased area of impervious surfaces. Detention basins would be used to treat the stormwater runoff from the roadway (impervious surface) after construction is complete. Three detention basins are proposed for the Build Alternative. The detention basins would be designed to detain two 10-year/24-hour storm events. Preliminary locations have been determined but may be revised during the Plans, Specifications, and Estimates phase of the project.

The increase of impervious surface area from widening State Route 99 has the potential to increase stormwater velocity, volume, and potential sediment load being carried into lower elevation areas through culverts and ditches.

New drainage inlet systems are proposed along the highway to capture roadway runoff. An increase from the existing 59 acres to an estimated 76.2 acres of impervious surface area would result from project construction.

The new roadway drainage system is expected to create or change existing ditches and detention basins. The proposed drainage system is expected to be similar to the existing drainage system, with culverts directing runoff to roadside ditches.

Avoidance, Minimization, and/or Mitigation Measures

No measures are required for impacts to water quality because any potentially significant impacts would be prevented by the Best Management Practices in the required Stormwater Pollution Prevention Plan. Those Best Management Practices during construction would include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and shall be maintained until permanent erosion control structures are in place.
- Best Management Practices, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed before starting any clearing or grading activities.

Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):

- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials and procedures for cleaning up and reporting any spills. If necessary, containment berms shall be built to prevent spilled materials from reaching surface water features.
- Equipment and hazardous materials shall be stored a minimum of 50 feet away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 feet away from surface water features or within an adequate fueling containment area.

Post Construction

All disturbed areas would be restored to pre-construction contours with permanent erosion control per requirements of the Construction General Permit.

2.2.2 Paleontology

Regulatory Setting

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

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

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

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

The 23 U.S. Code 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws.

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

Public Resources Code Section 5097.5 states that no person shall knowingly and willfully excavate upon, remove, destroy, injure, or deface any paleontological site situated on public lands (i.e., owned by or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof).

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

In addition, the Madera County General Plan (1995) has established mitigation policies and implementation measures for the protection and preservation of paleontological resources.

Affected Environment

Caltrans completed a Paleontological Identification Report for the project in July 2019 and a Paleontological Evaluation Report/Preliminary Mitigation Plan in November 2020. The reports included information obtained from paleontological database searches, reviews of published journals, and the findings from previous Caltrans paleontological mitigation projects that involved excavation in similar geologic materials within the project area.

The geologic units expected to underlie the project area are the Modesto Formation and the Riverbank Formation. As classified according to Caltrans' guidelines, the Modesto and Riverbank Formations are identified as having a "high potential" to contain scientifically significant nonrenewable paleontological resources.

Due to the widespread presence of these formations throughout the San Joaquin Valley, the Modesto and Riverbank Formations are expected to be present beneath the area of the proposed project.

A search for paleontological records was completed using available databases, published peer-reviewed journals, and paleontological monitoring reports from past Caltrans projects that involved excavations into previously undisturbed portions of the Modesto and Riverbank Formations.

Environmental Consequences

Caltrans has determined that scientifically significant paleontological resources underlying the project area consist of the Quaternary Modesto Formation and the Pleistocene Riverbank Formation. Caltrans has also determined that the proposed project would impact both formations. Excavations extending into the Modesto and Riverbank Formations would impact scientifically significant resources.

Excavation extending more than 1 foot below the ground surface would impact undisturbed sediments of the Modesto Formation. Depending upon the depth of excavation, which is expected to be at least 10 feet, the Riverbank Formation could also be affected. Some of the excavation activities associated with the project would include the construction of the Avenue 12 retaining wall and the construction of stormwater retention basins.

Avoidance, Minimization, and/or Mitigation Measures

Due to the potential to affect scientifically significant nonrenewable paleontological resources, mitigation would be required. A Caltrans-supplied consultant would prepare a Paleontological Mitigation Plan before construction starts. The plan would recommend the measures required to minimize potential impacts to paleontological resources. The mitigation measures would include:

- Identifying and acknowledging construction site safety protocols.
- Conducting paleontological worker environmental awareness training for all earth-moving personnel and supervisors.
- Conducting mitigation field monitoring of excavations into undisturbed sediments of the Modesto and Riverbank Formations. Excavations from 1 foot to 3 feet below ground surface are to be spot-checked. Continuous or full-time monitoring would be required for excavations deeper than 3 feet.

- Establishing a protective 25-foot radius buffer zone around fossil discovery locations.
- Curating salvaged fossils at a receiving museum or academic institution.
- Preparing a Paleontological Mitigation Report following completion of all paleontological monitoring activities, documenting compliance with all mitigation measures.

2.2.3 Hazardous Waste and Materials

Regulatory Setting

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

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

- Community Environmental Response Facilitation Act
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act in the state. California law addresses specific handling, storage,

transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact groundwater and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

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

Affected Environment

Caltrans completed an Initial Site Assessment for the project in May 2019, which included a review of regulatory databases. The Initial Site Assessment identified and evaluated possible hazardous waste sites; it includes the following tasks:

- A review of previous environmental reports about the project site, including the original Initial Site Assessment in July 2015.
- A geologic evaluation regarding naturally occurring asbestos within the project limits.
- A review of government databases of hazardous waste sites.
- A written report summarizing the records search results.

Aerially Deposited Lead

An aerially deposited lead study performed in 2015 for State Route 99 between Avenue 7 and Avenue 12 (post miles 1.7 and 7.5) indicated lead was present.

Asbestos-Containing Materials

A Preliminary Site Investigation was completed in September 2019 to evaluate asbestos-containing materials on structures and surface soils within the project limits for proper handling and disposal.

Cortese List

The Cortese List is a compilation of contaminated and potentially contaminated sites. The Cortese List was reviewed as part of the initial screening for this project. The list, or a property's presence on the list, has a bearing on the local permitting process as well as on compliance with the California Environmental Quality Act. There were three sites in the project area listed on the Cortese List.

Lead-Containing/Lead-Based Paint

A Preliminary Site Investigation was completed in September 2019 to evaluate lead-based paint on structures and surface soils within the project limits for proper handling and disposal.

Environmental Consequences

Aerially Deposited Lead

Results of the northbound shoulder and median samples indicated that lead concentrations were hazardous by California standards—greater than 5 milligrams per liter by Deionized Water Waste Extraction Test and equal to or below 1.5 milligrams per kilogram by Deionized Water Waste Extraction Test or greater than 320 milligrams per kilogram but equal to or less than 1,600 milligrams per kilogram—which means that soils can either be disposed of at a hazardous waste disposal facility or reused onsite under a clean soil cover that is at least 1-foot thick. Samples collected from the southbound shoulder of State Route 99 were classified as nonhazardous soils—provided that at least the top 2 feet of material be removed completely; shallower soils contain hazardous lead concentrations if solely removed).

Aerially deposited lead from the historical use of leaded gasoline, exists along roadways throughout California. If encountered, soil with elevated concentrations of lead as a result of Aerially deposited lead on the State Highway System right-of-way within the limits of the project will 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.

Asbestos-Containing Materials

Asbestos-containing materials may be present in existing buildings and related structures, including concrete box culverts, within the project footprint. San Joaquin Valley Air Pollution Control District regulations require that an asbestos survey be conducted on any building or structure before demolition or modification. The following bridges were evaluated for asbestos.

- Avenue 11 Overcrossing (Bridge Number 41-0061)
- Avenue 9 Overcrossing (Bridge Number 41-0063)
- Avenue 8 Overcrossing (Bridge Number 41-0060)
- Cottonwood Creek Bridge (Bridge Number 41-00651/R/S)

A total of 40 bulk asbestos samples representing 18 material types were collected from these bridges. Chrysotile asbestos was detected at a concentration of 50 percent in samples representing non-friable sheet

packing, which is used as barrier rail shims (totaling about 20 square feet) on all four bridges.

- Little Dry Creek Bridge (Bridge Number 41-0035)

One representative bulk concrete sample was collected and analyzed for Little Dry Creek Bridge. The analytical results did not indicate the presence of asbestos minerals.

Cortese List

The database review resulted in identifying three existing facilities—Britz Fertilizers, Incorporated, Madera Pumps, Incorporated, and Family Mart Number 131—within the project limits (post miles 0.1 to 8.1). All three facilities are on the northwest corner of the project limits, west of State Route 99. No right-of-way would be required from these parcels, and the Build Alternative would not impact these facilities.

Lead-Containing/Lead-Based Paint

Lead-based paint may be present in existing buildings and related structures within the project footprint. The following bridges were evaluated for lead-based paint.

- Avenue 11 Overcrossing (Bridge Number 41-0061)
- Avenue 9 Overcrossing (Bridge Number 41-0063)
- Avenue 8 Overcrossing (Bridge Number 41-0060)
- Cottonwood Creek Bridge (Bridge Number 41-00651/R/S)

Samples were collected from suspected lead-containing paint at the Avenue 8, 9, and 11 overcrossing bridges. Lead concentrations ranged from 16 to 24 milligrams per kilogram. A California Waste Extraction Test reported lead at a concentration of 1.4 milligrams per liter in the sample collected from the Avenue 9 Overcrossing (Bridge Number 41-0063). Undetectable amounts of lead were collected from the Avenue 8 Overcrossing (Bridge Number 41-0060). Cottonwood Creek Bridge did not present painted structural features; therefore, no samples were collected from this location.

The paints investigated would not be classified as California or Federal hazardous materials based on lead concentrations.

- Little Dry Creek Bridge (Bridge Number 41-0035)

On August 15, 2019, Caltrans personnel visually inspected Little Dry Creek Bridge (Bridge Number 41-0035). No paint was seen on the bridge structure, and no sampling occurred.

Other Hazardous Substances or Wastes

Other potential hazardous substances or hazardous wastes in the project area include yellow and white pavement paint, striping and markings that may contain high levels of lead, and treated wood waste on roadside signs and guardrails. These potentially hazardous substances or hazardous wastes in the project area would need to be properly disposed of and handled.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans' Standard Specifications and Nonstandard Special Provisions that pertain to hazardous waste would be provided during the specifications and estimates phase of the project before construction starts.

- Aerial deposited lead located on the northbound shoulder would either be disposed of at a hazardous waste disposal facility or reused onsite under a clean soil cover at least 1-foot thick. Aerial deposited lead located on the southbound shoulder of State Route 99 is classified as nonhazardous soil. This soil can be reused onsite provided that the material come from excavations exceeding 2 feet.
- The contractor would be required to prepare an Asbestos Compliance Plan before the start of construction.
- The contractor would be required to prepare a Lead Compliance Plan before the start of construction.
- Project-specific special provisions and/or nonstandard special provisions would be included in the construction contract to address proper handling and disposal of hazardous waste and to minimize exposure to potential hazards.
- San Joaquin Valley Air Pollution Control District regulations require that an asbestos survey be conducted on any bridge/building before demolition or modification, regardless of the construction date. A written National Emission Standards for Hazardous Air Pollutants notification to the San Joaquin Valley Air Pollution Control District is required no less than 14 days before starting demolition activities whether asbestos is present or not.

2.2.4 Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the main federal law that governs air quality; the California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency and the California Air Resources Board, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards. The National Ambient Air Quality Standards and State Ambient Air Quality Standards have been established for six transportation-related criteria pollutants that have been linked to potential

health concerns: carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter, which is broken down for regulatory purposes into particles of 10 micrometers or smaller and particles of 2.5 micrometers and smaller. In addition, national and state standards exist for lead, and state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

The National Ambient Air Quality Standards and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act. In addition to this environmental analysis, a parallel “conformity” requirement under the Federal Clean Air Act also applies.

Conformity

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

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the National Ambient Air Quality Standards and only for the specific National Ambient Air Quality Standards that are or were violated. The U.S. Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for National Ambient Air Quality Standards and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, Particulate Matter 10 and Particulate Matter 2.5, and in some areas (although not in California), sulfur dioxide. California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except sulfur dioxide, and also has a nonattainment area for lead; however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all

transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plans) and 4 years (for the Federal Transportation Improvement Programs). Regional Transportation Plans and Federal Transportation Improvement Programs conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Federal Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration make the determinations that the Regional Transportation Plans and Federal Transportation Improvement Programs are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plans and/or Federal Transportation Improvement Programs must be modified until conformity is attained. If the design concept and scope and the “open-to-traffic” schedule of a proposed transportation project are the same as described in the Regional Transportation Plans and Federal Transportation Improvement Programs, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming Regional Transportation Plan and Transportation Improvement Program; the project has a design concept and scope that has not changed significantly from those in the Regional Transportation Plans and Transportation Improvement Programs; project analyses have used the latest planning assumptions and Environmental Protection Agency-approved emissions models; and in particulate matter areas, the project complies with any control measures in the State Implementation Plan. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects in carbon monoxide and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

Affected Environment

Caltrans completed an Air Quality Report for the project in November 2020. The project limits used in the November 2020 report and for an air conformity concurrence began at post mile 0.1 and ended at post mile 8.6.

Madera County is in a state nonattainment area for the smallest particulate matter (Particulate Matter 2.5), other particulate matter (Particulate Matter 10), and ozone. It is also in a federal nonattainment area for the 8-hour ozone levels (ozone is considered a regional pollutant) and smallest particulate matter (Particulate Matter 2.5), and in attainment for other particulate matter (Particulate Matter 10). Historical air quality data shows that existing carbon monoxide levels for the project area and the general vicinity do not exceed either the state or federal ambient air quality standards. A project-level hot-spot analysis was required because the project is in a state nonattainment

area for Particulate Matter 2.5 and Particulate Matter 10. Table 2.9 shows the state and federal criteria for air pollutant effects and their sources. A figure showing the Federal and State Ambient Air Quality Standards and the relevant footnotes have been removed from the document and placed in the technical studies.

Table 2.9 State and Federal Criteria Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone	High concentrations irritate the lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds and nitrogen oxides in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Respirable Particulate Matter	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of Particulate Matter 10.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter—a toxic air contaminant—is in the Particulate Matter 2.5 size range. Many toxic and other aerosol and solid compounds are part of Particulate Matter 2.5.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including nitrogen oxides, sulfur oxides, ammonia, and reactive organic gases.
Carbon Monoxide	Carbon monoxide interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. Carbon monoxide also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. Carbon monoxide is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Nitrogen Dioxide	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of stormwater. Part of the nitrogen oxides group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.

Sulfur Dioxide	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, and steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing, and some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel is not used.
Lead	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Visibility-Reducing Particles	Reduces visibility. Produces haze. Note: Not directly related to the Regional Haze Program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class 1" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Sulfate	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes.

Source: Caltrans Air Quality Report, November 2020

Environmental Consequences

Regional Air Quality Conformity

The South Madera 6-Lane project is included in the Madera County Transportation Commission's Year 2018 Regional Transportation Plan/Sustainable Communities Strategy and the Year 2019 cost-constrained Federal Transportation Improvement Program, Formal Amendment (Type 3) Number 21 dated December 14, 2020.

The regional air quality conformity analysis concluded the Madera County Transportation Commission's Year 2018 Regional Transportation Plan/Sustainable Communities Strategy and the Year 2019 cost-constrained Federal Transportation Improvement Program are conforming projects and would have air quality impacts consistent with those identified in the State Implementation Plans for achieving the National Ambient Air Quality Standards.

Particulate Matter Analysis

In particulate matter nonattainment or maintenance areas, if a project is determined to be a project of air quality concern, a hot-spot analysis needs to be conducted under the conformity requirement. In November 2015, the U.S. Environmental Protection Agency released an updated version of Transportation Conformity Guidance for Quantitative Hot-spot Analyses in Particulate Matter 2.5 and Particulate Matter 10 Nonattainment and Maintenance Areas.

The guidance defines a project of air quality concern as:

1. New or expanded highway projects that have a significant number of or a significant increase in diesel vehicles;
2. Projects affecting intersections that are at Level of Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
3. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
4. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
5. Projects in or affecting locations, areas, or categories of sites which are identified in the Particulate Matter 2.5 and Particulate Matter 10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The paved shoulders in the project area should minimize particulate matter (Particulate Matter 10 emissions) and road dust.

It is estimated that the annual average daily traffic count for the year 2047 would be 127,000 vehicles, and truck traffic would be less than 25,000. Table 2.10 shows the annual average daily traffic data provided by Caltrans traffic engineers for the years 2019, 2027, and 2047 for the Build Alternative and No-Build Alternative scenarios.

Table 2.10 Current and Future Traffic Conditions

Year	Annual Average Daily Traffic (Total)	Annual Average Daily Traffic-Truck (19.23 Percentage)
2019 Existing	80,500	15,480
2027 No-Build Alternative	90,500	17,403
2047 No-Build Alternative	127,000	24,422
2027 Build Alternative	90,500	17,403
2047 Build Alternative	127,000	24,422

Source: Caltrans Air Quality Report, November 2020

Particulate Matter 2.5 Hot-Spot Conformity Assessment

The project is in a nonattainment area for Particulate Matter 2.5. Table 2.11 shows the violations of the federal standards for Particulate Matter 2.5 registered over the last 5 years at the Madera monitoring station at 28261 Avenue 14 in Madera, the closest monitoring station to the project.

Table 2.11 Monitoring Station Particulate Matter 2.5 Data

Standard Monitored	2013	2014	2015	2016	2017	2018
Days Greater Than the 24-Hour Standard (Micrograms per Cubic Meter)	Not Available	26	12.1	9	16.7	23.9
Maximum 24-Hour Concentration (Micrograms per Cubic Meter)	Not Available	80.2	62.0	47.7	70.6	80.0

Source: Caltrans Air Quality Report, November 2020

Particulate Matter 10 Hot-Spot Conformity Assessment

The proposed project is in a nonattainment area for Particulate Matter 10. The Madera monitoring station located at 28261 Avenue 14, Madera, California 93638 has registered the following violations (see Table 2.12) of the federal standard in the last 5 years.

Table 2.12 Monitoring Station Particulate Matter 10 Data

Standard Monitored	2013	2014	2015	2016	2017	2018
Days Greater Than the 24-Hour Standard (Micrograms per Cubic Meter)	0	0	0	0	0	Not Available
Maximum 24-Hour Concentration (Micrograms per Cubic Meter)	110.3	92.3	112.0	122.7	149.5	Not Available

Source: Caltrans Air Quality Report, November 2020

Particulate Matter Analysis Conclusion

There is no reason to believe that the project would create a new violation or worsen an existing violation of the Particulate Matter 2.5 and Particulate Matter 10 of the National Ambient Air Quality Standards.

The project was determined not to be a project of air quality concern. Concurrence was received from the Federal Highway Administration and the U.S. Environmental Protection Agency in August 2020 (see Appendix G).

Caltrans has completed this air quality conformity assessment and has determined that the project is not a project of air quality concern.

Ozone Analysis

The project is in a nonattainment area for the federal and state 8-hour ozone levels. Ozone is considered to be a regional pollutant. Currently, there are no project-level analysis tools or approved guidelines for ozone. When projects are listed in an approved Regional Transportation Plan and associated conformity emissions analysis, the projects are considered to be conforming to the State Implementation Plan for ozone.

Mobile Source Air Toxics

Mobile source air toxics are a subset of the 188 air toxics defined by the Clean Air Act. The mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or impurities in oil or gasoline.

Projects that create new travel lanes, relocate lanes, or relocate economic activity closer to homes, schools, businesses, and other populated areas may increase concentrations of mobile source air toxics at those locations compared to a No-Build Alternative.

The Federal Highway Administration developed a tiered approach with three categories for analyzing mobile source air toxics in National Environmental Policy Act documents, depending on specific project circumstances:

1. No analysis for projects with no potential for meaningful mobile source air toxic effects,
2. Qualitative analysis for projects with low potential for mobile source air toxic effects, or
3. Quantitative analysis for projects with higher potential for mobile source air toxic effects.

Caltrans determined that the project falls into the category of a “Project with Low Potential for Mobile Source Air Toxics.” This category includes projects that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions. For projects on an existing alignment, mobile source air toxics are expected to decline because of the new U.S. Environmental Protection Agency engine and fuel standards. Projects that result in increased travel speeds would reduce mobile source air toxics emissions on a per vehicle miles traveled basis.

Generally, this speed benefit may be offset somewhat by increased vehicle miles traveled if the more efficient facility attracts more vehicle trips. However, attracting more vehicle trips is not expected to be a factor because State Route 99 is the major north-south interregional route through the area. There are few crossings of the San Joaquin River between Fresno County and Madera County. The nearest crossing to the east is about 7 miles away on State Route 41. The nearest crossing to the west is on State Route 145, about 8 miles away.

Naturally Occurring Asbestos

Madera County is not among the counties listed as containing serpentine and ultramafic rock. Fresno County has areas of serpentine and ultramafic rock, but the project site does not pass through any of these areas. (Governor’s Office of Planning and Research, October 26, 2000) Therefore, the impact of naturally occurring asbestos during project construction would be minimal to none.

Construction

The project would temporarily generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. The largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors at some homes very close to the right-of-way could probably cause occasional annoyance and complaints. The addition of paved shoulders in the project area would minimize particulate matter (Particulate Matter 10 emissions) during the operation of the project by eliminating the emission of road dust when vehicles pull off of the roadway.

Caltrans’ Standard Specifications that pertain to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans’ Standard Specifications, Section 14-9.02 “Air Pollution Control” and Section 14-9.03 “Dust Control” require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules,

ordinances, and regulations. A construction impact analysis would be performed as the project moves closer to construction. Monitoring and abatement requirements of Caltrans' Standard Specifications and Standard Special Provisions would be followed.

The San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review rule) applies to construction equipment emissions for transportation projects that exceed 2 tons of either Particulate Matter 10 and/or nitrogen oxide air pollutants. Compliance with the rule would ensure that any unexpected impacts are minimized. The construction contractor would be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees. The analysis estimates the construction equipment emissions. The contractor can choose to reduce the emissions by using a construction fleet that is cleaner than the California state average, or if emissions exceed the limits, the contractor can make the payment of fees to the San Joaquin Valley Air Pollution Control District.

Construction activities may also generate a temporary increase in mobile source air toxic emissions; however, these impacts would be temporary. Project construction is expected to generate about 2,829 tons of carbon dioxide during the 320 working days duration.

In general, when project-level assessments render a decision to pursue construction emission minimization measures, there are several technologies and operational practices that contractors can use to help lower short-term mobile source air toxics. Additionally, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users has emphasized a host of diesel retrofit technologies in the law's Congestion Mitigation and Air Quality Improvement Program that are designed to lessen several mobile source air toxics.

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

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required for impacts to air quality. However, several measures can be taken to minimize impacts from both construction-related impacts and operational impacts. Such actions are:

- The addition of paved shoulders in the project area would minimize Particulate Matter 10 emissions by eliminating the emission of road dust when vehicles pull off of the roadway.
- The project would be subject to the San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review rule) that applies to construction equipment emissions for transportation projects that exceed 2

tons of either Particulate Matter 10 and/or nitrogen oxide air pollutants. Compliance with the rule would ensure that any unexpected impacts are minimized. The construction contractor would be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees. The analysis estimates the construction equipment emissions. The contractor can choose to reduce the emissions by using a construction fleet that is cleaner than the California state average, or if emissions exceed the limits, the contractor can make the payment of fees to the San Joaquin Valley Air Pollution Control District.

- Caltrans' Standard Specifications that pertain to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans' Standard Specifications, Section 14-9.02 "Air Pollution Control" and Section 14-9.03 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

Climate Change

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

2.2.5 Noise

Regulatory Setting

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

California Environmental Quality Act

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

please see Chapter 3 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 Code of Federal Regulations 772

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

In Table 2.13 below, undeveloped lands are permitted for activity categories B and C.

Table 2.13 Noise Abatement Criteria

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

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

Figure 2-2 Noise Levels of Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

According to the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 decibels or more) or when the future noise level with the project approaches or exceeds the Noise Abatement Criteria. A noise level is considered to approach the Noise Abatement Criteria if it is within 1 decibel of the Noise Abatement Criteria.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 decibels at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 decibels at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

Affected Environment

A Noise Study Report was completed for the project in February 2016 and revalidated in March 2020. A Noise Abatement Decision Report was completed in December 2020.

A field investigation was conducted to identify land uses that could be subject to traffic noise impacts from the proposed project. Single-family homes and industrial/commercial land uses were identified. The residential properties within the project limits are single-family homes spaced apart in a field/rural setting. The land use for industrial/commercial has no Noise Impact Criteria, and noise levels for this category are reported for informational use only.

As required by Caltrans protocol, noise abatement is considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this noise study focuses primarily on locations with defined outdoor activity areas, such as residential backyards.

This noise study analyzes the locations of 13 receptors based on proximity to State Route 99 within the project limits. Below is a discussion of the receptors within the project limits. See Appendix I for aerial mapping that shows the locations of the receptors and proposed soundwalls.

Receptor 1

Receptor 1 is on the west side of State Route 99 at 7628 Golden State Boulevard and represents a single-family home. Receptor 1 is set back about 350 feet from the edge of the traveled way of the highway. The noise level at this home was modeled because there was no access to the gathering location in the backyard.

Receptor 2

Receptor 2 is on the east side of State Route 99 at 7770 Road 33, Madera, California, 93637 and represents a warehouse. Receptor 2 is set back about 200 feet from the edge of the traveled way of the highway. The noise level at this receptor was modeled because there was no access to the business.

Receptor 3

Receptor 3 is on the west side of State Route 99 at 8177 Road 32, Madera, California, 93637 and represents a cluster of single-family homes (a total of 26 single-family homes). Receptor 3 is set back about 150 feet from the edge of the traveled way of the highway. A field measurement was conducted at this receptor.

Receptor 4

Receptor 4 is on the east side of State Route 99 at 31664 Avenue 9, Madera, California, 93637, and represents an industrial site (E and J Gallo Winery). Receptor 4 is set back about 250 feet from the edge of the traveled way of the highway. The noise level at this location was modeled because there was no access to the business.

Receptor 5

Receptor 5 is on the west side of State Route 99 at 9456 Golden State Boulevard, Madera, California, 93637, and represents a single-family home set back about 150 feet from the edge of the traveled way of the highway. A field measurement was conducted at this receptor.

Receptor 6

Receptor 6 is on the west side of State Route 99 at 9576 Golden State Boulevard, Madera, California, 93637, and represents a cluster of single-family homes (a total of 14 single-family homes) set back about 150 feet from the edge of the traveled way of the highway. Due to the acoustical similarity with Receptor 5, there was no need to get a separate field measurement at this location; the noise level at Receptor 5 would be similar to the noise level at Receptor 6.

Receptor 7

Receptor 7 is on the west side of State Route 99 at 9758 Golden State Boulevard, Madera, California, 93637, and represents a single-family home set back about 150 feet from the edge of the traveled way of the highway. Due to the acoustical similarity with Receptor 5, there was no need to get a separate field measurement at this location; the noise level at Receptor 5 would be similar to the noise level at Receptor 7.

Receptor 8

Receptor 8 is on the west side of State Route 99 at 10597 Road 30, Madera, California, 93637, and represents a single-family home set back about 360 feet from the edge of the traveled way of the highway. A field measurement was conducted at this receptor.

Receptor 9

Receptor 9 is on the west side of State Route 99 at 10696 Road 30, Madera, California, 93637, and represents a single-family home set back about 360 feet from the edge of the traveled way of the highway. The noise level at this home was modeled because there was no access to the gathering location in the backyard.

Receptor 10

Receptor 10 is on the west side of State Route 99 at 10696 Road 30, Madera, California, 93637, and represents a single-family home set back about 450 feet from the edge of the traveled way of the highway. The noise level at this home was modeled because there was no access to the gathering location in the backyard.

Receptor 11

Receptor 11 is on the west side of State Route 99 at 11674 Road 29, Madera, California, 93637, and represents a single-family home set back about 350 feet from the edge of the traveled way of the highway. The noise level at this home was modeled because there was no access to the gathering location in the backyard.

Receptor 12

Receptor 12 is on the west side of State Route 99 at 11856 Road 29, Madera, California, 93637, and represents an industrial site (Britz-Simplot Grower Solutions). Receptor 12 is set back about 450 feet from the edge of the traveled way of the highway. The noise level at this receptor was modeled because there was no access to the business.

Receptor 13

Receptor 13 is on the east side of State Route 99 at 9677 Road 33 1/2, Madera, California, 93637, and represents an industrial site (Specialty Crop Company). Receptor 13 is set back about 350 feet from the edge of the traveled way of the highway. A field measurement was conducted at this receptor.

Environmental Consequences

The project is a Type 1 project as defined by the Federal Highway Administration because it would increase the number of through-traffic lanes, potentially increase the volume or speed of traffic, and would move traffic

closer to receptors. The project would result in noise impacts that require the consideration of noise abatement. Five soundwalls are proposed for the project.

A noise study field investigation was performed on February 9, 2016, and during the highest traffic noise hour (9:00 a.m.). Short-term (10-minute) noise measurements were conducted at four sites to evaluate the existing noise environment. The measured sites are shown in Table 2.14; the data collected is representative of nearby frequent outdoor use areas. Noise measurements were collected between 9:00 a.m. and 10:55 a.m. Traffic volumes were counted during measurements. Measurements were taken when traffic was moving at a free pace (peak hour traffic volumes) that occurred around 9:00 a.m. Long-term monitoring was not done and considered unnecessary to determine the noise peak hour for this project since traffic conditions were suitable for uniform short-term samples of 10 minutes for each collection period. Table 2.14 shows the noise measurement results.

Table 2.14 Short-Term Noise Measurement Results

Receptor Number	Location	Land Use	Noise Level Meter Distance From Right-of-Way (Feet)	Date	Start Time (Morning)	Duration (Minutes)	Measured Decibels
Receptor 3	8177 Road 32, Madera, California, 93637	Residential	40	February 9, 2016	9:00	10	70
Receptor 5	9456 Golden State Boulevard, Madera, California, 93637	Residential	55	February 9, 2016	9:35	10	69
Receptor 8	10597 Road 30, Madera, California, 93637	Residential	338	February 9, 2016	10:00	10	61
Receptor 13	9677 Road 30 1/2, Madera, California, 93637	Commercial	127	February 9, 2016	10:55	10	67

Source: Noise Study Report, February 2016.

Table 2.15 shows the existing noise levels for the identified 13 receptors. The table includes the modeling locations and land use. A map of the noise receptors is provided in Appendix I.

Table 2.15 Existing Noise Levels

Receptor Number	Location or Address	Land Use	Existing Noise Level (Decibels)	Measured or Modeled
Receptor 1	7628 Golden State Boulevard, Madera, California, 93637	Residential	65	Modeled
Receptor 2	7770 Road 33, Madera, California, 93637	Commercial	69	Modeled
Receptor 3	8177 Road 32, Madera, California, 93637	Residential	73	Measured
Receptor 4	31664 Avenue 9, Madera, California, 93637	Commercial	67	Modeled
Receptor 5	9456 Golden State Boulevard, Madera, California, 93637	Residential	72	Measured
Receptor 6	9576 Golden State Boulevard, Madera, California, 93637	Residential	70	Modeled
Receptor 7	9758 Golden State Boulevard, Madera, California, 93637	Residential	72	Modeled
Receptor 8	10597 Road 30, Madera, California, 93637	Residential	64	Measured
Receptor 9	10696 Road 30, Madera, California, 93637	Residential	64	Modeled
Receptor 10	10696 Road 30, Madera, California, 93637	Residential	63	Modeled
Receptor 11	11674 Road 29, Madera, California, 93637	Residential	65	Modeled
Receptor 12	11856 Road 29, Madera, California, 93637	Commercial	63	Modeled

Receptor Number	Location or Address	Land Use	Existing Noise Level (Decibels)	Measured or Modeled
Receptor 13	9677 Road 33 1/2 Madera, California, 93637	Commercial	66	Measured

Source: Noise Study Report, February 2016.

Future Noise Environment and Impacts

A noise study was conducted to determine future traffic noise impacts of the proposed project at frequent outdoor human use areas within the highway project limits. The future worst-case traffic noise impact at frequent outdoor human use areas along the project alignment was modeled for the Build Alternative to determine appropriate abatement measures. This section discusses the future noise environment and feasible noise abatement measures for impacted locations.

The modeling results indicate that predicted traffic noise levels for the design year with project conditions approach or exceed the Noise Abatement Criteria of 67 decibels for land use (residential) and 72 decibels for commercial establishments throughout the study area. Therefore, traffic noise impacts are predicted to occur within the study area. Accordingly, noise abatement must be considered.

Table 2.16 summarizes predicted future noise levels with and without the project and the reasonableness and feasibility of noise abatement.

Table 2.16 Noise Impact Analysis

Receptor	Location	Soundwall Number	Existing Noise Level (Decibels)	Predicted Noise Levels No-Build Alternative (Decibels)	Predicted Noise Levels Build Alternative (Decibels)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with 8-Foot Wall (Decibels)	Predicted Noise Level with 10-Foot Wall (Decibels)	Predicted Noise Level with 12-Foot Wall (Decibels)	Predicted Noise Level with 14-Foot Wall (Decibels)	Predicted Noise Level with 16-Foot Wall (Decibels)	Feasible	Reasonable
Receptor 1	7628 Golden State Boulevard, Madera, California, 93637	Soundwall 1	65	67	67	Yes	65	65	62	61	60	Yes	No
Receptor 2	7770 Road 33, Madera, California, 93637	Not Applicable	69	71	71	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 3	8177 Road 32, Madera, California, 93637	Soundwall 2	73	75	75	Yes	72	70	68	66	65	Yes	No
Receptor 4	31664 Avenue 9, Madera, California, 93637	Not Applicable	67	69	69	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 5	9456 Golden State Boulevard, Madera, California, 93637	Soundwall 3	72	74	74	Yes	71	70	67	65	65	Yes	No
Receptor 6	9576 Golden State Boulevard, Madera, California, 93637	Soundwall 3	70	72	72	Yes	71	70	67	65	65	Yes	No
Receptor 7	9758 Golden State Boulevard, Madera, California, 93637	Soundwall 3	72	74	74	Yes	71	70	67	65	65	Yes	No
Receptor 8	10597 Road 30, Madera, California, 93637	Soundwall 4	64	66	66	Yes	65	65	62	61	60	Yes	No
Receptor 9	10696 Road 30, Madera, California, 93637	Soundwall 4	64	66	66	Yes	65	65	62	61	60	Yes	No
Receptor 10	10696 Road 30, Madera, California, 93637	Not Applicable	63	65	65	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Receptor	Location	Soundwall Number	Existing Noise Level (Decibels)	Predicted Noise Levels No-Build Alternative (Decibels)	Predicted Noise Levels Build Alternative (Decibels)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with 8-Foot Wall (Decibels)	Predicted Noise Level with 10-Foot Wall (Decibels)	Predicted Noise Level with 12-Foot Wall (Decibels)	Predicted Noise Level with 14-Foot Wall (Decibels)	Predicted Noise Level with 16-Foot Wall (Decibels)	Feasible	Reasonable
Receptor 11	11674 Road 29, Madera, California, 93637	Soundwall 5	65	67	67	Yes	66	65	63	62	62	Yes	No
Receptor 12	11856 Road 29, Madera, California, 93637	Not Applicable	63	65	65	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 13	9677 Road 33 1/2 Madera, California, 93637	Not Applicable	66	68	68	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Source: Noise Study Report, February 2016.

Construction Noise

Temporary construction noise impacts would be unavoidable in areas immediately next to the proposed project. Noise from construction activities may intermittently dominate the noise environment in the immediate construction area.

Construction noise varies greatly depending on the construction process, type and condition of equipment used, and the construction site layout. Many of these factors are traditionally left to the contractor's discretion, which makes it difficult to accurately estimate levels of construction noise. Construction noise estimates are approximate because of the lack of specific information available at the time of the assessment.

Construction is expected to take 320 working days to complete; about 120 of those working days would be nightwork. Temporary construction noise impacts would be unavoidable in areas immediately next to the proposed project and would be minimized in residential areas during the evening, nighttime, weekends, and holidays.

Table 2.17 lists the type of construction equipment typically used for similar projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 80 A-weighted decibels to 95 A-weighted decibels at a distance of 50 feet. The noise that construction equipment produces would be reduced over distance at a rate of about 6 decibels per doubling of distance.

Table 2.17 Construction Equipment Noise

Noise Source	50-Foot Maximum Noise Level (Decibels)
Portable Air Compressor	89
Stationary Air Compressor	89
Auger, Drilled Shaft Rig	89
Backhoe	90
Chain Saw	88
Compactor	85
Concrete Mixer (Small Trailer)	68
Concrete Mixer Truck	89
Concrete Pump Trailer	84
Concrete Vibrator	81
Crane, Derrick	90
Mobile Crane	85
Dozer (Bulldozer)	90
Excavator	92
Forklift	86
Front End Loader	90
Generator	87
Gradall	85
Grader	89
Grinder	82
Impact Wrench	85
Jackhammer	88
Paver	92
Pavement Breaker	85
Pneumatic Tool	88
Pump	80
Roller	83
Sand Blaster	87
Electric Saw	80
Scraper	91
Shovel	90
Tamper	88
Tractor	90
Trucks (Under Load)	95
Water Truck	94
Other Equipment with Diesel	88

Certain construction activities could cause intermittent localized concern from vibration in the project area. During certain construction phases, processes such as earth-moving with bulldozers, the use of vibratory compaction rollers, demolitions, or pavement braking may cause construction-related vibration impacts such as human annoyance or, in some cases, building damages. The following measures could be used to minimize potential impacts from construction vibration:

- Restrict the hours of vibration-intensive equipment or activities such as vibratory rollers so that impacts to residents are minimal (e.g., weekdays during daytime hours only when as many residents as possible are away from home).

- The owner of a building close enough to a construction vibration source that could potentially damage that structure due to vibration, would be entitled to a pre-construction building inspection to document the pre-construction condition of that structure.
- Conduct vibration monitoring during vibration-intensive activities.

Avoidance, Minimization, and/or Noise Abatement Measures

The Noise Abatement Decision Report analyzed noise barriers with heights ranging from 8 feet to 16 feet to determine feasible noise abatement. Soundwalls are considered feasible when they provide a noise reduction of at least 5 decibels. The Noise Reduction Design Goal, which is one measure in determining whether a soundwall is reasonable, is achieved when a noise barrier is predicted to provide a noise reduction of at least 7 decibels at one or more benefitted receptors. Other considerations include topography, access requirements, other noise sources, and safety considerations.

Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance and the cost per benefitted home. From a cost perspective, the estimated cost of the noise barrier should be equal to or less than the total cost allowance calculated for the noise barrier to be considered reasonable. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications.

The following is a discussion of noise abatement considered for each area where traffic noise impacts are predicted. Table 2.18 summarizes key information used in determining noise abatement decisions regarding noise barrier construction for the proposed project.

Table 2.18 Noise Barrier Evaluation

Barrier Number	Location Description	Noise Barrier Height (Feet)	Number of Benefitted Homes	Total Reasonable Allowance	Estimated Cost of Soundwall	Acoustical Design Goal Met	Cost Less Than Allowance?
Soundwall 1	Along the right-of-way on the west side of State Route 99 between the Avenue 7 overcrossing and Avenue 8 overcrossing.	16	1	\$107,000	\$1,270,000	Yes	No
Soundwall 2	Along the right-of-way on the west side of State Route 99 between the Avenue 8 overcrossing and Avenue 9 overcrossing.	12	13	\$1,391,000	\$1,540,000	Yes	No
Soundwall 3	Along the right-of-way on the west side of State Route 99 between the Madera Irrigation canal and Avenue 10 overcrossing.	12	16	\$1,712,000	\$2,850,000	Yes	No
Soundwall 4	Along the right-of-way on the west side of State Route 99 between Avenue 10 1/2 and Avenue 11.	18	2	\$214,000	\$1,440,000	Yes	No

Barrier Number	Location Description	Noise Barrier Height (Feet)	Number of Benefitted Homes	Total Reasonable Allowance	Estimated Cost of Soundwall	Acoustical Design Goal Met	Cost Less Than Allowance?
Soundwall 5	Along the right-of-way on the west side of State Route 99 between Road 29 south of the Cottonwood Creek Bridge and the southbound segment of Cottonwood Creek Bridge	16	1	\$107,000	\$840,000	No	No

Source: Noise Abatement Decision Report, 2020.

Soundwall 1

Receptor 1 at 7628 Golden State Boulevard, Madera, California, 93637 consists of the following receptor category: one single-family home. The predicted noise levels for the design year with the project at this represented receptor is 67 decibels. A 16-foot noise barrier along the right-of-way on the west side of State Route 99 is expected to reduce traffic noise by 5 decibels or more for one home. Soundwall 1 would start along the right-of-way on the west side of State Route 99 and extend north for an approximate length of 1,565 feet to cover the single-family home. The cost allowance for this soundwall is calculated at \$107,000 based on a cost allowance of \$107,000 per benefitted receptor. The estimated cost of the soundwall is \$1,270,000, exceeding the cost allowance. Therefore, this soundwall is not reasonable.

Soundwall 2

Receptor 3 at 8177 Road 32, Madera, California, 93637 consists of the following receptor category: 31 single-family homes. The predicted noise levels for the design year with the project at this receptor is 75 decibels. Soundwall 2 is proposed along the edge of the shoulder on the west side of State Route 99 and is expected to provide 7 decibels of traffic noise reduction at most locations with a 12-foot noise barrier. The noise barrier would start along the right-of-way on the west side of State Route 99 and extend north for an approximate length of 1,894 feet to cover the single-family homes. The soundwall would provide noise attenuation for 13 single-family homes. The total cost allowance for the benefitted homes is \$1,391,000 based on a cost allowance of \$107,000 per benefitted receptor. The cost of the soundwall is estimated at \$1,540,000 and is more than the cost allowance. Therefore, this soundwall is not considered reasonable.

Soundwall 3

Receptors 5, 6, and 7 at 9576 Golden State Boulevard, Madera, California, 93637 consist of the following receptor category: 16 single-family homes. The predicted noise levels for the design year with the project at the receptors are 74 decibels, 72 decibels, and 74 decibels, respectively. Soundwall 3 is proposed along the edge of the shoulder on the west side of State Route 99 and is expected to provide 7 decibels of traffic noise reduction at most locations with a 12-foot noise barrier. The noise barrier would start along the right-of-way on the west side of State Route 99 and extend north for an approximate length of 3,821 feet to cover the single-family homes. The soundwall would provide noise attenuation for 16 single-family homes. The total cost allowance for the benefitted homes is \$1,712,000 based on a cost allowance of \$107,000 per benefitted receptor. The cost of the soundwall is estimated at \$2,850,000 and is more than the cost allowance. Therefore, this soundwall is not reasonable.

Soundwall 4

Receptor 8 at 10597 Road 30, Madera, California, 93637 and Receptor 9 at 10696 Road 30, Madera, California, 93637 consists of the following receptor category: two single-family homes. The predicted noise levels for the design year with the project at the receptors are 66 decibels. An 18-foot noise barrier along the right-of-way on the west side of State Route 99 is expected to provide 5 decibels or more of traffic noise reduction for two homes. Soundwall 4 would start along the right-of-way on the west side of State Route 99 and extend north for an approximate length of 2,640 feet to cover the single-family homes. The total cost allowance for the benefitted homes is \$214,000 based on a cost allowance of \$107,000 per benefitted receptor. The cost of the soundwall is estimated at \$1,440,000 and is more than the cost allowance. Therefore, this soundwall is not reasonable.

Soundwall 5

Receptor 11 at 11674 Road 29, Madera, California, 93637 consists of the following receptor category: one single-family home. The predicted noise levels for the design year with the project at this receptor is 67 A-weighted decibels. A 16-foot noise barrier along the right-of-way on the west side of State Route 99 is expected to reduce traffic noise by 5 decibels or more for one home. Soundwall 5 would start along the right-of-way on the west side of State Route 99 and extend north for an approximate length of 1,159 feet to cover the single-family home. The cost allowance for this soundwall is calculated at \$107,000 based on a cost allowance of \$107,000 per benefitted receptor. The estimated cost of the soundwall is \$840,000, exceeding the cost allowance. Therefore, this soundwall is not reasonable.

Based on the studies completed to date, Caltrans does not intend to incorporate noise abatement in the form of soundwalls for the proposed project. If during final design, conditions have substantially changed, noise

abatement may be necessary. The final decision on noise abatement would be made upon completion of the project design and the public involvement process.

Construction Noise

The following control measures would be implemented to minimize noise disturbances at sensitive areas during construction:

- All equipment shall have sound-control devices no less effective than those provided on the original equipment. Each internal combustion engine used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine should be operated on the job site without an appropriate muffler.
- Construction methods or equipment that will provide the lowest level of noise impact should be used.
- Idling equipment shall be turned off.
- Truck loading, unloading, and hauling operations shall be restricted so that noise and vibration are kept to a minimum through residential neighborhoods to the greatest possible extent.
- Temporary noise barriers would be used and relocated, as needed, to protect sensitive receptors against excessive noise from construction activities involving large equipment and by small items such as compressors, generators, pneumatic tools, and jackhammers. The decision to use temporary noise barriers would be made during the construction phase of the project based upon the type of work being performed and the proximity to sensitive receptors.
- Newer equipment with improved noise muffling shall be used, and all equipment items shall have the manufacturers' recommended noise abatement measures (such as mufflers, engine covers, and engine vibration isolators) intact and operational. All construction equipment shall be inspected at periodic intervals to ensure proper maintenance and presence of noise-control devices (such as mufflers and shrouding).
- Construction activities shall be minimized near residential areas during the evening, nighttime, weekend, and holiday periods. Noise impacts are typically minimized when construction activities are performed during daytime hours. However, nighttime construction may be desirable (such as in commercial areas where businesses may be disrupted during daytime hours) or necessary to avoid major traffic disruption. Coordination with the city or county shall occur before construction can be performed in noise-sensitive areas between 9:00 p.m. and 6:00 a.m.
- The contractor would select construction laydown or staging areas, which should be in industrially zoned districts. If industrially zoned areas are not

available, commercially zoned areas should be used, or locations that are at least 100 feet from any noise-sensitive land use (such as homes, hotels, and motels).

- Contractor shall prepare a Noise and Vibration Monitoring and Mitigation Plan by a qualified acoustical engineer and submit it for approval. The plan must outline noise and vibration monitoring procedures at predetermined noise and vibration sensitive sites and historic properties.
- Restrict the hours of vibration-intensive equipment or activities such as vibratory rollers so that impacts to residents are minimal (e.g., weekdays during daytime hours only when as many residents as possible are away from home).
- The owner of a building close enough to a construction vibration source that could potentially damage that structure due to vibration, would be entitled to a pre-construction building inspection to document the pre-construction condition of that structure.
- Conduct vibration monitoring during vibration-intensive activities.

The contractor would be required to adhere to the following administrative noise control measures:

- Once details of the construction activities become available, the contractor shall work with local authorities to develop an acceptable approach to minimize interference with the business and residential communities, traffic disruptions, and the total duration of the construction.
- Good public relations shall be maintained with the community to minimize objections to unavoidable construction impacts. Frequent activity updates of all construction activities shall be provided. A construction noise monitoring program to track sound levels and limit the impacts shall be implemented.
- In case of construction noise complaints by the public, the Caltrans Resident Engineer shall coordinate with the construction manager, and the specific noise-producing activity may be changed, altered, or temporarily suspended, if necessary.

2.3 Biological Environment

2.3.1 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this

act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take Statement or a Letter of Concurrence. Section 3 of Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Department of Fish and Wildlife species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the U.S., by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

A Natural Environment Study (Minimal Impacts) was completed for this project on January 29, 2020.

A list of federally endangered or threatened species and critical habitat(s) that may be affected by the proposed project was first requested from the U.S. Fish and Wildlife Service on December 23, 2019, (see Appendix J) and has been updated regularly throughout the project studies. Caltrans Federal Endangered Species Act Determinations are listed in Appendix K. Based on in-office research (California Native Plant Society, the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service) and field surveys, Caltrans biologists determined that there were potentially two animal species listed as federally or state threatened or endangered that may be affected by the proposed project. Of these two species, only the Swainson's hawk has been seen during biological surveys to date; however, potentially suitable habitat for the California tiger salamander may be present within the project footprint.

California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is listed as a federally and state threatened species. The Central Valley population is found below about 1,500 feet in elevation. Long-term habitat loss due to land conversion and fragmentation of existing habitat continues to threaten the survival of the California tiger salamander. The species is found in annual grasslands, foothills, oak savanna, and the edges of mixed woodland; it spends most of its life underground in ground squirrel burrows or gopher burrows. California tiger salamanders appear after rainfall and use vernal pools for breeding.

No California tiger salamanders were seen during biological surveys conducted in 2019. The nearest occurrences were 2 miles to the east of the project limits. Immediately east of and running parallel to State Route 99 are train tracks that act as a natural barrier to dispersal for California tiger salamanders. As a result, there are no California tiger salamander occurrences west of said train tracks. A reconnaissance survey was conducted for California tiger salamanders during migration season, and no upland habitat or temporary aquatic habitat was seen. There were no occurrences of pooling and no sign of small mammal burrows that could serve as burrowing habitat for California tiger salamanders.

Swainson's Hawk

Swainson's hawks are broad-winged hawks between 48 and 56 centimeters in length, with females slightly larger than males. Males and females have similar plumage. Swainson's hawks are polymorphic with pale, light, and intermediate morph plumage ranging from dark to light or rufous in color. Most Swainson's hawks have a sharp contrast between the wing linings and

flight feathers. However, some of the darkest Swainson's hawks do not have this distinction.

The Swainson's hawk (*Buteo swainsoni*) is listed as a California state-threatened species. Swainson's hawks breed or migrate in the Central Valley, with about 95 percent of Swainson's hawk habitat occurring in the Central Valley. The species inhabits grasslands, alfalfa fields, and livestock pastures where it forages on mice, gophers, ground squirrels, rabbits, large arthropods, amphibians, reptiles, birds, and occasionally fish. Swainson's hawks soar at various heights to search for prey; they usually catch insects and bats in flight or invertebrate prey on the ground.

Swainson's hawks are well-documented in the project area. Numerous records of Swainson's hawks were identified within a 10-mile radius of the Biological Study Area, though within the project area, there was only one such occurrence, dated 2016. This occurrence was an active nest on the State Route 99 and Avenue 12 interchange. Two mature Swainson's hawks were seen in the nest and actively foraging in the area.

Suitable foraging habitat is present throughout the Biological Study Area as well as suitable nesting habitat.

Environmental Consequences

California Tiger Salamander

No California tiger salamanders were seen during biological surveys conducted in 2019. Because work would occur in the median of State Route 99, the amount of ground disturbance associated with the proposed project would be minimal. The only marginal habitat for California tiger salamanders that exists near the project area is agricultural fields to the east, which could potentially serve as dispersal habitat if California tiger salamanders were present. This would still be the case even though the railroad immediately to the east of the project area serves as a barrier of entry into the project area. The farthest extent of work on northbound State Route 99 is the existing shoulder within a Caltrans right-of-way, where no potential for California tiger salamanders exists. Work on southbound State Route 99 includes the existing shoulder and extends to the newly acquired right-of-way that is currently made up of intensive agriculture; this includes three proposed detention basins that would be built in previously disturbed areas. Therefore, no impacts on California tiger salamanders are expected with the implementation of avoidance and minimization measures.

Swainson's Hawk

Surveys of the project area yielded no observations. The project area contains suitable nest trees for Swainson's hawks, but there is no tree removal associated with the proposed project. If Swainson's hawks were to enter the project area, noise or disturbance from construction activities would

not impact the species more than the current disturbances on State Route 99 and the nearby train tracks. Therefore, no impacts on Swainson's hawks are expected with the implementation of avoidance and minimization measures.

Avoidance, Minimization, and/or Mitigation Measures

California Tiger Salamander

For work conducted during the California tiger salamander migration season (November 1 to March 31), a qualified biologist would survey active work areas (including access roads) in the morning, following measurable precipitation that measures less than 0.25 inch. Construction may not start until a biologist has confirmed that no California tiger salamanders are in the work area.

Before any ground disturbance, the contractor, all employees of the contractor, subcontractors, and subcontractors' employees would attend an employee education program conducted by a Caltrans biologist or other approved biologist. The program would consist of a brief presentation on California tiger salamanders, legislative protection, and measures to avoid impacts to the species during project implementation.

Swainson's Hawk

According to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (May 2000), qualified biologists would complete protocol-level pre-construction surveys during the nesting season (February 1 to September 30). The biologists would complete the surveys before groundbreaking activities to ensure no nesting Swainson's hawks would be affected if construction is to occur during the nesting season.

If construction occurs during the nesting season—February 1 to September 30—Swainson's hawk pre-construction surveys shall be conducted within 30 days before construction to determine if Swainson's hawks are nesting within 0.5 mile of the project area. If Swainson's hawks are seen nesting within 0.5 mile of the project area, a 600-foot radius no-work buffer would be designated by an ESA fence around the nest tree wherever the no-work buffer may overlap the project construction limits. A qualified biologist shall monitor the nest tree during construction activities in proximity to the nest until the birds have fledged.

A special provision for migratory birds would be included to ensure that no potential nesting migratory birds are affected during construction activities.

Removing any trees within the project area should be done outside of the nesting season; however, if a tree within the project area needs to be removed during the nesting season, a qualified biologist would inspect the tree before the removal to ensure that no nests are present.

Before any ground disturbance, the contractor, all employees of the contractor, subcontractors, and subcontractors' employees would attend an employee education program conducted by a Caltrans biologist or other approved biologist. The program would consist of a brief presentation on Swainson's hawks, legislative protection, and measures to avoid impacts to the species during project implementation.

With the above avoidance and minimization efforts, the proposed project is not expected to impact Swainson's hawks.

Chapter 3 CEQA Evaluation

3.1 Determining Significance Under CEQA

The proposed project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the National Environmental Policy Act (known as NEPA) and the California Environmental Quality Act (known as CEQA). The Federal Highway Administration's responsibilities for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 (23 U.S. Code 327) and the Memorandum of Understanding dated December 23, 2016, and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under NEPA and CEQA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, will be required. NEPA requires that an Environmental Impact Statement be prepared when the proposed federal action (the project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental document.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an Environmental Impact Report. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Potentially Significant 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 will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. 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 Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

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—The project would not have a substantial adverse effect on a scenic vista. (Visual Impact Assessment, 2020)

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

No Impact—The project would not substantially damage scenic resources within a state scenic highway. (Visual Impact Assessment, 2020)

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 with Mitigation Incorporated—The project would have a high impact on the existing visual character of the site and its surroundings. “Where the Palm Meets the Pine” landmark would be permanently removed from the median and relocated to the southbound shoulder of State Route 99. To compensate for the visual loss in relocating the landmark trees, a single row of 15 palm trees followed by 15 pine trees would be planted on the southbound shoulder of State Route 99 about 330 feet south of the existing trees. The oleanders in the median would be replaced and planted on the outside roadsides, a minimum of 55 feet from the edge of the traveled way. (Visual Impact Assessment, 2020)

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—The project would not create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. The project would have a low impact on the creation of a new source of light or glare.

The new concrete median barrier would provide a visual screen from the oncoming headlight glare. The 56-inch-high concrete barrier would avoid the impacts of oncoming headlight glare. (Visual Impact Assessment, 2020)

3.2.2 Agriculture and Forest Resources

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 nonagricultural use?

Less Than Significant Impact—The project would convert about 8 acres of prime farmland and 15 acres of farmland of statewide importance to nonagricultural use. This is about 0.0097 percent of the total important farmland that is subject to the Farmland Protection Policy Act in Madera County and is negligible when compared to the available farmland in the area.

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

Less Than Significant Impact—The project would not conflict with existing zoning for agricultural use or a Williamson Act contract. The existing zoning and Williamson Act contracts would remain in place with the project. A letter would be sent to the Department of Conservation as notification that Caltrans proposes to acquire land that is under several Williamson Act contracts in accordance with Government Code Section 51291(b).

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—There is no forest land or timberland in the project area. The project would not conflict with existing zoning or cause rezoning of forest land.

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

No Impact—There is no forest land or timberland in the project area. The project would not result in the loss of forest land or conversion of forest land to non-forest use.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to nonagricultural use or conversion of forest land to non-forest use?

No Impact—There are no other changes expected to farmland or forest land. The project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to nonagricultural use or conversion of forest land to non-forest use

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:

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

No Impact—The project would not conflict with or obstruct the implementation of an air quality plan.

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?

Less Than Significant Impact—As discussed in the Air Quality section in Chapter 2, the South Madera 6-Lane project is included in the Madera County Transportation Commission's Year 2019 Regional Transportation Plan/Sustainable Communities Strategy Draft Amendment Number 1, 2019, and the Year 2019 cost-constrained Federal Transportation Improvement Program. The regional air quality conformity analysis concluded the Madera County Transportation Commission's Year 2018 Regional Transportation Plan/Sustainable Communities Strategy and the Year 2019 cost-constrained Federal Transportation Improvement Program are conforming projects and would have air quality impacts consistent with those identified in the State Implementation Plans for achieving the National Ambient Air Quality Standards. The project would not create a new violation or worsen an existing violation of the Particulate Matter 2.5 and Particulate Matter 10 of the National Ambient Air Quality Standards.

The project is in a nonattainment area for the federal and state 8-hour ozone levels. Ozone is considered to be a regional pollutant. The project is in attainment for the federal and state carbon monoxide standards. Caltrans determined the project falls into the category of a "Project with Low Potential for Mobile Source Air Toxics." No mitigation is required for impacts to air quality. However, several measures can be taken to minimize construction-related impacts and operational impacts. These measures can be found in Chapter 2.

The project was determined not to be a project of air quality concern. Concurrence was received from the Federal Highway Administration and the U.S. Environmental Protection Agency in August 2020. Caltrans has determined that the project is not a project of air quality concern. The U.S. Environmental Protection Agency and the Federal Highway Administration concurred with Caltrans' determination in August 2019 (see Appendix G).

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact—As discussed in the Air Quality section in Chapter 2, the project was determined not to be a project of air quality concern. Concurrence was received from the Federal Highway Administration and the U.S. Environmental Protection Agency in August 2020. Caltrans has

determined that the project is not a project of air quality concern. The U.S. Environmental Protection Agency and the Federal Highway Administration concurred with Caltrans' determination in August 2019 (see Appendix G).

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

No Impact—The project would temporarily generate air pollutants; impacts would be less than significant. Several measures can be taken to minimize construction-related impacts and operational impacts, which can be found in Chapter 2 and Appendix L. No mitigation would be required.

3.2.4 Biological Resources

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—The project would have a less than significant impact on the California tiger salamander and Swainson's hawk. With the incorporation of avoidance and minimization measures—discussed in Chapter 2 under Biological Environment and in Appendix L—into the project, these impacts are considered to be less than significant.

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?

No Impact—A California Natural Diversity Database query did not identify any riparian habitat or other sensitive natural communities of special concern within the project area. So, no potential impacts to riparian habitat or natural communities of special concern are expected.

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?

No Impact—No wetlands were identified within the project area.

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—Migratory birds may try to nest in vegetation or on structures within the Caltrans right-of-way or easement during their nesting season between February 1 and September 30. No impacts to migratory birds are expected with the implementation of Caltrans' Standard Special Provisions.

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

No Impact—The project would not conflict with any local policies or ordinances protecting biological resources.

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

3.2.5 Cultural Resources

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?

No Impact—As discussed in the Cultural Resources Section in Chapter 2, Caltrans identified 16 potential historic properties within the Area of Potential Effects and determined that the properties are not eligible for the National Register of Historic Places. The State Historic Preservation Officer provided concurrence for this determination of eligibility on November 3, 2020.

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

No Impact—As discussed in the Cultural Resources Section in Chapter 2, there are no known prehistoric sites within the Area of Potential Effects. No archaeological resources eligible for the National Register of Historic Places or California Register of Historical Resources have been recorded within the Archaeological Study Area. No archaeological sites were discovered during pedestrian surveys of the Archaeological Survey Coverage Area in 2016 or 2019.

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

No Impact— As discussed in the Cultural Resources Section and the avoidance and minimization measures in Chapter 2 the project is not expected to disturb any human remains, including those interred outside of dedicated cemeteries.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

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

No Impact—The project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.

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

No Impact—The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.2.7 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:

No Impact— The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death

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— Rupture of a known earthquake fault is not expected since the project is not in a known earthquake fault area.

ii) Strong seismic ground shaking?

No Impact— Strong seismic ground shaking is not expected since the project is not in a known earthquake fault area.

iii) Seismic-related ground failure, including liquefaction?

No Impact—The project is in an area with low potential for seismic-related ground failure, including liquefaction, because the project area does not contain soil that is prone to liquefaction or seismic-related ground failure.

iv) Landslides?

No Impact—The project area would not be subject to landslides because of the generally flat topography and because the project would not involve large cuts and fills or steep excavation.

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

No Impact—Project construction would not result in substantial soil erosion or the loss of topsoil because the project would include appropriate Best Management Practices to prevent substantial soil erosion or loss of topsoil.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

No Impact—Project construction would not cause the project area to become unstable or cause landslides, lateral spreading, subsidence, or collapse. The soil in the project area is not subject to liquefaction.

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 not on expansive soil and would not create substantial direct or indirect risks to life or property.

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 not include septic tanks or alternative wastewater disposal systems; therefore, there would be no impact.

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

Less Than Significant with Mitigation Incorporated—As discussed in Chapter 2 under Paleontology, the Build Alternative would affect the Modesto Formation and the Riverbank Formation. The Build Alternative would acquire 26.5 acres for the project, which would include 11.8 acres of excavation for three stormwater detention basins. All ground disturbance during general

construction excavation activities and excavation associated with drainage conveyance and stormwater detention basins in the high-sensitivity Modesto Formation and the Riverbank Formation could affect fossils. Mitigation measures would be incorporated into the project to minimize potential impacts. These measures are listed in Chapter 2 and Appendix L.

3.2.8 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?

Less Than Significant Impact with Mitigation Incorporated—As discussed in Chapter 3 under Climate Change, the project would result in an increase in greenhouse gas emissions under the Build Alternative. However, the additional lane in each direction proposed by this project would improve traffic flow, relieve congestion, enhance operational efficiency, and improve the level of service. These proposed improvements, along with the construction and operational mitigation measures discussed in the project-level greenhouse gas reduction strategies section below, would result in a less than significant impact.

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

No Impact—The project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.2.9 Hazards and Hazardous Materials

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—As discussed in Chapter 2 under Hazardous Waste, applicable Caltrans' Standard Special Provisions and/or Non-Standard Special Provisions addressing proper handling and disposal of aerially deposited lead, asbestos-containing materials, lead-based paint, and treated wood waste would be included in the construction contract to protect construction personnel and the public.

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?

No Impact—Project construction would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

No Impact—No public schools exist within 0.25 mile of the project area.

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

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 or within 2 miles of a public or private airport that would result in a safety hazard or excessive noise for people residing or working in the project area.

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

No Impact—The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

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

No Impact—The project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

3.2.10 Hydrology and Water Quality

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?

No Impact—With the implementation of Best Management Practices and Caltrans Standard Specifications, the project would not violate any water quality standards or waste discharge requirements or substantially degrade surface water or groundwater quality. Adherence to construction provisions and precautions described in the National Pollutant Discharge Elimination System permit would be upheld.

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

No Impact—The construction or operation of the project would not impede sustainable groundwater management of the basin since the project would not use groundwater or interfere with groundwater recharge.

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;

No Impact—Project construction would not result in substantial soil erosion or siltation because the project would include appropriate Best Management Practices to prevent soil erosion and siltation.

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

Less Than Significant Impact— The project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite. As discussed in Chapter 2 under Water Quality, the Build Alternative proposes three detention basins to accommodate stormwater runoff. The detention basins would be designed with sufficient capacity to detain two 10-year/24-hour storm events.

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

Less Than Significant Impact—The project would not 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. As discussed in Chapter 2 under Water Quality, the Build Alternative proposes three detention basins to accommodate stormwater

runoff. The detention basins would be designed with sufficient capacity to detain two 10-year/24-hour storm events.

iv) Impede or redirect flood flows?

Less Than Significant Impact—The project would not impede or redirect flood flows. As discussed in Chapter 2 under Water Quality, the Build Alternative proposes three detention basins to accommodate stormwater runoff. The detention basins would be designed with sufficient capacity to detain two 10-year/24-hour storm events.

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

No Impact—The project is not in a flood hazard, tsunami, or seiche zone.

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

No Impact—The project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project would not physically divide an established community.

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?

No Impact—The project would not 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.

3.2.12 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—The project would not 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. The project is not in land that is classified as a Mineral Resource Zone, according to the state geologist.

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—The project would not 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. The project is not within a locally important mineral resource recovery site.

3.2.13 Noise

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?

Less Than Significant Impact—As discussed in Chapter 2 under Noise and Vibration, the Build Alternative would move future traffic closer to the identified receptors on State Route 99.

According to the Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as an increase of 12 decibels or more) or when the future noise level with the project approaches or exceeds the noise abatement criterion (67 decibels, in this case); approaching the noise abatement criterion is defined as coming within 1 decibel of the noise abatement criterion. Therefore, potential abatement measures must be considered.

Based on the studies completed to date, Caltrans does not intend to incorporate noise abatement in the form of soundwalls for the proposed project. If during final design, conditions have substantially changed, noise abatement may be necessary. The final decision on noise abatement would be made upon completion of the project design and the public involvement process.

Details of the recommended noise abatement measures are included in Chapter 2 and Appendix L.

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

Less Than Significant Impact—Groundborne vibration may occur during project construction; however, equipment noise control and administrative measures would be in place. Application of these measures would reduce construction-related noise impacts; nevertheless, a temporary increase in noise and vibration may still occur. These measures are detailed in Chapter 2 and Appendix L.

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 or an airport land use plan and is not within 2 miles of a public airport or public use airport.

3.2.14 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 would not induce substantial unplanned population growth in the area, either directly or indirectly, because the project would not add capacity or extend roads or other infrastructure.

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

No Impact—The project would not displace substantial numbers of existing people or housing.

3.2.15 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? Police protection? Schools? Parks? Other public facilities?

No Impact—The project would not result in an impact on parks, schools, or other public facilities and would not impact emergency response times.

3.2.16 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—No parks and recreational facilities exist within the proposed project area.

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 does not propose any recreational facilities or require the construction or expansion of recreational facilities.

3.2.17 Transportation

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—The project would not conflict with any applicable program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The project would ensure the safe operation of the highway system for motorists, bicyclists, and emergency responders.

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

No Impact—The project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b); it will not have an impact on vehicle miles traveled.

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

No Impact—The project would not increase hazards due to a geometric design feature.

d) Result in inadequate emergency access?

No Impact—The project would not result in inadequate emergency access.

3.2.18 Tribal Cultural Resources

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 resources in the proposed project area are listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

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—There are no tribal cultural resources in the proposed project area that are significant to a California Native American tribe pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

3.2.19 Utilities and Service Systems

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 would require the relocation of existing stormwater drainage, electrical power, and telecommunication facilities. These facilities would be relocated as needed within the project area, which would not cause significant environmental effects.

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

No Impact—The project would have sufficient water supplies for construction and would not require additional water supplies in future years.

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 generate significant amounts of wastewater or require future capacity for 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?

No Impact—The project would not 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.

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

No Impact—The construction contractor would be responsible for controlling/dispersing of solid waste in accordance with federal, state, and local statutes and regulations.

3.2.20 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?

No Impact—The project would not substantially impair an adopted emergency response plan or emergency evacuation plan. The project is not within a very high fire hazard severity zone.

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— The project would not exacerbate wildfire risks, expose project occupants to pollutant concentrations from a wildfire, or promote the uncontrolled spread of a wildfire. The project is not within a very high fire hazard severity zone.

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 not 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. The project is not within a very high fire hazard severity zone.

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 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. The project is not within a very high fire hazard severity zone.

There is the potential that construction activities could create an unintended fire. However, the contractor would use adequate precautions and procedures as outlined in the contract's standard specifications to prevent and extinguish fire incidents during construction.

3.2.21 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—The project does not 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.

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.)

No Impact—The project does not have impacts that are individually limited but cumulatively considerable.

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

Less Than Significant Impact—The project would not cause substantial adverse effects on human beings, either directly or indirectly.

3.3 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.

3.3.1 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 (known as 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 n.d.) 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 made 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 greenhouse gas emissions and climate change by passing multiple Senate and Assembly bills and executive orders including, but not limited to, the following:

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse gas 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 32 in 2006 and Senate Bill 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 emissions 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 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 readopted 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 equivalent. 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 California 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 traveled, 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 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.

3.3.2 Environmental Setting

The project sits along State Route 99 and is within the San Joaquin Valley Air Basin in Madera County. The project area is rural and predominantly agricultural. Traffic volume in past years has grown in relative proportion to the population in the project vicinity. State Route 99 is the only major regional route in the area, carrying commuter, truck, and interregional traffic.

There are few crossings of the San Joaquin River between Fresno County and Madera County. The nearest crossing to the east of State Route 99 is about 7 miles away on State Route 41; the nearest crossing to the west is on State Route 145, about 8 miles away. State Route 99 is the most direct route for people living and working along the corridor, which includes the main population centers in both counties—the cities of Fresno and Madera.

State Route 99 is a major route for the goods movement in California. Truck traffic on this segment of the highway is 19.23 percent. Agricultural products and manufactured items are sent from this region throughout the nation and the world.

State Route 99 also carries a large amount of interregional traffic. This traffic can include people traveling for business or pleasure with origins and destinations both inside and outside of California.

The Madera County Transportation Commission identifies the segment of State Route 99 within the project limits as one of the highway's most congested segments in Madera County. The segment that would be widened under the proposed project forms a four-lane bottleneck between two six-lane segments immediately north and south of project limits.

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.

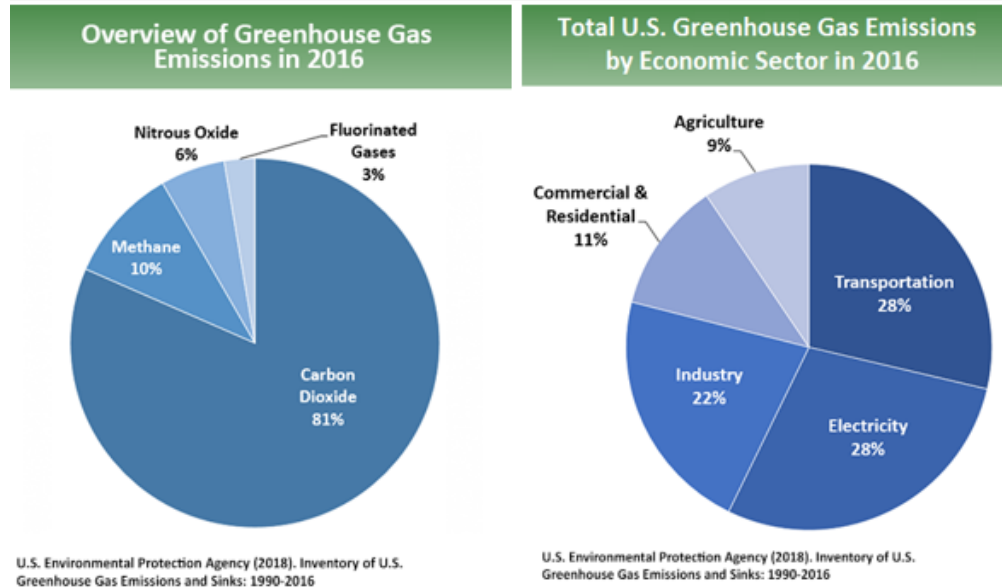
National Greenhouse Gas Inventory

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 gases 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).

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. See Figure 3-1.

Figure 3-1 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. (ARB 2019a) See Figures 3-2 and 3-3.

Figure 3-2 California 2017 Greenhouse Gas Emissions

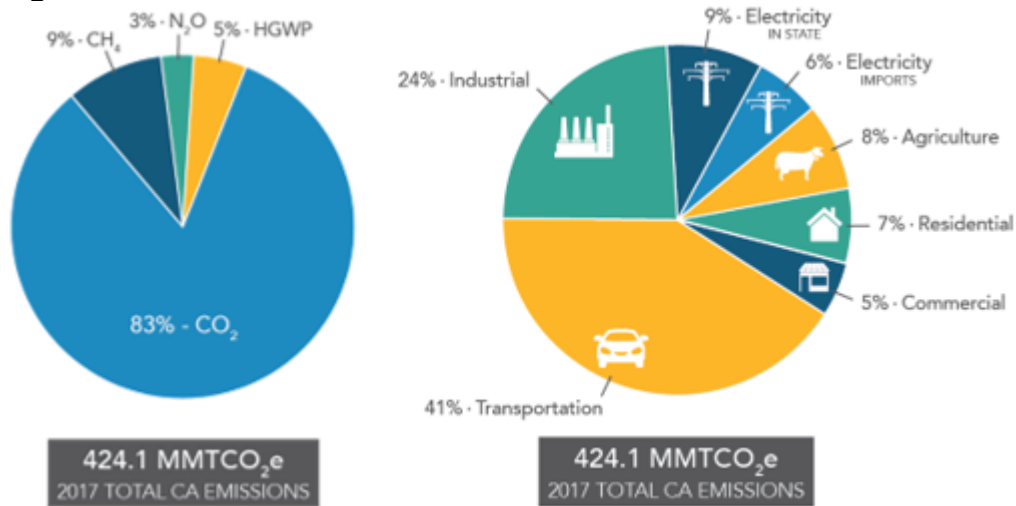
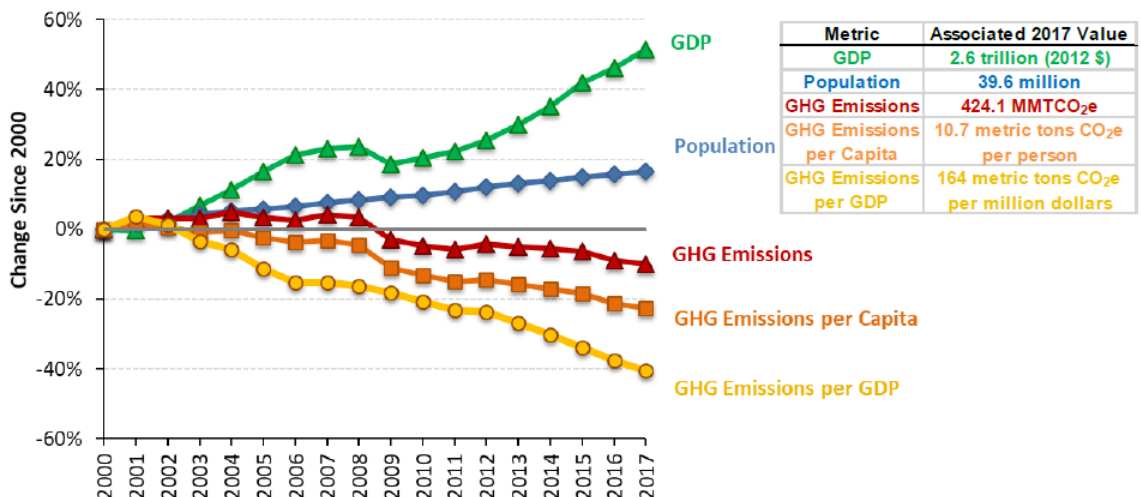


Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000



Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every 5 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 will 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 will cumulatively achieve greenhouse gas reduction goals. Targets are set at a percent reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. The Madera County Transportation Commission is the Metropolitan Planning Organization for the project area. The regional reduction targets for Madera County are 10 percent by 2020 and 16 percent by 2035. (ARB 2019c)

The Madera County Transportation Commission 2018 Regional Transportation Plan/Sustainable Communities Strategy details how the region will reduce greenhouse gas emissions to state-mandated levels over time. The inclusion of the Sustainable Communities Strategy is required by Senate Bill 375 and stresses the importance of meeting greenhouse gas per capita emission reduction targets set by the California Air Resources Board.

The Madera County Transportation Commission participated in the San Joaquin Valley Blueprint Integration Project, which supported small valley cities in integrating smart growth principles into their general plans and other planning policies. (Fresno Council of Governments 2009) The Madera County General Plan Air Quality Element contains objectives and policies to assess and mitigate potentially significant air quality and climate change impacts from proposed projects within the county. (Madera County Planning Department 2010)

Table 3.1 Regional and Local Greenhouse Gas Reduction Strategies

Title	Greenhouse Gas Reduction Policies or Strategies
Madera County Transportation Commission 2018 Regional Transportation Plan/Sustainable Communities Strategy	Achieve Senate Bill 375 Greenhouse Gas reduction goals. To promote intermodal transportation systems that are fully accessible, encourage quality growth and development, support the region's environmental resource management strategies, and be responsive to the needs of current and future travelers. To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to foster economic competitiveness of the Madera region. To enhance transportation system coordination, efficiency, and intermodal connectivity to keep people and goods moving and meet regional transportation goals. To maintain the efficiency, safety, and security of the region's transportation system. To improve the quality of the natural and human-built environment through regional cooperation of transportation systems planning activities.

3.3.3 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 main greenhouse gases 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 is 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 versus 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

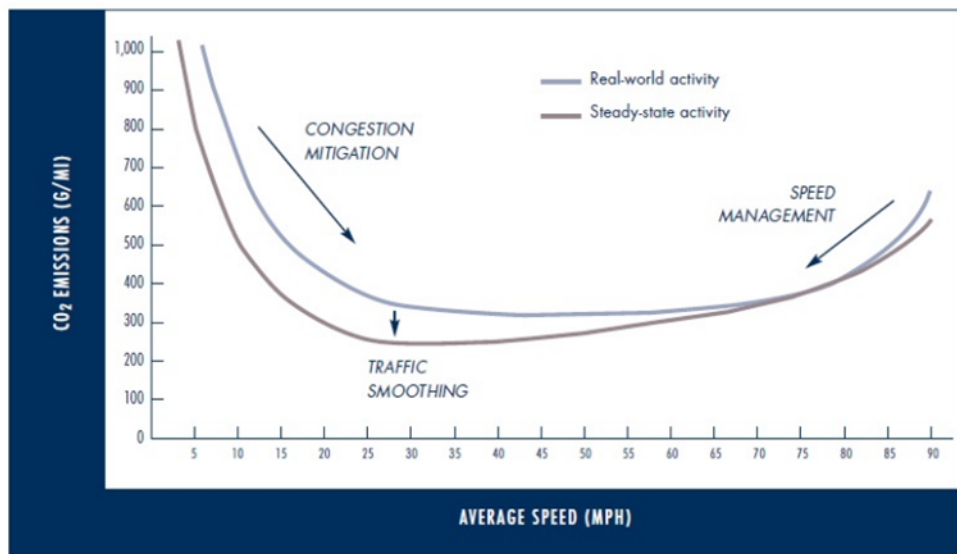
Carbon dioxide accounts for 95 percent of transportation greenhouse gas emissions in the U.S. The largest sources of transportation-related greenhouse gas emissions are passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over half of the emissions from the sector. The remainder of greenhouse gas emissions comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, trains, pipelines, and lubricants. Because carbon dioxide emissions represent the greatest percentage of greenhouse gas emissions, it has been selected as a proxy within the following analysis for potential climate change impacts generally expected to occur.

The highest levels of carbon dioxide from mobile sources such as automobiles occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 3-4). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

The following four main strategies can reduce greenhouse gas emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower greenhouse gas-emitting fuels, and (4) improving vehicle

technologies/efficiency. All four strategies should be pursued concurrently to be most effective.

Figure 3-4 Possible Use of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide Emissions



Source: Barth and Boriboonsomsin 2010

The project is included in the Madera County Transportation Commission 2018 Regional Transportation Plan/Sustainable Communities Strategy, which reflects the region's strong commitment to building a more sustainable transportation system through long-range planning efforts. The South Madera 6-Lane project is identified in the Regional Transportation Plan/Sustainable Communities Strategy as one of the priority corridors with the greatest overall expected system benefit. The Madera County Transportation Commission endorsed scenario for the 2018 Regional Transportation Plan/Sustainable Communities Strategy would achieve an 11 percent reduction in per capita greenhouse gas emissions by 2030 relative to 2005, meeting the California Air Resources Board's regional target for Madera County.

The Madera County Transportation Commission identifies the segment of State Route 99 within the project limits as one of the highway's most congested segments in Madera County. Adding an additional travel lane in each direction is expected to improve traffic operations by reducing travel delay, reducing buffer time, improving vehicle flow and speed, and reducing collisions throughout the corridor. Reducing existing and predicted future peak-hour congestion relative to existing (2018) would address the 2018 Regional Transportation Plans action item aimed at "reducing congestion in highly traveled and highly congested corridors." Because congested traffic increases vehicle greenhouse gas emissions, reducing congestion would provide a long-term benefit by reducing greenhouse gas emissions.

In addition to the travel lanes, the project would include other Transportation System Management elements such as a closed-circuit television to monitor real-time operations, a vehicle detection system to monitor traffic flow and speed, and a fiber-optic infrastructure network to ensure transmission of real-time motion video. These features will contribute to the 2018 Regional Transportation Plans Transportation System Management goals and contribute to the reduction of greenhouse gases by improving the transportation system and operational efficiencies.

Quantitative Analysis

Caltrans Emission Factors version 2017 model and traffic data from Caltrans Traffic Forecasting and Operations Analysis Report 2019 were used to estimate annual carbon dioxide emissions for existing (2019) conditions, open-to-traffic year (2027) conditions, and design year (2047) conditions. Modeling incorporated off-model adjustment factors approved by the California Air Resources Board to address the Safer Affordable Fuel-Efficient Rule part 2 changes in future fuel consumption standards. The U.S. National Highway Traffic Safety Administration and the U.S. Environmental Protection Agency Safer Affordable Fuel-Efficient Vehicles Rule Part One, which revokes California's authority to set its own greenhouse gas emissions standards, was published on September 27, 2019, and became effective on November 26, 2019. The Safer Affordable Fuel-Efficient Vehicles Rule Part Two became effective on June 30, 2020; it amends existing Corporate Average Fuel Economy and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establishes new standards covering model years 2021 through 2027. The rule retains the model year 2020 standards for both programs through the model year (2027). The California Air Resources Board introduced off-model adjustment factors to Emission Factors version 2017 to account for these changes. Modeling with Emission Factors version 2017 or Caltrans Emission Factors version 2017 remains the most precise means of estimating future greenhouse gas emissions.

Table 3.2 shows projected carbon dioxide emissions for the existing condition in 2019 and No-Build and Build Alternative in the open-to-traffic year (2027) and design year (2047), respectively.

Open-to-Traffic Year (2027)

For the No-Build Alternative, carbon dioxide emissions in the open-to-traffic year (2027) would be 127,750 tons per year compared to 131,613 tons from the existing (2019), which is 3,863 tons less carbon dioxide emissions per year. The predicted increase in vehicles and the lower speeds would result in reduced greenhouse gas emissions between 2019 and 2027 (see Figure 3-4 on page 112). However, without the project, operational efficiency would not improve, and the level of service in the project area would not be acceptable.

With the Build Alternative, carbon dioxide emissions in the open-to-traffic year (2027) would be 135,272 tons, which is 3,659 tons more than the existing (2019). The predicted increase in vehicles and the higher speeds would result in increased greenhouse gas emissions between 2019 and 2027 (see Figure 3-4 on page 112). Greenhouse gas emissions would increase with the project, however operational efficiency would improve, and the level of service in the project area would be acceptable.

Design Year (2047)

For the No-Build Alternative, carbon dioxide emissions in the design year (2047) would be 139,010 tons per year compared to 131,613 tons from the existing (2019), which is 7,397 tons more carbon dioxide emissions per year.

For the Build Alternative, carbon dioxide emissions in the design year (2047) would be 151,454 tons, which is 19,841 tons more than the existing (2019).

Table 3.2 Estimated Annual Carbon Dioxide Emissions

Build Alternative	Annual Carbon Dioxide Emissions (Tons/Year)
Existing (2019)	131,613
Open-to-Traffic Year 2027 No-Build Alternative	127,750
Open-to-Traffic Year 2027 Build Alternative	135,272
Design Year 2047 No-Build Alternative	139,010
Design Year 2047 Build Alternative	151,454

Source: Caltrans Emission Factors version 2017

As shown in Table 3.2 above, under the design year (2047), the Build Alternative would increase carbon dioxide emissions compared to the existing (2019) and the No-Build Alternative. The project would increase greenhouse gas emissions due to projected increases in population and a corresponding increase in vehicles. The project would, however, improve traffic circulation, operational efficiency, and level of service.

Congested traffic conditions overall are very complicated to model, and current traffic models do not fully capture the stop-and-go conditions during traffic congestion. As shown in Figure 3-4 on page 112, vehicles traveling at 10 miles per hour produce roughly double the amount of carbon dioxide emissions compared to vehicles traveling at 30 miles per hour. Stop-and-go traffic further increases carbon dioxide emissions during highly congested conditions.

While Caltrans Emission Factors version 2017 has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its greenhouse gas emissions rates are based on tailpipe emission test data. Moreover, the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. Greenhouse gas emissions quantified using Caltrans Emission Factors version 2017 are therefore estimates and may not reflect actual physical emissions. Though Caltrans Emission Factors version 2017 is currently the best available tool for calculating greenhouse gas emissions from mobile sources, it is important to note that the greenhouse gas emissions results are only useful for a comparison of alternatives.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence will 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.

Carbon dioxide emissions generated from construction equipment were estimated using the Caltrans Construction Emissions Tool. The estimated emissions would be 2,829 tons generated during the 320 working-day construction period.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all California Air Resources Board emission reduction regulations. All projects also include Caltrans Standard Specification Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes, including those of the San Joaquin Valley Air Pollution Control District.

The project will also implement Caltrans standardized measures (such as construction Best Management Practices) that apply to most or all Caltrans projects. Certain common regulations, such as equipment idling restrictions and development and implementation of a traffic control plan that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

CEQA Conclusion

The project would result in an increase in greenhouse gas emissions during the construction and operation of the Build Alternative. For the Build Alternative, carbon dioxide emissions would be higher in the design year (2047) than in the existing (2019). Except for the open-to-traffic year (2027) No-Build Alternative option, carbon dioxide emissions are projected to increase throughout the design year (2047). Although technological improvements in automobile and fuel efficiency, as well as public interest in hybrid and electric vehicle purchases, continue to advance, by 2047, the annual average daily traffic will have increased by 63 percent compared to existing conditions, or 46,500 more vehicles on the road in comparison to 2019. This surge in the annual average daily traffic would be due solely to projected population growth.

The additional lane in each direction of the widened highway is intended to address population growth by allowing higher capacity, more free-flowing traffic movement within the project limits, and more efficient operation. Ideally, the presence of an additional lane would encourage slower-moving vehicles to move to the side lanes and allow faster vehicles to pass, relieving congestion, enhancing operational efficiency, and improving the level of service.

It is the policy or objective of Caltrans to provide a quality of service equal to level of service C in rural areas and a quality of service equal to level of service C/D in urban areas. Table 3.3 shows the four-lane section, which currently operates at a level of service D/D. Table 3.3 also shows that in the open-to-traffic year (2027), the quality of service would degrade to a level of service D/E under No-Build Alternative conditions; this quality of service would not meet the standard set by Caltrans for state highway facilities. The Build Alternative, however, would allow the highway to operate at an improved level of service of B/C in the open-to-traffic year (2027) and gradually transition to an acceptable level of service D/D in the design year (2047).

Under the design year 2047, the No-Build Alternative would see increased congestion as annual average daily traffic increases due to projected growth, thereby reducing morning/evening peak speeds. The Build Alternative would enhance operational efficiency by reducing congestion and increasing free-flowing movement. Morning/evening peak speed would see an improvement from 53/49 miles per hour to 62/62 miles per hour within the project limits (see Table 3.3 below).

Table 3.3 Comparison of 2019, 2027, and 2047 Build Traffic

Year	Annual Average Daily Traffic (Total)	Annual Average Daily Traffic-Truck (19.23 Percentage)	Morning/Evening Peak Volume	Morning/Evening Peak Volume	Morning/Evening Peak Level of Service
2019 Existing	80,500	15,480	14,600/16,600	62/62	D/D
2027 No-Build Alternative	90,500	17,403	17,000/18,900	62/61	D/E
2047 No-Build Alternative	127,000	24,422	23,800/26,300	53/49	F/F
2027 Build Alternative	90,500	17,403	17,000/18,900	64/63	B/C
2047 Build Alternative	127,000	24,422	23,800/26,300	62/62	D/D

Traffic Operations Analysis 2020

Operations would also be enhanced by eliminating the existing bottleneck within the project limits. The additional lane in each direction would reduce stop-and-go traffic during peak hours.

The widening of State Route 99 is in proportion to future land use and population growth set forth by the Madera County general land use plan and would accommodate the future travel demand required to meet the plan. The project would not cause changes to the land use within the project area and would not cause changes to travel patterns predicted in the travel demand model for the region. Based on Table 3.3, the annual average daily traffic remains the same for both the future Build Alternative and No-Build Alternative.

Caltrans considers and integrates climate change through greenhouse gas reduction and adaptation strategies. These construction, operational, and adaptation measures are discussed in the project-level greenhouse gas reduction strategies section of this analysis. By integrating these reduction strategies, Caltrans would promote measures, practices, and business operations to minimize greenhouse gas emissions into the design and maintenance of its transportation system.

Greenhouse gas emissions in the design year 2047 would be higher than both existing (2019) and No-Build Alternative conditions. Annual average daily traffic would remain the same under Build Alternative and No-Build Alternative scenarios. Vehicle and fuel technologies will improve and continue to decrease greenhouse gas emissions. The additional lane in each direction

proposed by this project would improve traffic flow, relieve congestion, enhance operational efficiency, and improve the level of service. These proposed improvements, along with the construction and operational mitigation measures discussed in the project-level greenhouse gas reduction strategies section below, would result in a less than significant impact.

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

3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. 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*. See Figure 3-5.

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 of 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)

Figure 3-5 California Climate Strategy

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 forest lands, 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 a new 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 (CTP 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, the 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 will help to reduce greenhouse gas emissions include:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled

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

The Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce 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. Caltrans staff will enhance the environmental training provided for contractor staff by adding a module on greenhouse gas reduction strategies.

The contractor would be required to:

- Reduce construction waste and maximize the use of recycled materials wherever possible (reduces the consumption of raw materials, reduces landfill waste, and encourages cost savings).
- Incorporate measures to reduce the use of potable water.

Seek to operate construction equipment with improved fuel efficiency by:

- Properly tuning and maintaining equipment.
- Limiting equipment idling time.
- Using the right-size equipment for the job.
- Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions also help reduce greenhouse gas emissions.
- In disturbed areas, use compost and native hydroseed mix to promote revegetation success and provide erosion control. Vegetation helps sequester carbon dioxide.
- Limit idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment.
- Schedule truck trips outside of peak morning and evening commute hours.
- Install Continuously Reinforced Concrete Pavement to lower the rolling resistance of the highway. In 2008, the California Department of Transportation (Caltrans) conducted a study to measure and compare the fuel economy of vehicles traveling on different pavement types. Vehicles on concrete pavements had 2 percent less fuel consumption.
- Use ultra-reflective sign materials that are illuminated by headlights. Current overhead signs are illuminated with an external light source that requires electricity. The new ultra-reflective sign materials would not use electricity.
- For ease of maintenance vehicle movement, a Class 2 aggregate base roadway that is 16 feet wide and 8 inches thick would be built around each basin. Class 2 aggregate base materials have lower greenhouse gas emissions than concrete or hot mix asphalt materials.

- The project would match the existing grade and would reduce earthwork. The matching grade would avoid the need for excavating excess material or filling with an imported borrow. This would avoid the use of heavy machinery for excavation, trucks for bringing in imported borrow, and compactors for compacting the imported borrow.
- Lengthen lane closure duration to reduce necessary mobilization efforts.

Increased Lane Closure Length—A lane closure that is 1 mile long would be proposed in the construction specifications for this project. Doubling the lane closure length from a standard 0.5-mile length to 1 mile would double the production of work during each shift requiring lane closures. This would result in reduced greenhouse gas emissions due to the reduced number of working days requiring lane closures and reduced construction mobilization associated with setup and removal of temporary lane closures.

Increased Lane Closure Duration—An expanded work window of 10 hours would be proposed in the construction specifications for this project. A 10-hour lane closure for every shift requiring temporary traffic control would allow 25 percent more production to be completed during each shift. This would result in reduced greenhouse gas emissions due to the reduced number of working days requiring lane closures and reduced construction mobilization associated with setup and removal of temporary lane closures.

Measures to reduce operational greenhouse gas emissions would include the following:

- Design and install long-life pavement structures to minimize maintenance and life cycle costs. The structural section for this project would be Continuously Reinforced Concrete Pavement. Continuously Reinforced Concrete Pavement would last about 40 to 50 years with virtually no rehabilitation or maintenance. Continuously Reinforced Concrete Pavement would reduce the life cycle cost, maintenance cost and would contribute to fuel savings, reducing greenhouse gas emissions.
- Swales and detention basins would be designed to convey and retain stormwater. They would be treated with native or drought-tolerant grasses and forbs that nurture infiltration. This would reduce dependence on mechanical equipment, concrete channels, and drainage systems that would produce greenhouse gas emissions to move and treat stormwater.
- Trees would be preserved wherever feasible to minimize the loss of tree covering within the proposed project limits. Trees that must be removed for project construction would be replaced at a 15 to 1 ratio. Fifteen trees will be planted for every tree removed.
- Provide native and drought-tolerant seed mix on disturbed slopes and exposed soils. The project would maximize the use of compost as opposed to synthetic fertilizers to improve soil health.

- Implement intelligent transportation systems and traffic demand management elements to smooth traffic flow and increase system efficiency. Overhead changeable message signs would be installed at two locations to inform northbound and southbound traffic of congestion.
- Install level two electric vehicle chargers for public use. Potential sites include roadside rest areas, park and ride areas, and district facilities. Locations would be determined during the Plans, Specifications, and Estimates phase of the project.
- Monitoring program for travel information—Five years after the project has been built, Caltrans would prepare a traffic growth report for the project segment. The report would compare the growth that has occurred to what was forecasted during project development and what was indicated in the travel demand model for the project. The report would be provided to Caltrans Headquarters to assess how accurate forecasting and travel demand model growth rates were for this project and how they could be applied to future transportation projects.

3.3.5 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 variability 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 4 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.” (USGCRP 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. DOT 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 latest 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 Risk*. (Safeguarding California Plan) The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

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 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 would 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 provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Measures to address adaptation would include the following:

- Improved drainage
- Improve drainage systems to adapt to localized flooding risks.

Sea Level Rise

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

Floodplains Analysis

Based on the Federal Emergency Management Agency website, the project is in an Area of Minimal Flood Hazard (unshaded Zone X) within Madera County, which is determined to be outside the 0.2 percent annual floodplain (500-year frequency). The unshaded Zone X represents most of the area within the Build Alternative. The remaining project area on the northern end of the project is within the shaded Zone A, where the Build Alternative is within the 1 percent annual (100-year frequency) floodplain.

To accommodate additional roadway runoff from increased impervious surfaces, the project would involve the construction of a series of detention basins and drainage ditches within a Caltrans right-of-way. Three detention basins are proposed under the Build Alternative. All detention basins would be at least 5 feet deep with 2 feet freeboard, while drainage ditches would be 3 feet deep. The Caltrans District 6 Climate Change Vulnerability Assessment mapping for precipitation change shows a less than 5 percent increase in 100-year storm precipitation through 2085. Given these project features, the project would accommodate precipitation changes due to climate change.

Wildfire

The project is not in a very high fire hazard severity zone. (California Department of Forestry and Fire Protection, 2007) The project is about 0.70 mile west of the westernmost boundary of the nearest fire hazard severity zone. Construction activities could create an unintended fire in roadside vegetation; however, Caltrans' 2018 revised Standard Specifications Section 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan. By implementing this specification and construction best practices, the project is not expected to exacerbate the impacts of wildfires intensified by climate change.

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- Ted Pistoresi, Pistoresi Ambulance, 113 North R Street, Madera, California, 93637
- Executive Director, Madera Irrigation District, 12152 Road 28, Madera, California, 93637
- Mesa Verde Farms LLC, 23400 Road 24, Chowchilla, California, 93610
- Taylor Creek Farms, 800 South Front Street, Chowchilla, California, 93610
- Awadis and Garabed Manoukian, 7066 North West Avenue, Fresno, California, 93711
- Creekside Land Company Limited Liability Company, 30814 Avenue 9, Madera, California, 93637
- Slam Clam Incorporated, 2952 East University Avenue, Fresno, California, 93703
- Harvest Point Limited Liability Company, 4007 Via Valle Verde, Rancho Santa Fe, California, 92091
- Ravi and Jay Thiara Farms, Post Office Box 3599, Yuba City, California, 95992
- Jagraj Singh Gill, 10631 North Bonadelle Avenue, Fresno, California, 93730
- Leslie Busick, Post Office Box 4150, Incline Village, Nevada, 89450

Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov



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>.

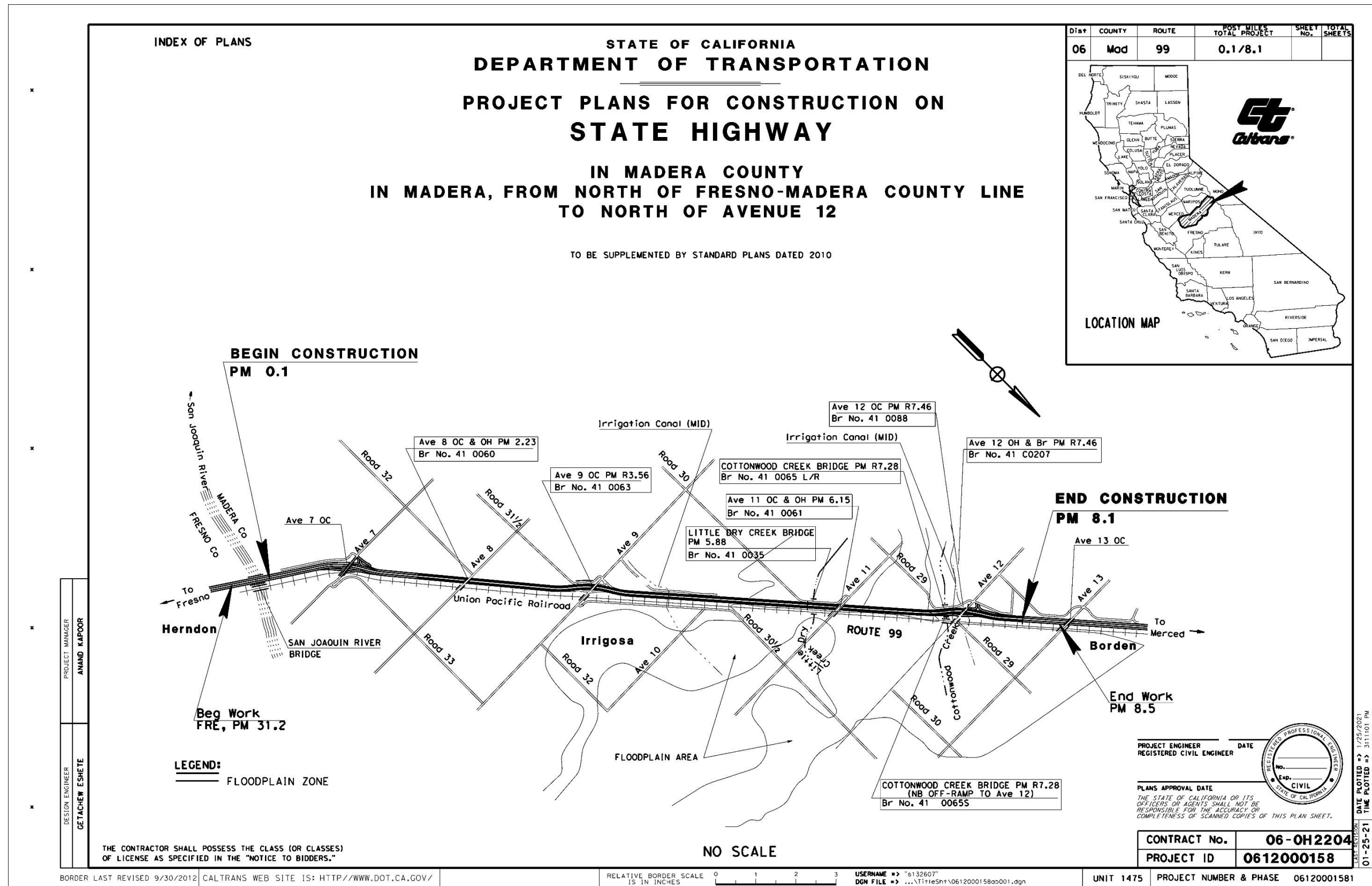
To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

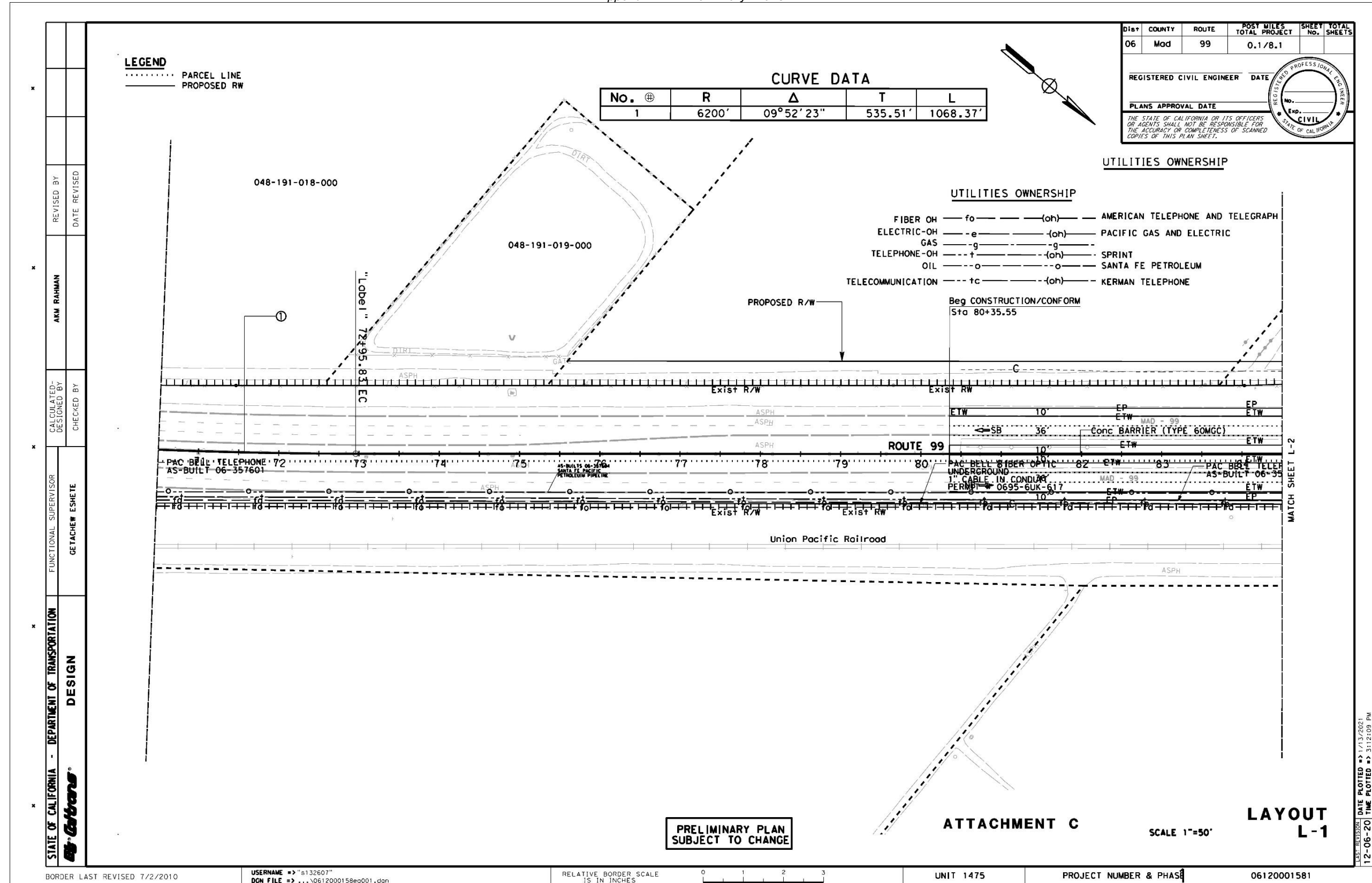
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Toks Omishakin
Director

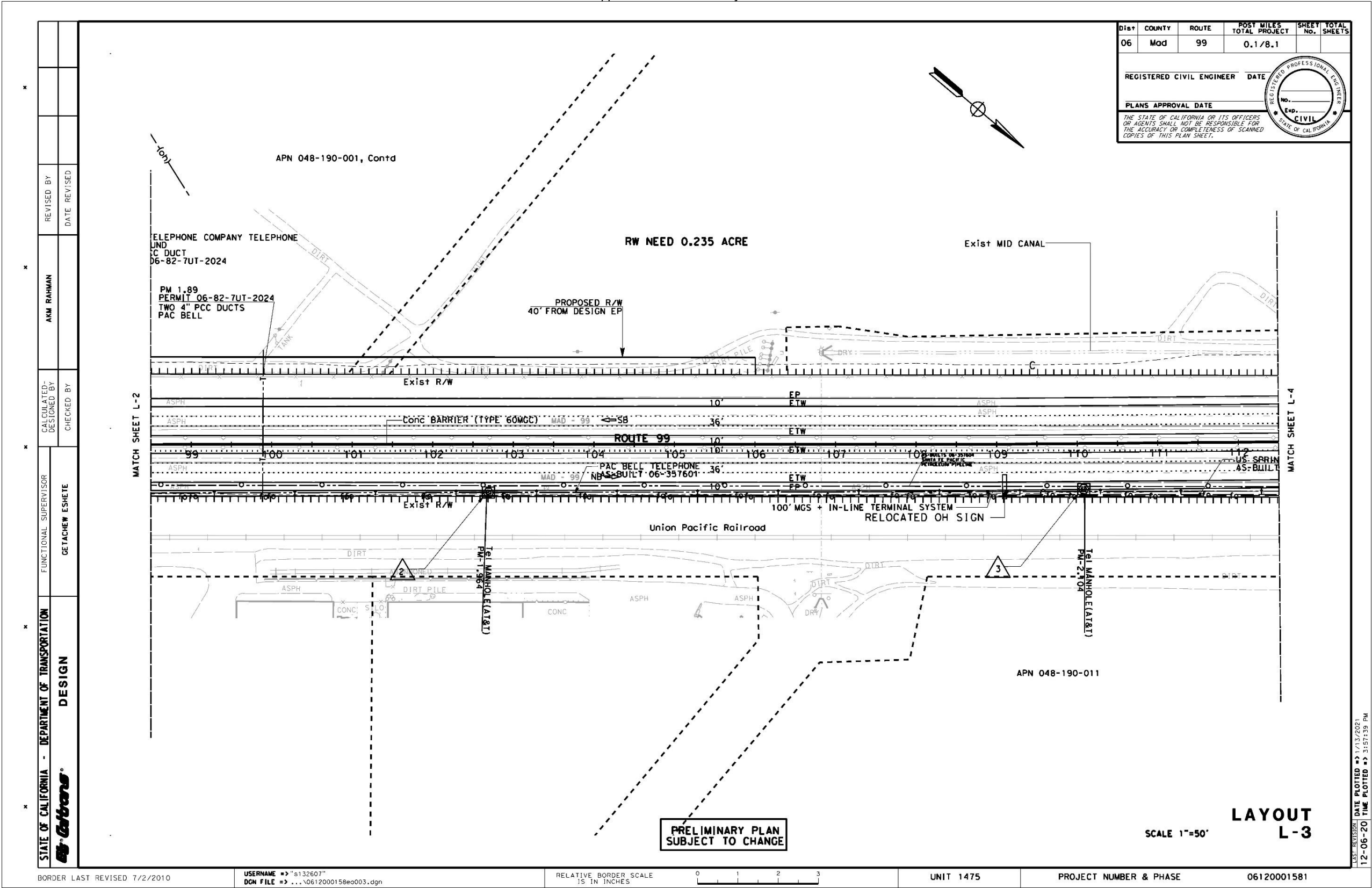
"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

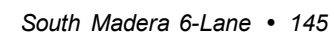
Appendix B Preliminary Plans

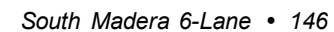


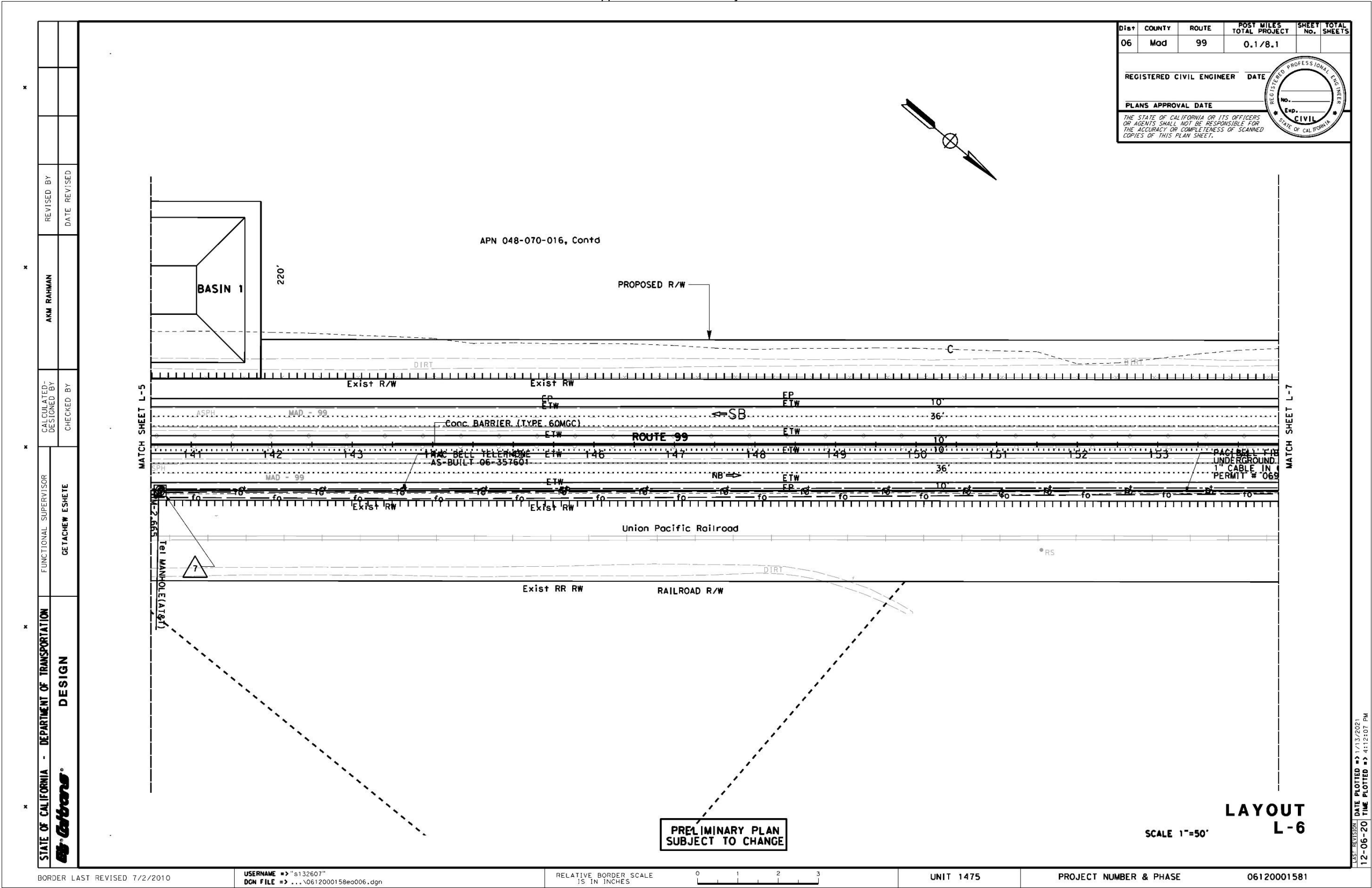













STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION 	FUNCTIONAL SUPERVISOR		AKM RAHMAN	REVISED BY		
	GETACHEW ESHETE					
DESIGN			CHECKED BY	DATE REVISED		

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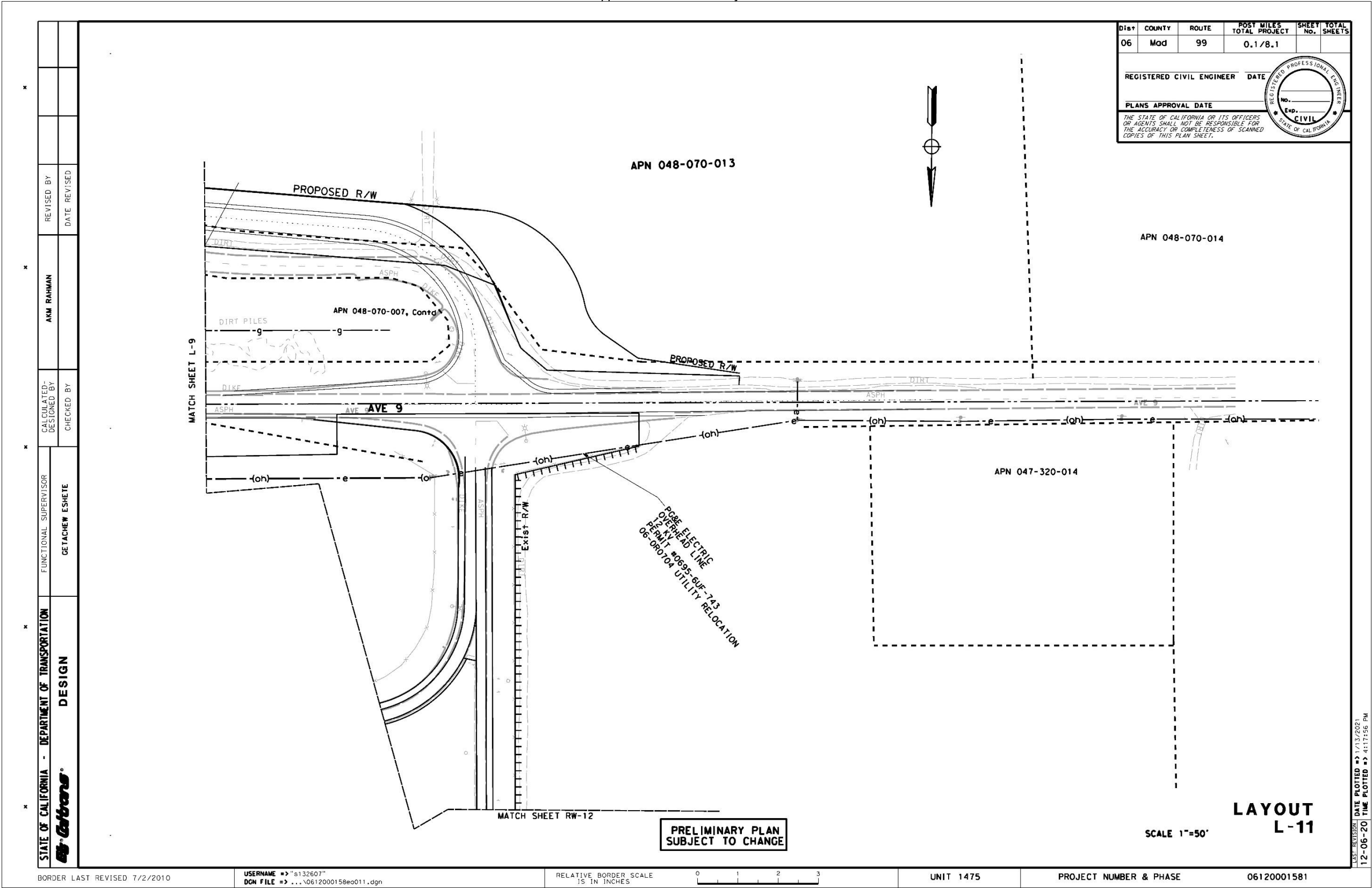
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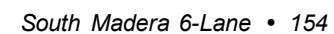


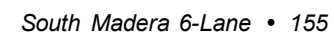
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	GETACHEW ESHETE					
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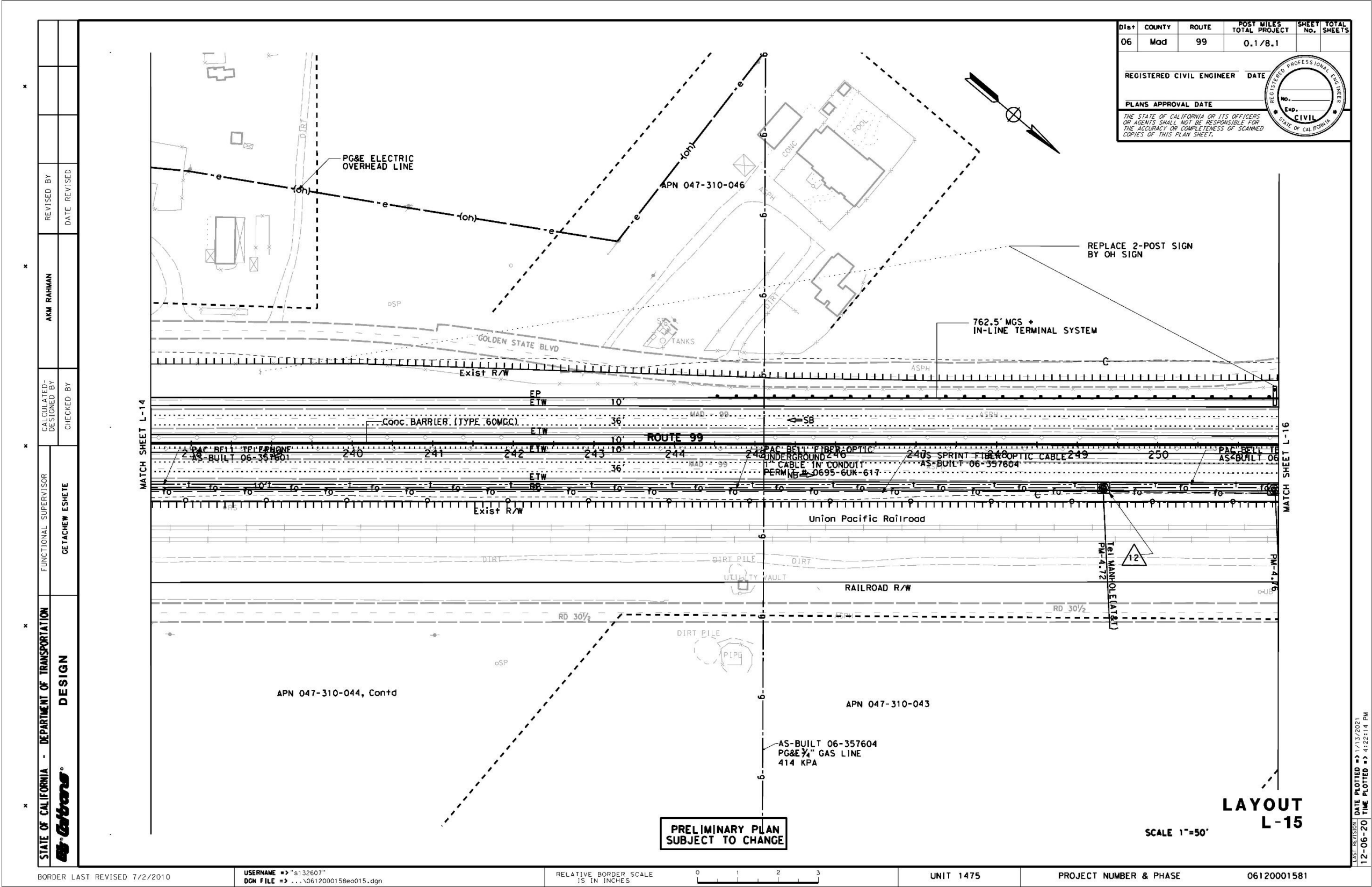
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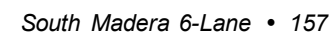
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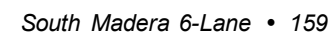


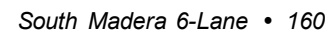


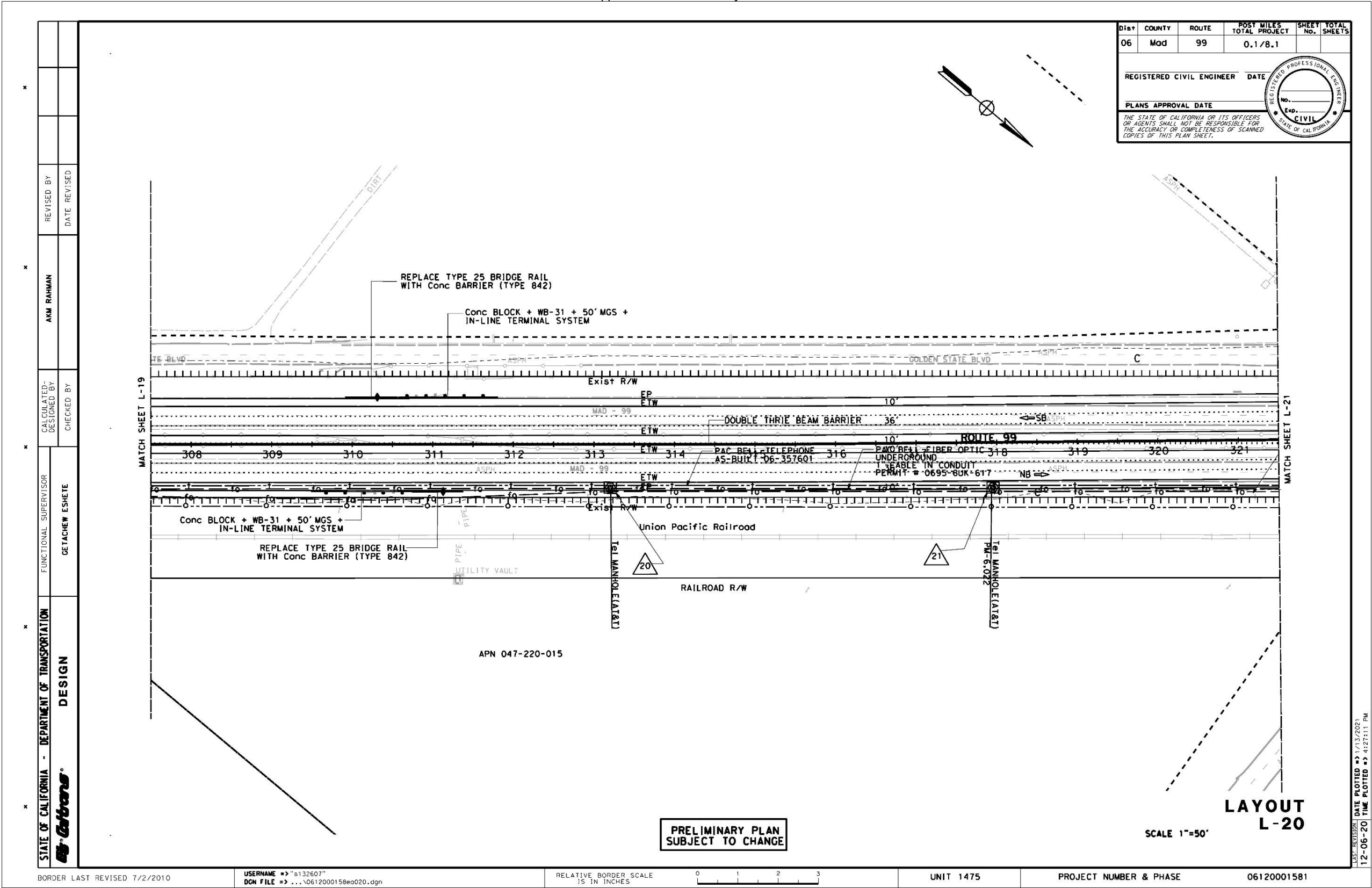












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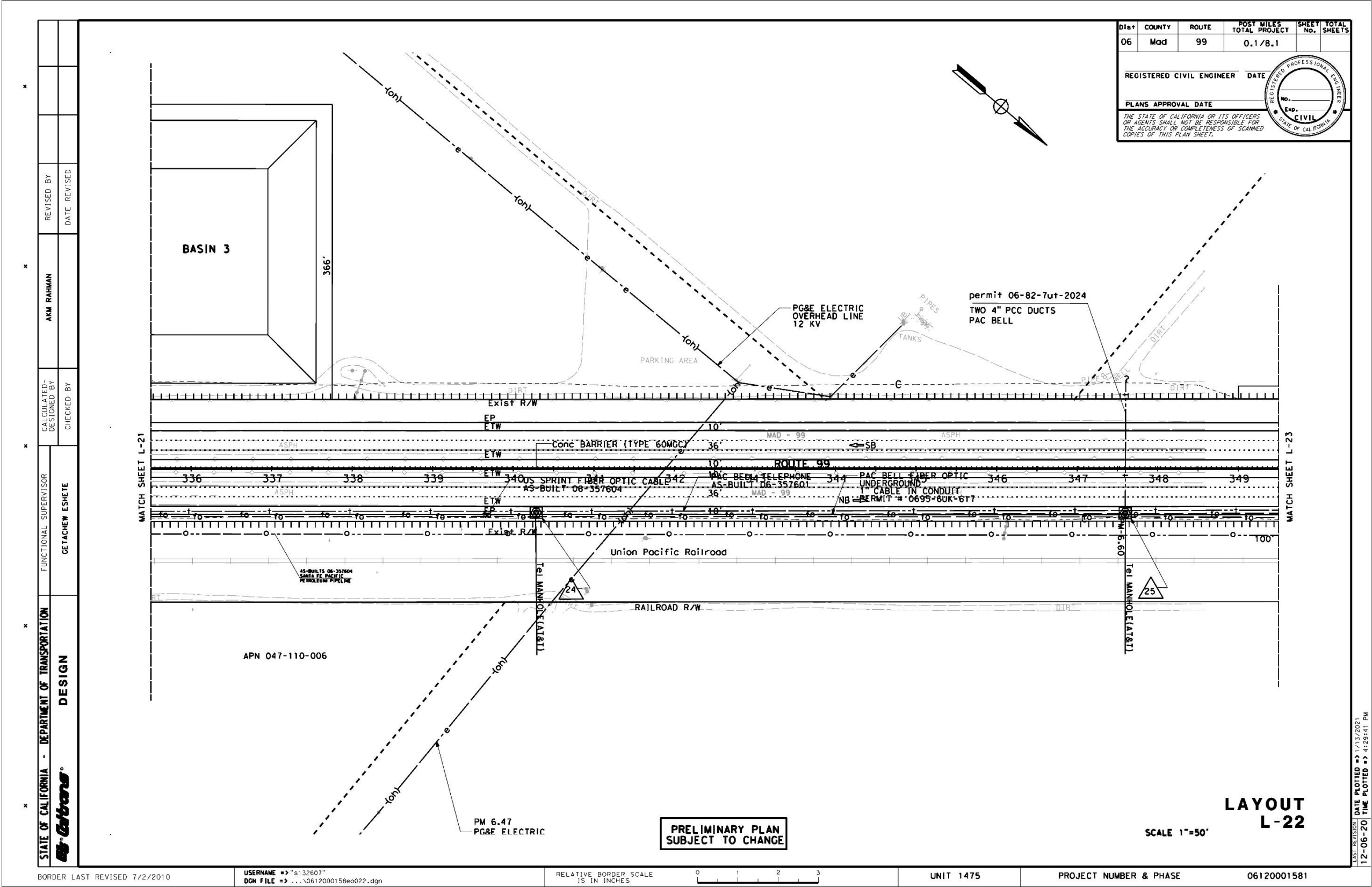
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UNIT 1475

PROJECT NUMBER & PHASE 06120001581





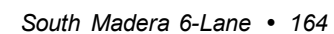
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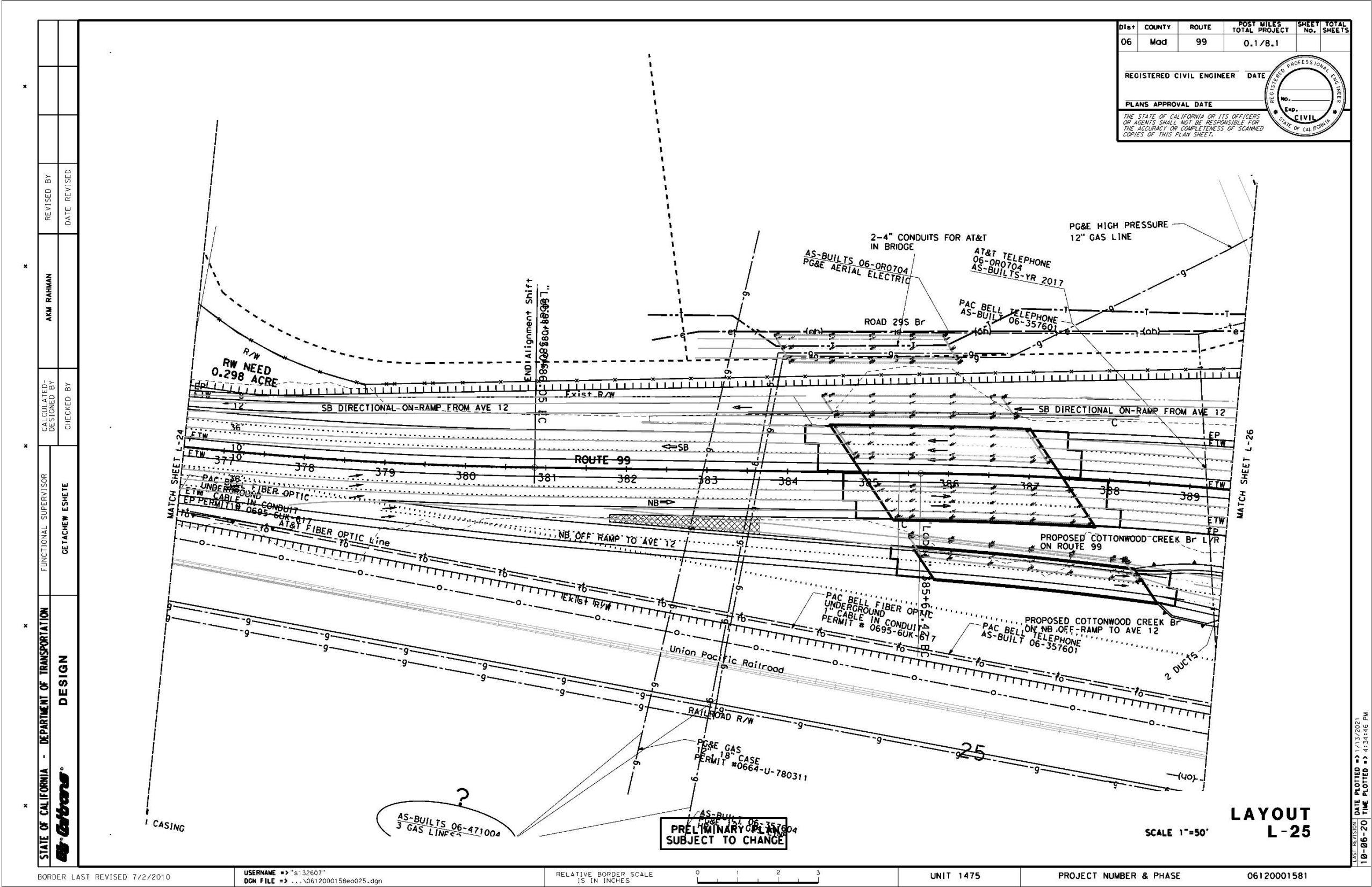
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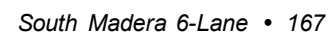
UNIT 1475

PROJECT NUMBER & PHASE 06120001581









Appendix C Farmland Conversion Impact Rating

U.S. DEPARTMENT OF AGRICULTURE Natural Resources Conservation Service		NRCS-CPA-106 (Rev. 1-91)	
FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS			
PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 8/18/20	4. Sheet 1 of 1
1. Name of Project South Madera 6 Lane		5. Federal Agency Involved Federal Highway Administration (FHWA)	
2. Type of Project Transportation		6. County and State Madera, CA	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form.)		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	4. Acres Irrigated 300,234
5. Major Crop(s) Almonds, Grapes		6. Farmable Land in Government Jurisdiction Acres: 543,511 % 39.4	Average Farm Size 466 Acres
8. Name Of Land Evaluation System Used CA Revised Storie Index		9. Name of Local Site Assessment System None	7. Amount of Farmland As Defined in FPPA Acres: 237,572 % 17.2
		10. Date Land Evaluation Returned by NRCS 8/24/20	
PART III (To be completed by Federal Agency)		Alternative Corridor For Segment	
		Corridor A	Corridor B
A. Total Acres To Be Converted Directly		22.658	
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0	
C. Total Acres In Corridor		883.42	
PART IV (To be completed by NRCS) Land Evaluation Information			
A. Total Acres Prime And Unique Farmland		8	
B. Total Acres Statewide And Local Important Farmland		15	
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.0097	
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		30.88	
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)		77	
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.6(c))		Maximum Points	
1. Area in Nonurban Use	15	10	
2. Perimeter in Nonurban Use	10	8	
3. Percent Of Corridor Being Farmed	20	10	
4. Protection Provided By State And Local Government	20	20	
5. Size of Present Farm Unit Compared To Average	10	9	
6. Creation Of Nonfarmable Farmland	25	2	
7. Availability Of Farm Support Services	5	5	
8. On-Farm Investments	20	10	
9. Effects Of Conversion On Farm Support Services	25	1	
10. Compatibility With Existing Agricultural Use	10	1	
TOTAL CORRIDOR ASSESSMENT POINTS		160	76
		0	0
PART VII (To be completed by Federal Agency)			
Relative Value Of Farmland (From Part V)		100	77
		0	0
Total Corridor Assessment (From Part VI above or a local site assessment)		160	76
		0	0
TOTAL POINTS (Total of above 2 lines)		260	153
		0	0
1. Corridor Selected: A	2. Total Acres of Farmlands to be Converted by Project: 22.658	3. Date Of Selection: 8/24/20	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
5. Reason For Selection:			
<i>David Arredondo</i> Signature of Person Completing this Part:		DATE 8/24/20	
NOTE: Complete a form for each segment with more than one Alternate Corridor			

Appendix D Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

DECLARATION OF POLICY

“The purpose of this title is to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole.”

The Fifth Amendment to the U.S. Constitution states, “No Person shall...be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation.” The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

FAIR HOUSING

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require the Department to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business,

farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, the Department will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. The Department will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are “decent, safe, and sanitary.” Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm, and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable “decent, safe, and sanitary” replacement dwelling, available on the market, is offered to them by the Department.

RESIDENTIAL RELOCATION PAYMENTS

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 90 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate.

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by the Department prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when the Department determines that the cost to rent a comparable “decent, safe, and sanitary” replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the Down Payment section below.

To receive any relocation benefits, the displaced person must buy or rent and occupy a “decent, safe and sanitary” replacement dwelling within 1 year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 90 days and tenants in legal occupancy prior to the Department's initiation of negotiations. The 1-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 Code of Federal Regulations 24) contain the policy and procedure for implementing the Last Resort Housing Program on Federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, the Department will, within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.
- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

NONRESIDENTIAL RELOCATION ASSISTANCE

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment, and similar business-related property, including dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the right-of-way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to \$2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to \$25,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than \$1,000 nor more than \$40,000.

ADDITIONAL INFORMATION

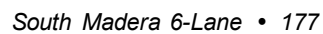
Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, except for any federal law providing local "Section 8" Housing Programs.

Any person, business, farm, or nonprofit organization that has been refused a relocation payment by the Department relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

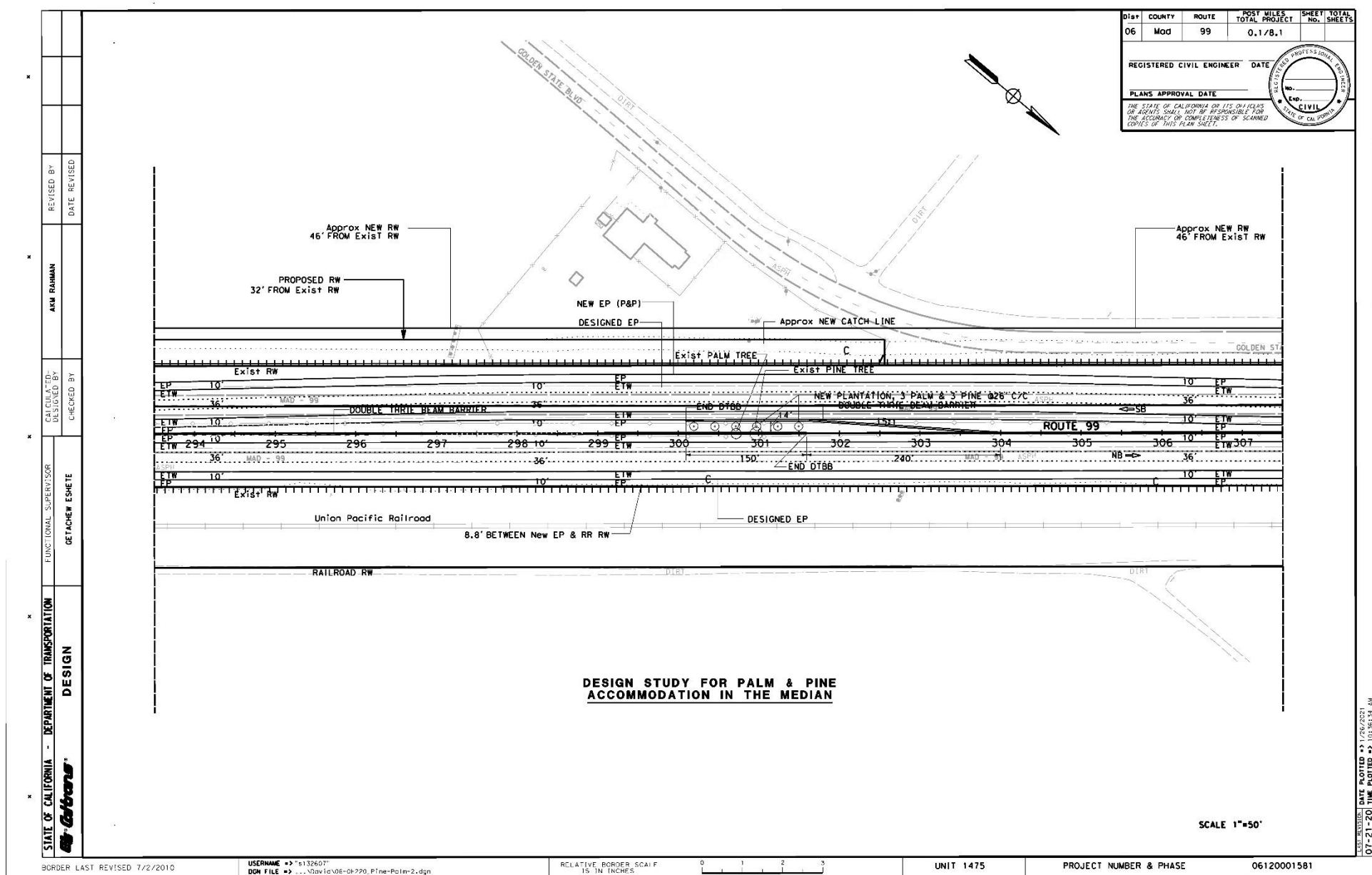
California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from the Department's Division of Right of Way and Land Surveys. California's law and the federal regulations covering relocation assistance

provide that no payment shall be duplicated by other payments being made by the displacing agency.

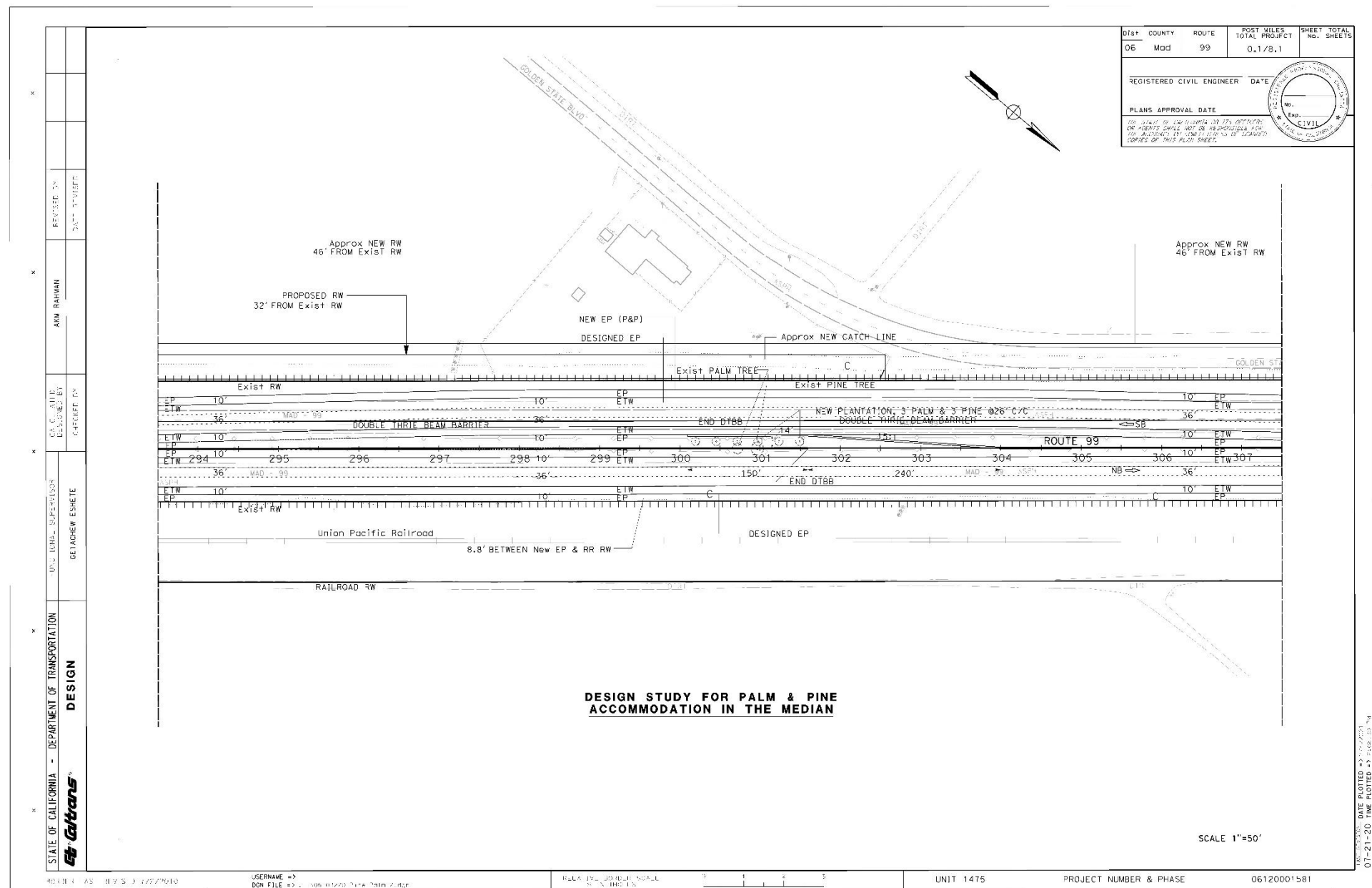
Palm and Pine Alternative 1



Palm and Pine Alternative 2



Palm and Pine Alternative 3


 DATE PLOTTED: 07-21-20
 PLOTTER: 43106

Appendix F State Office of Historic Preservation Concurrence Letter



State of California • Natural Resources Agency

Gavin Newsom, Governor

**DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION**

Armando Quintero, Director

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

November 3, 2020

VIA EMAIL

In reply refer to: FHWA_2020_0908_001

Ms. Aubrie Morlet, Branch Chief
Southern San Joaquin Valley Cultural Resources Branch
Caltrans District 6
855 M Street, Suite 200
Fresno, CA 93721-2716

Subject: Determinations of Eligibility for the Proposed State Route 99 South Madera 6-Lane Project, South of Madera, Madera County, CA

Dear Ms. Morlet:

Caltrans is initiating consultation regarding the above project in accordance with the January 1, 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). As part of your documentation, Caltrans submitted a Historic Property Survey Report (HPSR), Historical Resources Evaluation Report (HRER) and Archaeological Survey Report for the proposed project.

The California Department of Transportation, in cooperation with the County of Madera, proposes to widen and realign State Route 99 from a four-lane to a six-lane freeway with 10-foot shoulders south of the city of Madera. The project extends from just south of Avenue 7 at post mile 0.1 to north of Avenue 12 Overpass at post mile 8.1. The proposed project would improve traffic circulation, address safety concerns, and provide a transportation facility consistent with Caltrans Standards. A full description and depiction of the Area of Potential Effects (APE) can be found on pages one through two and Figure 3 of the HPSR.

Pursuant to Stipulation VIII.C.6 of the PA, Caltrans determined that the following properties are not eligible for the National Register of Historic Places:

- 8241 Road 32, Madera, CA
- 9465 Golden State Boulevard, Madera, CA
- 9486 Golden State Boulevard, Madera, CA
- 9510 Golden State Boulevard, Madera, CA

Ms. Morlet
November 3, 2020
Page 2 of 2

FHWA_2020_0908_001

- 9522 Golden State Boulevard, Madera, CA
- 9532 Golden State Boulevard, Madera, CA
- 9542 Golden State Boulevard, Madera, CA
- 9554 Golden State Boulevard, Madera, CA
- 9564 Golden State Boulevard, Madera, CA
- 9576 Golden State Boulevard, Madera, CA
- 9586 Golden State Boulevard, Madera, CA
- 9598 Golden State Boulevard, Madera, CA
- 9610 Golden State Boulevard, Madera, CA
- 9620 Golden State Boulevard, Madera, CA
- 9758 Golden State Boulevard, Madera, CA
- 10597 Golden State Boulevard, Madera, CA

Based on review of the submitted documentation, I concur with the above determinations.

If you have any questions, please contact Natalie Lindquist at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov.

Sincerely,



Julianne Polanco
State Historic Preservation Officer

Appendix G Air Quality Conformity

From: OConnor, Karina <OConnor.Karina@epa.gov>

Sent: Tuesday, August 11, 2020 4:46 PM

To: Hildebrand, Maya@DOT; Alex Marcucci; Bagde, Abhijit J@DOT; Ahron Hakimi (ahakimi@kerncog.org); Arellano, Alexis@DOT; Andrew Chesley (chesley@sjcog.org); Lee, Anita; Mahaney, Ann@DOT; Anna Myers; Antonio Johnson; Becky Napier (bnapier@kerncog.org); Ben Giuliani (BGiuliani@tularecog.org); Ben Raymond; Braden Duran; De Terra, Bruce W@DOT; Knecht, Carey@ARB; Chris Jasper; Christopher Xiong; Crystal Yunker; Deel, David@DOT; Cheser, Dawn@CATC; Debbie Trujillo; Derek Winning; Diane Nguyen (nguyen@sjcog.org); Dylan Stone (dylan@maderactc.org); Ed Flickinger; Edith Robles; Elisabeth Hahn; Elizabeth Wright (EWright@tularecog.org); Thompson, Erin M@DOT; Gabriel Gutierrez (ggutierrez@tularecog.org); Valencia, Gilbert@DOT; King, Heather@ARB; External, IOjeda@DOT; Kahrs, Jacqueline J@DOT; Gentry, Jamaica@DOT; Perrault, James R@DOT; Jasmine Amanin; Jeff Findley (Jeff@maderactc.org); Jennifer Soliz; Jessica Coria; Joseph Stramaglia (jstramaglia@kerncog.org); Joseph Vaughn (Joseph.Vaughn@dot.gov); Swearingen, Joshua B@DOT; Kai Han (khan@fresnocog.org); Kasia Poleszczuk; Romero, Ken J@DOT; Mariant, Kevin B@DOT; Kevin Wing; Vu, Khanh D@DOT; Kim Kloeb (kloeb@sjcog.org); Kristine Cai (kcai@fresnocog.org); Lang Yu; Carr, Laura@ARB; Lawrence, Laura; Kimura, Lezlie@ARB; Huy, Lima A@DOT; Mendibles, Lorena@DOT; Sanchez, Lucas@DOT; Evans, Marcus B@DOT; Mark Hays; Matt Fell; Navarro, Michael@DOT; Aljabiry, Muhaned M@DOT; Kalandiyur, Nesamani@ARB; Fung, Nicholas@DOT; Patricia Taylor (patricia@maderactc.org); Marquez, Paul Albert@DOT; Ramirez, Pedro@DOT; Martinez- Velez, Priscilla@DOT; Raquel Pacheco (rpacheco@kerncog.org); Rob Ball (rball@kerncog.org); Robert Phipps; Roberto Brady (RBrady@tularecog.org); Rochelle Invina; Tavitaz, Rodney A@DOT; Mays, Rory; Rosa Park (rpark@stancog.org); Ryan Niblock (niblock@sjcog.org); Yazdi, Sadegh@DOT; Scherr, Sandra L@DOT; Santosh Bhattacharai; Scott Carson; Christian, Shalanda M@DOT; Martinez, Steven R@DOT; Suzanne Martinez; Vanderspek, Sylvia@ARB; Tashia Clemons; Ted Matley (Ted.Matley@fta.dot.gov); Ted Smalley (tsmalley@tularecog.org); Terri King (terri.king@co.kings.ca.us); Dumas, Thomas A@DOT; tom.jordan@valleyair.org; Tony Boren; Tray Wadsworth; Ty Phimmasone (ty.phimmasone@mcagov.org); Vincent Liu (vliu@kerncog.org); Tasat, Webster@ARB; Choi, Yoojoong@DOT

Subject: RE: Request for Further Info - Caltrans S Madera 6-Lane PM2.5 and PM10

EXTERNAL EMAIL. Links/attachments may not be

EPA concurs that this is not a project of air quality concern.

Thanks, Karina

Karina OConnor Air Planning Office

US EPA Region 9 (AIR-2)

75 Hawthorne St.

San Francisco, CA 94105 (775) 434-8176

oconnor.karina@epa.gov

From: Vaughn, Joseph (FHWA) <Joseph.Vaughn@dot.gov>

Sent: Thursday, August 13, 2020 12:27 PM

To: Hildebrand, Maya@DOT; Alex Marcucci; Bagde, Abhijit J@DOT; Ahron Hakimi (ahakimi@kerncog.org); Arellano, Alexis@DOT; chesley sjcog.org; Anita Lee; Mahaney, Ann@DOT; Anna Myers; Johnson, Antonio (FHWA); Becky Napier (bnapier@kerncog.org); Ben Giuliani (BGiuliani@tularecog.org); Ben Raymond; Braden Duran; De Terra, Bruce W@DOT; Knecht, Carey@ARB; Chris Jasper; Christopher Xiong; Crystal Yunker; Deel, David@DOT; Cheser, Dawn@CATC; Debbie Trujillo; Derek Winning; Diane Nguyen (nguyen@sjcog.org); Dylan Stone (dylan@maderactc.org); Ed Flickinger; Edith Robles; Elisabeth Hahn; Elizabeth Wright (EWright@tularecog.org); Thompson, Erin M@DOT; Gabriel Gutierrez (ggutierrez@tularecog.org); Valencia, Gilbert@DOT; King, Heather@ARB; External, IOjeda@DOT; Kahrs, Jacqueline J@DOT; Gentry, Jamaica@DOT; Perrault, James R@DOT; Amanin, Jasmine (FHWA); Jeff Findley (Jeff@maderactc.org); Jennifer Soliz; Jessica Coria; Joseph Stramaglia (jstramaglia@kerncog.org); Swearingen, Joshua B@DOT; Kai Han (khan@fresnocog.org); Karina O'Connor (OConnor.Karina@epamail.epa.gov); Kasia Poleszczuk; Romero, Ken J@DOT; Mariant, Kevin B@DOT; Kevin Wing; Vu, Khanh D@DOT; Kim Klob (klob@sjcog.org); Kristine Cai (kcai@fresnocog.org); Lang Yu; Carr, Laura@ARB; Laura Lawrence; Kimura, Lezlie@ARB; Huy, Lima A@DOT; Mendibles, Lorena@DOT; Sanchez, Lucas@DOT; Evans, Marcus B@DOT; Mark Hays; Matt Fell; Navarro, Michael@DOT; Aljabiry, Muhaned M@DOT; Kalandiyur, Nesamani@ARB; Fung, Nicholas@DOT; patricia maderactc.org; Marquez, Paul Albert@DOT; Ramirez, Pedro@DOT; Martinez-Velez, Priscilla@DOT; Raquel Pacheco (rpacheco@kerncog.org); Rob Ball (rball@kerncog.org); Robert Phipps; Roberto Brady (RBrady@tularecog.org); Rochelle Invina; Tavitas, Rodney A@DOT; Rory Mays; Rosa Park (rpark@stancog.org); Ryan Niblock (niblock@sjcog.org); Yazdi, Sadegh@DOT; Scherr, Sandra L@DOT; Santosh Bhattarai; Carson, Scott (FHWA); Christian, Shalanda M@DOT; Martinez, Steven R@DOT; Suzanne Martinez; Vanderspek, Sylvia@ARB; Clemons, Tashia (FHWA); Matley, Ted (FTA); Ted Smalley (tsmalley@tularecog.org); terri.king.co.kings.ca.us; Dumas, Thomas A@DOT; Tom Jordan; Tony Boren; Tray Wadsworth; Ty Phimmason (ty.phimmason@mcagov.org); Vincent Liu (vliu@kerncog.org); Tasat, Webster@ARB; Choi, Yoojoong@DOT

Subject: RE: Request for Further Info - Caltrans S Madera 6-Lane PM2.5 and PM10

EXTERNAL EMAIL. Links/attachments may not be

FHWA concurs that this is not a project of air quality concern. Thanks.

Joseph Vaughn Environmental Specialist FHWA, CA Division

(916) 498-5346

Appendix H Predicted Future Noise and Barrier Analysis

Predicted Future Noise and Barrier Analysis

Receptor	Location	Soundwall Number	Existing Noise Level (Decibels)	Predicted Noise Levels No-Build Alternative (Decibels)	Predicted Noise Levels Build Alternative (Decibels)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with 8-Foot Wall (Decibels)	Predicted Noise Level with 10-Foot Wall (Decibels)	Predicted Noise Level with 12-Foot Wall (Decibels)	Predicted Noise Level with 14-Foot Wall (Decibels)	Predicted Noise Level with 16-Foot Wall (Decibels)	Feasible	Reasonable
Receptor 1	7628 Golden State Boulevard, Madera, California, 93637	Soundwall 1	65	67	67	Yes	65	65	62	61	60	Yes	No
Receptor 2	7770 Road 33, Madera, California, 93637	Not Applicable	69	71	71	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 3	8177 Road 32, Madera, California, 93637	Soundwall 2	73	75	75	Yes	72	70	68	66	65	Yes	No
Receptor 4	31664 Avenue 9, Madera, California, 93637	Not Applicable	67	69	69	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 5	9456 Golden State Boulevard, Madera, California, 93637	Soundwall 3	72	74	74	Yes	71	70	67	65	65	Yes	No
Receptor 6	9576 Golden State Boulevard, Madera, California, 93637	Soundwall 3	70	72	72	Yes	71	70	67	65	65	Yes	No
Receptor 7	9758 Golden State Boulevard, Madera, California, 93637	Soundwall 3	72	74	74	Yes	71	70	67	65	65	Yes	No

Receptor	Location	Soundwall Number	Existing Noise Level (Decibels)	Predicted Noise Levels No-Build Alternative (Decibels)	Predicted Noise Levels Build Alternative (Decibels)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with 8-Foot Wall (Decibels)	Predicted Noise Level with 10-Foot Wall (Decibels)	Predicted Noise Level with 12-Foot Wall (Decibels)	Predicted Noise Level with 14-Foot Wall (Decibels)	Predicted Noise Level with 16-Foot Wall (Decibels)	Feasible	Reasonable
Receptor 8	10597 Road 30, Madera, California, 93637	Soundwall 4	64	66	66	Yes	65	65	62	61	60	Yes	No
Receptor 9	10696 Highway 99, Madera, California, 93637	Soundwall 4	64	66	66	Yes	65	65	62	61	60	Yes	No
Receptor 10	10696 Road 30, Madera, California, 93637	Not Applicable	63	65	65	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 11	11674 Road 29, Madera, California, 93637	Soundwall 5	65	67	67	Yes	66	65	63	62	62	Yes	No
Receptor 12	11856 Road 29, Madera, California, 93637	Not Applicable	63	65	65	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Receptor 13	9677 Road 33 1/2 Madera, California, 93637	Not Applicable	66	68	68	No	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Appendix I Noise Receptor Location Map

Noise Receptor Soundwall 1 Location



Noise Receptor Soundwall 2 Location



Noise Receptor Soundwall 3 Location



Noise Receptor Soundwall 3 Location (continued)



Noise Receptor Soundwall 4 Location



Noise Receptor Soundwall 5 Location



Appendix J Species Lists



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:
Consultation Code: 08ESMF00-2018-SLI-0930
Event Code: 08ESMF00-2021-E-01533
Project Name: South Madera 6-Lane

December 15, 2020

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

To Whom It May Concern:

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

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

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

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

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

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

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

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

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

12/15/2020

Event Code: 08ESMF00-2021-E-01533

3

Attachment(s):

- Official Species List

12/15/2020

Event Code: 08ESMF00-2021-E-01533

1

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

12/15/2020

Event Code: 08ESMF00-2021-E-01533

2

Project Summary

Consultation Code: 08ESMF00-2018-SLI-0930

Event Code: 08ESMF00-2021-E-01533

Project Name: South Madera 6-Lane

Project Type: TRANSPORTATION

Project Description: This project proposes to complete the widening of State Route 99 in Madera County from 4 lanes to 6 lanes from Ave 7 to Ave 12 (PM 1.7 – 7.5).

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.887729344231175N119.98421072959903W>



Counties: Madera, CA

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Fresno Kangaroo Rat <i>Dipodomys nitratoides exilis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard <i>Gambelia silus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

12/15/2020

Event Code: 08ESMF00-2021-E-01533

4

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

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

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Fleshy Owl's-clover <i>Castilleja campestris</i> ssp. <i>succulenta</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
Hairy Orcutt Grass <i>Orcuttia pilosa</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2262	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Quad IS (Gregg (3611988) OR Biola (3612071) OR Herndon (3611978) OR Madera (3612081))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branchinecta mesoatlantica</i> midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Castilleja campestris</i> var. <i>succulenta</i> succulent owl's-clover	PDSCR03Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S3	
<i>Gambelia sila</i> blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Layia munzii</i> Munz's tidy-tips	PDAST5N0B0	None	None	G2	S2	1B.2
<i>Leptosiphon serrulatus</i> Madera leptosiphon	PDPLM09130	None	None	G3	S3	1B.2
<i>Lindieriella occidentalis</i> California lindieriella	ICBRA06010	None	None	G2G3	S2S3	
<i>Lytta molesta</i> molestan blister beetle	IICOL4C030	None	None	G2	S2	
<i>Northern Hardpan Vernal Pool</i> Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
<i>Orcuttia pilosa</i> hairy Orcutt grass	PMPOA4G040	Endangered	Endangered	G1	S1	1B.1
<i>Perognathus inornatus</i> San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
<i>Spea hammondi</i> western spadefoot	AAABF02020	None	None	G3	S3	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 19

Appendix K Federal Endangered Species Act Determinations

Species	Status	Possible In Which Habitat Type	Federal Endangered Species Act Determination
Blunt-nosed leopard lizard	Federally Endangered	Semiarid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Common where there are abundant rodent burrows.	No Effect
California red-legged frog	Federally Threatened	Ponds, perennial pools, slow-moving streams, and nearby riparian areas. Can be found in livestock watering impoundments. In the Sierra Nevada, limited to foothill areas below 5,000 feet in elevation.	No Effect
California tiger salamander	Federally Threatened	Cismontane woodland, meadows and seeps, riparian woodland, vernal pools and wetlands, valley and foothill grassland. Need underground refuges and a water source for breeding.	No Effect
Conservancy fairy shrimp	Federally Endangered	Vernal pool complexes part of undulating landscapes, where soil mounds are interspersed with basins, swales, and drainages.	No Effect
Delta smelt	Federally Threatened	Spawns in freshwater but lives in the mixing zone of freshwater and saline water in the Sacramento and San Joaquin estuaries of the San Francisco Bay.	No Effect
Fleshy owl's-clover	Federally Threatened	Vernal pools. Moist places, often in acidic soils at elevations below 2,500 feet. Blooms yellow to orange April to June.	No Effect
Giant garter snake	Federally Endangered	Freshwater marsh and low gradient streams, including drainage ditches and irrigation canals.	No Effect
Hairy orcutt grass	Federally Endangered	Found in vernal pools and wetlands. Blooms May to September. The elevation is less than 660 feet.	No Effect
San Joaquin kit fox	Federally Endangered	Alkali sink, valley grassland, and open woodlands, in valleys and nearby gentle foothills with suitable prey base.	No Effect
Vernal pool fairy shrimp	Federally Threatened	Vernal pool complexes part of undulating landscapes, where soil mounds are interspersed with basins, swales, and drainages.	No Effect

Appendix L 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.

Traffic and Transportation

During construction, a traffic management plan would be developed to handle local traffic patterns, reduce delay, congestion, and the likelihood of accidents during construction. The traffic management plan would include incident management through the Construction Zone Enhanced Enforcement Program to notify the public of construction activities via media outlets, use changeable message signs, and construction strategies. The program would also use the Central Valley Traffic Management Center, which would reduce congestion by monitoring traffic and informing the public via media outlets, such as radio and television.

Visual/Aesthetics

Avoidance, minimization, and/or mitigation measures would be designed and implemented with concurrence from a Caltrans District 6 Landscape Architect.

The following measures would be incorporated into the project to avoid or minimize visual impacts:

- Minimize vegetation removal. Remove only vegetation and shrubs required for the construction of the new roadway facilities. Avoid removing vegetation and shrubs for temporary uses such as construction staging areas or temporary stormwater conveyance systems.

- Where feasible, avoid grading areas where existing vegetation provides screening of nearby properties.

The following mitigation measures would be incorporated into the project to offset visual impacts:

- “Where the Palm Meets the Pine” would be permanently removed from the median and relocated to the southbound shoulder of State Route 99. To compensate for the visual loss in relocating the landmark trees, a single row of 15 palm trees followed by 15 pine trees would be planted on the southbound side about 330 feet south of the existing trees.
- The oleanders in the median would be removed and new oleanders would be planted outside of the roadside a minimum of 55 feet from the edge of the traveled way.

Paleontology

Due to the potential to affect scientifically significant nonrenewable paleontological resources, mitigation would be required. A Caltrans-supplied consultant would prepare a Paleontological Mitigation Plan before construction starts. The plan would recommend the measures required to minimize potential impacts to paleontological resources. The mitigation measures would include:

- Identifying and acknowledging construction site safety protocols.
- Conducting paleontological worker environmental awareness training for all earth-moving personnel and supervisors.
- Conducting mitigation field monitoring of excavation into undisturbed sediments of the Modesto and Riverbank Formations. Excavations from 1 foot to 3 feet below ground surface are to be spot-checked. Continuous or full-time monitoring would be required for excavations deeper than 3 feet.
- Establishing a protective 25-foot radius buffer zone around fossil discovery locations.
- Notifying a Caltrans Resident Engineer upon fossil discovery.
- Processing bulk soil samples for microfossil identification.
- Using plaster casting to stabilize and preserve macrofossils.
- Preparing salvaged fossils for identification to the lowest taxonomic level (preparation for an exhibition is prohibited).
- Curating salvaged fossils at a receiving museum or academic institution.
- Preparing a Paleontological Mitigation Report following completion of all paleontological monitoring activities, documenting compliance with all mitigation measures.

Threatened and Endangered Species

California Tiger Salamander

For work conducted during the California tiger salamander migration season (November 1 to March 31), a qualified biologist would survey active work areas (including access roads) in the morning, following measurable precipitation that measures less than 0.25 inch. Construction may not start until a biologist has confirmed that no California tiger salamanders are in the work area.

Before any ground disturbance, the contractor, all employees of the contractor, subcontractors, and subcontractors' employees would attend an employee education program conducted by a Caltrans biologist or other approved biologist. The program would consist of a brief presentation on California tiger salamanders, legislative protection, and measures to avoid impacts to the species during project implementation.

Swainson's Hawk

Even though the likelihood that a Swainson's hawk would be found on the project site is low, Caltrans proposes the following avoidance and minimization efforts to ensure the project would not result in measurable impacts to this species:

A qualified biologist would complete protocol-level pre-construction surveys during the nesting season (February 1 to September 30). The biologist would complete the surveys before groundbreaking activities to ensure no nesting Swainson's hawks would be affected if construction occurs during the nesting season.

If construction occurs during the nesting season—February 1 to September 30—Swainson's hawk pre-construction surveys shall be conducted within 30 days before construction to determine if Swainson's hawks are nesting within 0.5 mile of the project area. If Swainson's hawks are seen nesting within 0.5 mile of the project area, a 600-foot radius no-work buffer would be designated by an environmentally sensitive area fence around the nest tree wherever the no-work buffer may overlap the project construction limits. A qualified biologist shall monitor the nest tree during construction activities in proximity to the nest until the birds have fledged.

Air Quality

No mitigation is required for impacts to air quality. However, several measures can be taken to minimize impacts from both construction-related impacts and operational impacts. Such actions are:

- The addition of paved shoulders in the project area would minimize Particulate Matter 10 emissions by eliminating the emission of road dust when vehicles pull off of the roadway.
- The project would be subject to the San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review rule) that applies to construction equipment emissions for transportation projects that exceed 2 tons of either Particulate Matter 10 and/or nitrogen oxide air pollutants. Compliance with the rule would ensure that any unexpected impacts are minimized. The construction contractor would be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees. The analysis estimates the construction equipment emissions. The contractor can choose to reduce the emissions by using a construction fleet that is cleaner than the California state average, or if emissions exceed the limits, the contractor can make the payment of fees to the San Joaquin Valley Air Pollution Control District.
- Caltrans' Standard Specifications that pertain to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans' Standard Specifications, Section 14-9.02 "Air Pollution Control" and Section 14-9.03 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

Noise

Based on the studies completed to date, Caltrans does not intend to incorporate noise abatement in the form of soundwalls for the proposed project. If during final design, conditions have substantially changed, noise abatement may be necessary. The final decision on noise abatement would be made upon completion of the project design and the public involvement process.

Construction Noise

The following control measures would be implemented to minimize noise disturbances at sensitive areas during construction:

- All equipment shall have sound-control devices no less effective than those provided on the original equipment. Each internal combustion engine used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine should be operated on the job site without an appropriate muffler.
- Construction methods or equipment that will provide the lowest level of noise impact should be used.
- Idling equipment shall be turned off.

- Truck loading, unloading, and hauling operations shall be restricted so that noise and vibration are kept to a minimum through residential neighborhoods to the greatest possible extent.
- Construction activities shall be coordinated to build recommended permanent soundwalls during the first phase of construction to protect sensitive receptors from subsequent construction noise, dust, light, glare, and other impacts, to the extent feasible.
- Temporary noise barriers shall be used and relocated, as needed, to protect sensitive receptors against excessive noise from construction activities involving large equipment and by small items such as compressors, generators, pneumatic tools, and jackhammers.
- Newer equipment with improved noise muffling shall be used, and all equipment items shall have the manufacturers' recommended noise abatement measures (such as mufflers, engine covers, and engine vibration isolators) intact and operational. All construction equipment shall be inspected at periodic intervals to ensure proper maintenance and presence of noise-control devices (such as mufflers and shrouding).
- Construction activities shall be minimized in residential areas during the evening, nighttime, weekend, and holiday periods. Noise impacts are typically minimized when construction activities are performed during daytime hours. However, nighttime construction may be desirable (such as in commercial areas where businesses may be disrupted during daytime hours) or necessary to avoid major traffic disruption. Coordination with the city or county shall occur before construction can be performed in noise-sensitive areas between 9:00 in the evening and 6:00 in the morning.
- Construction laydown or staging areas shall be selected in industrially zoned districts. If industrially zoned areas are not available, commercially zoned areas may be used, or locations that are at least 100 feet from any noise-sensitive land use (such as homes, hotels, and motels).
- Contractor shall prepare a Noise and Vibration Monitoring and Mitigation Plan by a qualified acoustical engineer and submit it for approval. The plan must outline noise and vibration monitoring procedures at predetermined noise and vibration sensitive sites and historic properties.
- Restrict the hours of vibration-intensive equipment or activities such as vibratory rollers so that impacts to residents are minimal (e.g., weekdays during daytime hours only when as many residents as possible are away from home).
- The owner of a building close enough to a construction vibration source that could potentially damage that structure due to vibration, would be entitled to a pre-construction building inspection to document the pre-construction condition of that structure.
- Conduct vibration monitoring during vibration-intensive activities.

The contractor would be required to adhere to the following administrative noise control measures:

- Once details of the construction activities become available, the contractor shall work with local authorities to develop an acceptable approach to minimize interference with the business and residential communities, traffic disruptions, and the total duration of the construction.
- Good public relations shall be maintained with the community to minimize objections to unavoidable construction impacts. Frequent activity updates of all construction activities shall be provided. A construction noise monitoring program to track sound levels and limit the impacts shall be implemented.
- In case of construction noise complaints by the public, a Caltrans Resident Engineer shall coordinate with the construction manager, and the specific noise-producing activity may be changed, altered, or temporarily suspended, if necessary.

Climate Change

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project. Caltrans staff will enhance the environmental training provided for contractor staff by adding a module on greenhouse gas reduction strategies.

The contractor would be required to:

- Reduce construction waste and maximize the use of recycled materials wherever possible (reduces the consumption of raw materials, reduces landfill waste, and encourages cost savings).
- Incorporate measures to reduce the use of potable water.

Seek to operate construction equipment with improved fuel efficiency by:

- Properly tuning and maintaining equipment.
- Limiting equipment idling time.
- Using the right-size equipment for the job.
- Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions also help reduce greenhouse gas emissions.
- In disturbed areas, use compost and native hydroseed mix to promote revegetation success and provide erosion control. Vegetation helps sequester carbon dioxide.
- Limit idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment.

- Schedule truck trips outside of peak morning and evening commute hours.
- Install Continuously Reinforced Concrete Pavement to lower the rolling resistance of the highway. In 2008, the California Department of Transportation (Caltrans) conducted a study to measure and compare the fuel economy of vehicles traveling on different pavement types. Vehicles on concrete pavements had 2 percent less fuel consumption.
- Use ultra-reflective sign materials that are illuminated by headlights. Current overhead signs are illuminated with an external light source that requires electricity. The new ultra-reflective sign materials do not use electricity.
- For ease of maintenance vehicle movement, a Class 2 aggregate base roadway that is 16 feet wide and 8 inches thick would be built around each basin. Class 2 aggregate base materials have lower greenhouse gas emissions than concrete or hot mix asphalt materials.
- The project would match the existing grade and would reduce earthwork. The matching grade would avoid the need for excavating excess material or filling with an imported borrow. This would avoid the use of heavy machinery for excavation, trucks for bringing in imported borrow, and compactors for compacting the imported borrow.
- Lengthen lane closure duration to reduce necessary mobilization efforts.

Increased Lane Closure Length—A lane closure that is 1 mile long would be proposed in the construction specifications for this project. Doubling the lane closure length from a standard 0.5-mile length to 1 mile would double the production of work during each shift requiring lane closures. This would result in reduced greenhouse gas emissions due to the reduced number of working days requiring lane closures and reduced construction mobilization associated with setup and removal of temporary lane closures.

Increased Lane Closure Duration—An expanded work window of 10 hours would be proposed in the construction specifications for this project. A 10-hour lane closure for every shift requiring temporary traffic control would allow 25 percent more production to be completed during each shift. This would result in reduced greenhouse gas emissions due to the reduced number of working days requiring lane closures and reduced construction mobilization associated with setup and removal of temporary lane closures.

Measures to reduce operational greenhouse gas emissions would include the following:

- Design and install long-life pavement structures to minimize maintenance and life cycle costs. The structural section for this project would be Continuously Reinforced Concrete Pavement. Continuously Reinforced Concrete Pavement would last about 40 to 50 years with virtually no rehabilitation or maintenance. Continuously Reinforced Concrete

Pavement would reduce the life cycle cost, maintenance cost and would contribute to fuel savings, reducing greenhouse gas emissions.

- Swales and detention basins would be designed to convey and retain stormwater. They would be treated with native or drought-tolerant grasses and forbs that nurture infiltration. This would reduce dependence on mechanical equipment, concrete channels, and drainage systems that would produce greenhouse gas emissions to move and treat stormwater.
- Trees would be preserved wherever feasible to minimize the loss of tree covering within the proposed project limits. Trees that must be removed for project construction would be replaced at a 15 to 1 ratio. Fifteen trees will be planted for every tree removed.
- Provide native and drought-tolerant seed mix on disturbed slopes and exposed soils. The project would maximize the use of compost as opposed to synthetic fertilizers to improve soil health.
- Implement intelligent transportation systems and traffic demand management elements to smooth traffic flow and increase system efficiency. Overhead changeable message signs would be installed at two locations to inform northbound and southbound traffic of congestion.
- Install level two electric vehicle chargers for public use. Potential sites include roadside rest areas, park and ride areas, and district facilities. Locations would be determined during the Plans, Specifications, and Estimates phase of the project.
- Monitoring program for travel information—Five years after the project has been built, Caltrans would prepare a traffic growth report for the project segment. The report would compare the growth that has occurred to what was forecasted during project development and what was indicated in the travel demand model for the project. The report would be provided to Caltrans Headquarters to assess how accurate forecasting and travel demand model growth rates were for this project and how they could be applied to future transportation projects.

List of Technical Studies

Air Quality Report, November 2020

Noise Study Report, October 2016, addendum December 2020

Water Quality Report, December 2019

Natural Environment Study (Minimal Impacts), January 2020

Location Hydraulic Study, July 2015, Supplemental June 2019

Hazardous Waste Reports

- Initial Site Assessment, May 2019
- Preliminary Site Investigation, September 2019

Visual Impact Assessment, December 2020

Paleontology Studies

- Paleontological Identification Report, July 2019
- Paleontological Evaluation Report and Preliminary Paleontological Mitigation Plan, November 2020

Historical Property Survey Report, August 2020

- Historic Resource Evaluation Report
- Archaeological Survey Report

To obtain a copy of one or more of these technical studies/reports or the Initial Study/Environmental Assessment, please send your request to the following email address: d6.public.info@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).