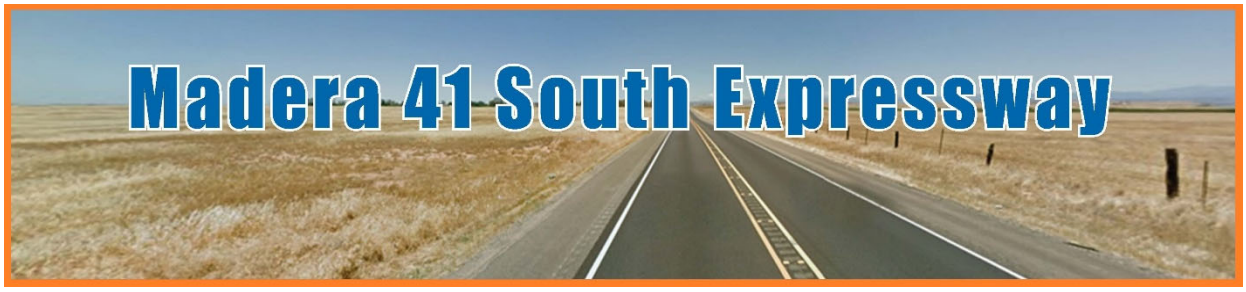
Madera 41 South Expressway

On State Route 41 from 0.8 mile south of the Avenue 11 Undercrossing
to 1.4 miles north of Avenue 15 in Madera County
06-MAD-41-PM 1.5/7.6
06-0R040/06-1300-0309
SCH# 2015051074

Final Environmental Impact Report/ Environmental Assessment and Section 4(f) Evaluation with Finding of No Significant Impact



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.C. 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

March 2020

General Information About This Document

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Final Environmental Impact Report/Environmental Assessment (EIR/EA) for the proposed project in Madera County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA), and Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives have been 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.

The Draft Environmental Impact Report/Environmental Assessment circulated to the public for 45 days between December 23, 2016 and February 8, 2017. Comments received during this period are included in Appendix R. Elsewhere throughout this document, a vertical line in the margin indicates a change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated. Additional copies of this document and the related technical studies are available for review at the Caltrans district office at 1352 W. Olive Avenue, Fresno, CA 93728. Electronic copies of this document may be requested by emailing Richard.putler@dot.ca.gov.

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, Attn: Richard Putler, Senior Environmental Planner, Southern San Joaquin Valley Management Branch 1, California Department of Transportation, 855 M Street, Fresno, CA 93721; phone number 559-445-5286 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

SCH# 2015051074
06-MAD-41-PM 1.5/7.6
06-0R040/06-1300-0309

Widen and realign State Route 41 from 0.8 mile south of the Avenue 11 undercrossing to 1.4 miles north of Avenue 15 (post mile 1.5 to post mile 7.6) in Madera County

FINAL ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation with Finding of No Significant Impact

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

THE STATE OF CALIFORNIA
Department of Transportation
and
Madera County
Madera County Transportation Commission

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

3/26/2020
Date

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CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

Madera 41 South Expressway

The California Department of Transportation (Caltrans) has determined that Alternative 4 will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA.

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 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

3/26/2020
Date

Jennifer H. Taylor
Jennifer H. Taylor, Division Chief (Acting)
Central Region Environmental Division
California Department of Transportation

Summary

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

Caltrans, in cooperation with the County of Madera, proposes to improve 6.1 miles of State Route 41 from 0.8 mile south of the Avenue 11 undercrossing to 1.4 miles north of Avenue 15 (post miles 1.5 to 7.6) in Madera County. The project lies in southeast Madera County, about 15 miles east of the City of Madera, immediately north of the Fresno/Madera County line (the San Joaquin River). Sitting west of the foothills of the Sierra Nevada Mountains, this segment of State Route 41 passes through gently rolling terrain consisting mostly of agricultural lands and two isolated rural subdivisions before the highway enters the foothills.

The project limits begin 0.8 mile south of the Avenue 11 undercrossing and end 1.4 miles north of Avenue 15. South of Avenue 12, the existing State Route 41 is a four-lane freeway that transitions to a three-lane rural highway (one lane northbound, two lanes southbound). North of Avenue 12, the existing State Route 41 is a two-lane rural highway.

Two Build Alternatives (Alternatives 2 and 4) and a No-Build Alternative are under consideration and Caltrans has identified Alternative 4 as the preferred alternative. Both Build Alternatives include a new structure over Avenue 11 (undercrossing), new crossings (box culverts) at the Madera Canal and Lateral 6.2 canal, frontage roads, and controlled access. All intersections would be at grade (ground level) but would preserve enough right-of-way for future freeway interchanges at Avenues 12 and 15. The future freeway interchange at Avenue

15 would require improvements to approximately half a mile of Avenue 15 to transition into the interchange.

The No-Build Alternative would keep State Route 41 in its existing condition, although routine maintenance projects would continue.

State Route 41 is a Federal-Aid National Highway System Route functionally classified as a principal arterial from the San Luis Obispo County line to its end at the entrance to Yosemite National Park in Mariposa County. It is also a State Terminal Access (STA) route that allows use by specific larger trucks under the Federal Surface Transportation Act of 1982 (STAA). The route is also listed on the National Highway Network, is designated as Regionally Significant, and is listed on the Interregional Route System as a High Emphasis Route within the project area.

In February 1995, a Tier I Route Adoption was approved for a transportation corridor alignment for State Route 41 in Fresno and Madera counties. The transportation corridor ran from El Paso Avenue in the City of Fresno in Fresno County (post mile R31.2) to about 1 mile north of the junction of State Route 41 and State Route 145 in Madera County (post mile 10.4). Four alternatives were evaluated during the study, and Alternative B was identified as the preferred alignment. The California Transportation Commission formally adopted the alignment on February 23, 1995. Later, a Freeway Agreement dated May 23, 1995 between Caltrans and the County of Madera also identified Alternative B as the adopted alignment. Later, a Tier II document was approved in February 1996 for construction of a freeway between Friant Road in Fresno County (post miles R31.7 to 33.5) and Avenue 12 in Madera County (post miles 0.0 to 3.2).

The Madera 41 South Expressway project would be the next construction project planned for State Route 41 and would modify the previously adopted alignment between Avenue 12 and 1.4 miles north of Avenue 15 (post miles 3.2 to 7.6).

Circulation of the Draft Environmental Impact Report/Environmental Assessment document occurred in December 2016.This Final Environmental Impact Report/Environmental Assessment responds to comments received during the public circulation period.

Purpose and Need

The purpose of the proposed project is to address the increased traffic associated with existing and planned development along State Route 41 to and from Fresno and Madera counties while relieving congestion and improving traffic flow, plus identifying a route for future transportation projects.

State Route 41 is the main access road to the foothill communities of Coarsegold and Oakhurst, and offers an alternate route to the town of Mariposa. It also provides access to many recreation areas within the Sierra National Forest and provides the southern entrance into Yosemite National Park.

The existing State Route 41 is a four-lane freeway north of the Fresno/Madera County line for about 2 miles before it transitions to a two-lane rural highway at Avenue 12.

The transition segment of State Route 41 south of Avenue 12 from post miles 1.5 to 3.0 becomes congested during peak traffic hours and is expected to worsen as the traffic numbers increase due to the planned development along State Route 41. The Caltrans traffic forecasts indicate additional capacity is required to meet the future travel demands expected from these developments.

Madera County has approved several major developments along both sides of State Route 41 in the project area, and several more major developments are planned. The planned development is expected to increase the need for improved local circulation.

Madera County has approved planned development in the area of southeast Madera County that conflicts with a segment of the preferred alternative (Alternative B) adopted by the California Transportation Commission in 1995, and conflicts with the 1995 Freeway Agreement between Madera County and Caltrans. Therefore, the alignment adopted for a future State Route 41 freeway from Avenue 12 to 1.4 miles north of Avenue 15 (post miles 3.2 to 7.6) must be reevaluated.

Proposed Action

Caltrans, in cooperation with the County of Madera, proposes to improve 6.1 miles of State Route 41 from 0.8 mile south of the Avenue 11 undercrossing to 1.4 miles north of Avenue 15 (post miles 1.5 to 7.6) in southeast Madera County. The project would construct a divided four-lane expressway with controlled access on enough right-of-way so that, as traffic volumes increase and funding becomes available, the facility could expand to an eight-lane freeway between Children's Boulevard (Avenue 10) and Avenue 12, and expand to a six-lane freeway north of Avenue 12. The segment of the proposed project south of Avenue 12 would be constructed mostly within the existing right-of-way.

Two Build Alternatives (Alternatives 2 and 4) and a No-Build Alternative are under consideration. Both Build Alternatives include a new structure over the Avenue 11 undercrossing, new culverts at the Madera Canal and Lateral 6.2 canal, frontage roads, and controlled access. All expressway intersections would be at grade (ground level) but would preserve enough right-of-way for future freeway interchanges at Avenue 12 and Avenue 15. The future freeway interchange at Avenue 15 would require improvements to about half a mile of Avenue 15 to transition into the interchange. The No-Build Alternative would keep State Route 41 in its existing condition, and routine maintenance projects would continue.

Alternative 2, known as the East Alignment, would construct a divided four-lane expressway south of Avenue 12 extending from the divided four-lane freeway (see Figure 1.4). The Alternative 2 alignment curves roughly to the west of the existing State Route 41 alignment north of Avenue 12 to avoid Madera Pools,

which was developed to mitigate environmental impacts of nearby highway projects. Near the Lateral 6.2 canal (south of Avenue 14), Alternative 2 veers northeast and crosses the existing State Route 41 before turning north roughly 600 feet to the east side of the existing State Route 41 past Avenue 15. After crossing the Madera Canal north of Avenue 15, Alternative 2 turns west and transitions back into the existing State Route 41, a two-lane highway. The existing segment of State Route 41 between the Lateral 6.2 canal and the Madera Canal would be converted into a frontage road, and cul-de-sacs would be provided for turnaround.

Alternative 4, known as the Existing Alignment, would construct a divided four-lane expressway extending from the divided four-lane freeway south of Avenue 12 (see Figure 1.5). North of Avenue 12, the Alternative 4 alignment would mostly use the existing State Route 41 alignment and existing right-of-way by constructing the expressway mostly on the west side of the existing State Route 41. Alternative 4 would transition back into the existing State Route 41 north of the Madera Canal. Avenue 15 would be realigned to the north slightly to connect with the local road proposed for planned residential development. The existing State Route 41 from post mile 4.4 to post mile 6.1 would become a frontage road to be used by traffic from the east side of the future expressway. Alternative 4 has been identified as the preferred alternative.

Both Build Alternatives would eliminate driveways and local road access to State Route 41, except at designated intersections, in accordance with Caltrans standards for expressways. Under certain criteria, landlocked parcels with no access to other roads may be granted an access opening for the expressway. However, if the expressway is upgraded to a freeway in the future, no access openings would be permitted. Upgrading to a freeway would not preclude an overcrossing (grade separation) to be constructed at any of the county roads in the future if Madera County developed a project to improve east-west local road circulation.

The following are common features of the Build Alternatives:

Freeway segment south of Avenue 12 (post miles R1.5 to 3.2):

- Constructs a divided four-lane expressway to the north
- Transitions the existing divided four-lane freeway to a divided four-lane expressway
- Constructs an additional structure (undercrossing) over Avenue 11 for southbound traffic
- Includes a median approximately 94 feet wide, which allows for expansion to a six-lane facility with a 70-foot median

Expressway segment north of Avenue 12 (post miles 3.2 to 7.6):

- Constructs a divided four-lane expressway with controlled access
- Constructs new crossings (box culverts) over the Madera Canal and the Lateral 6.2 canal
- Includes a right-of-way corridor about 300 feet wide
- Includes a median about 94 feet wide, which allows for expansion to a six-lane facility with a 70-foot median
- Constructs storm water detention basins
- Raises the profile (height) of new roadway between 3 feet and 5 feet in various locations
- Constructs at-grade intersections (ground level) at Avenue 12 and Avenue 15
- Preserves right-of-way for future freeway interchanges at Avenue 12 and Avenue 15
- Preserves right-or-way for about half a mile of improvements to Avenue 15 to transition into the future interchange

This project is currently included in the 2019 Regional Transportation Plan (RTP) as a Constrained Capacity-Increasing Project and in the 2019 Madera County Federal Transportation Improvement Program (FTIP.) The project will be constructed in two phases, with all phases to be completed by the year 2040 as currently indicated in the Regional Transportation Plan and Federal Transportation Improvement Program. Madera County, in cooperation with Caltrans and the Madera County Transportation Commission (MCTC) developed a financial plan that addresses the project construction phasing timeline. The plan identifies the Madera County Road Impact Fee Program, Enhanced Infrastructure Financing Districts and other developer mitigation fees as the source of funding for the project.

Phased Construction Plan

Alternative 4, the preferred alternative, is proposed to be constructed in two phases. At the southern project limits, Phase 1 will transition the existing divided four-lane freeway near Avenue 10½ to a divided four-lane expressway at Avenue 12. A two-lane undercrossing at Avenue 11 will also be constructed for the southbound traffic alongside the existing undercrossing which will then be solely used for the northbound traffic. North of Avenue 12, the divided four-lane expressway will continue ½ mile south of Avenue 14. In this section, Phase 1 will construct two additional lanes in their ultimate configuration for southbound traffic west of the existing roadway. The existing pavement will then be used for northbound traffic on an interim basis creating a large separation (median) between the two opposing directions of traffic. Continuing north from this point,

the facility will transition into a four-lane conventional highway near the 6.2 Lateral Canal and will extend north of the signalized intersection at Avenue 15. This four-lane conventional highway segment will make use of the existing two-lane roadway by adding lanes to the existing roadway. The four-lane facility will transition back to a two-lane conventional highway approximately 0.4 miles north of the intersection. The conventional highway segment is an interim facility until Phase 2 is constructed and upgrades it to a divided four-lane expressway. The median in this four-lane conventional highway section will be raised. Therefore, only the southbound roadway portion of the conventional highway will have access to the businesses located to the west of State Route 41. There will also be three northbound left-turn pockets on State Route 41 to accommodate turning movements at Avenue 14, Avenue 14½ and approximately ¼ mile south of Avenue 15. A southbound left-turn pocket will be located at Road 204. The median will be wide enough to allow U-turns at these turn pockets.

In Phase 2, the interim pavement in the four-lane expressway section between Avenue 12 and approximately ½ mile south of Avenue 14 will be removed and reconstructed at its ultimate location alongside the southbound pavement constructed in Phase 1. North of this section, the four-lane conventional highway constructed in Phase 1 will be removed and upgraded to a divided four-lane expressway. Acquisition of the property containing businesses to the west of State Route 41 from just south of Avenue 14 to Avenue 15 will be required at this phase. When completed, Phase 2 will result in a divided four-lane expressway extending from the four-lane freeway at the southern end of the project limits to just north of Avenue 15, where it will transition into the existing two-lane conventional highway 1.4 miles north of Avenue 15. The signalized intersections at Avenue 12 and Avenue 15 will be the only break in access control when Phase 2 is completed. Two culverts will also be constructed that span Madera Canal.

Joint California Environmental Quality Act/National Environmental Policy Act
The project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under the California Environmental Quality Act. Caltrans is the lead agency under the National Environmental Policy Act.

Some impacts determined to be significant under the California Environmental Quality Act may not lead to a determination of significance under the National Environmental Policy Act. Because the National Environmental Policy Act is concerned with the significance of the project as a whole, quite often a “lower level” document is prepared for the National Environmental Policy Act. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA), which this document is.

After comments were received from the public and reviewing agencies, this document—the Final Environmental Impact Report/Environmental Assessment—

was prepared. The Final Environmental Impact Report/Environmental Assessment includes responses to comments received on the Draft Environmental Impact Report/Environmental Assessment (see Appendix R) and identifies the preferred alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with the California Environmental Quality Act, and Caltrans will issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with the National Environmental Policy Act. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

Table S.1 provides a brief comparison of the impacts associated with the Build Alternatives under consideration and the No-Build Alternative.

Caltrans has identified Alternative 4 as the recommended preferred alternative because it will have fewer wetland and threatened and endangered species impacts, will allow the project to be built in two phases, and will meet the purpose and need of the project.

S-1 Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 2	Alternative 4 (Preferred Alternative)	No-Build Alternative
Land Use	**Consistent with the Madera County General Plan**	NO, realigns a segment of the 1995 Route Adoption	NO, realigns a segment of the 1995 Route Adoption	NO, not compatible with 1995 Route Adoption
Farmland	Total Acres	Would acquire 223 acres	Would acquire 230 acres	No farmland acquisition
	Prime and Unique	Would acquire 53 acres	Would acquire 59 acres	No farmland acquisition
	Williamson Act	Would acquire 49 acres	Would acquire 27.8 acres	No farmland acquisition
Relocation	**Business Displacements**	None with limited access provided	Relocates 26 businesses	No relocations
	Housing Displacements	None with limited access provided	None with limited access provided	No relocations
	Utility Service Relocation	Would include utility easement for future use Relocates aerial and buried electric lines, telephone lines, cable television lines, and modifies the Madera Canal and Lateral 6.2 canal Some utilities would be relocated for approved developments prior to construction of the project	Would include utility easement for future use Relocates aerial and buried electric lines, telephone lines, cable television lines, and modifies the Madera Canal and Lateral 6.2 canal Some utilities would be relocated for approved developments prior to construction of the project	No relocations
Visual/Aesthetics		Proposed bridges result in moderate impact: visually noticeable by all users	Proposed bridges result in moderate impact: visually noticeable by all users	Landscape would not change
Cultural Resources		Modifies the historically eligible Madera Canal and Lateral 6.2 canal	Modifies the historically eligible Madera Canal and Lateral 6.2 canal	No changes to resources
Water Quality		Requires four storm water detention basins requiring 71 acres of excavation Approximately 370 acres of disturbed soil area (DSA) Results in 65 acres of net impervious (solid) surface area	Requires 5 storm water detention basins requiring 88 acres of excavation Approximately 285 acres of disturbed soil area (DSA) Results in 55 acres of net impervious (solid) surface area	No change to existing drainage
Paleontology		Would impact high sensitivity paleontological resources of	Would impact high sensitivity paleontological resources of	No excavation would occur

Potential Impact	Alternative 2	Alternative 4 (Preferred Alternative)	No-Build Alternative
	the Modesto and Turlock Lake formations	the Modesto and Turlock Lake formations	
Hazardous Waste/Materials	Further investigation for hazardous waste required due to gas station acquisition	Further investigation for hazardous waste recommended	No testing required
Noise and Vibration	No noise abatement is needed because traffic noise would be moved away from existing receptors	Noise abatement is recommended because traffic noise is moved closer to existing receptors	No added noise
Natural Communities	Impact to Vernal Pool Communities within biological study area: Permanent = 1.19 acres Temporary = 0.51 acre	Impact to Vernal Pool Communities within biological study area: Permanent = 1.54 acres Temporary = 0.61 acre	No change to existing environment
Wetlands	Estimated WETLANDS Impacts: Permanent = 3.56 acres Temporary = 2.44 acres	Estimated WETLANDS Impacts: Permanent = 1.24 acres Temporary = 2.48 acres	No change to existing environment
Other Waters of U.S.	Estimated WATERS impacts: Permanent = 1.44 acres Temporary = 3.16 acres	Estimated WATERS impacts: Permanent = 3.96 acres Temporary = 0.95 acre	No change to existing environment
Plant Species	Sanford's arrowhead habitat impacts: Permanent = 1.15 acres Temporary = 0.68 acre	Sanford's arrowhead habitat impacts: Permanent = 3.19 acres Temporary = 0.08 acre	No change to existing environment
	Spiny-sepaled button celery habitat impacts: Permanent = 4.75 acres Temporary = 2.95 acres	Spiny-sepaled button celery habitat impacts: Permanent = 2.78 acres Temporary = 3.10 acres	No change to existing environment
	Brassy bryum habitat impacts: Permanent = 80.66 acres Temporary = 42.49 acres	Brassy bryum habitat impacts: Permanent = 104.67 acres Temporary = 54.34 acres	No change to existing environment
Animal Species	Burrowing owl habitat impacts: Permanent = 143.47 acres Temporary = 71.93 acres	Burrowing owl habitat impacts: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment
	Bat species habitat impacts: Permanent = 200.81 acres Temporary = 79.51 acres	Bat species habitat impacts: Permanent = 199.13 acres Temporary = 74.80 acres	No change to existing environment
	Western spadefoot toad habitat impacts: Permanent = 143.47 acres Temporary = 71.93 acres	Western spadefoot toad habitat impacts: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment
	American badger habitat: Permanent = 83.99 acres Temporary = 45.96 acres	American badger habitat: Permanent = 104.67 acres Temporary = 54.34 acres	No change to existing environment

Potential Impact	Alternative 2	Alternative 4 (Preferred Alternative)	No-Build Alternative
	Northern Harrier: Permanent = 143.47 acres Temporary = 71.93 acres	Northern Harrier: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment
	Loggerhead Shrike: Permanent = 144.41 acres Temporary = 71.93 acres	Loggerhead Shrike: Permanent = 176.62 acres Temporary = 72.31 acres	No change to existing environment
Threatened and Endangered Species	California tiger salamander **Critical Breeding** habitat impacts: Permanent = 1.21 acres Temporary = 2.55 acres **Non-Critical Breeding** habitat impacts: Permanent = 0.0 acre Temporary = 0.0 acre **Critical Temporary Aquatic** habitat impacts: Permanent = 0.34 acre Temporary = 2.41 acres **Non-Critical Temporary Aquatic** habitat impacts: Permanent = 4.14 acres Temporary = 0.53 acre **Critical Upland** habitat impacts: Permanent = 38.28 acres Temporary = 27.19 acres **Non-Critical Upland** habitat impacts: Permanent = 155.50 acres Temporary = 46.83 acres	California tiger salamander **Critical Breeding** habitat impacts: Permanent = 0.0 acre Temporary = 0.0 acre **Non-Critical Breeding** habitat impacts: Permanent = 3.71 acres Temporary = 0.23 acre **Critical Temporary Aquatic** habitat impacts: Permanent = 0.38 acre Temporary = 2.37 acres **Non-Critical Temporary Aquatic** habitat impacts: Permanent = 2.16 acres Temporary = 0.79 acre **Critical Upland** habitat impacts: Permanent = 40.06 acres Temporary = 26.36 acres **Non-Critical Upland** habitat impacts: Permanent = 149.19 acres Temporary = 45.17 acres	No change to existing environment
	Vernal pool fairy shrimp **Critical** habitat impacts: Permanent = 2.93 acres Temporary = 0.45 acre **Non-Critical** habitat impacts: Permanent = 2.32 acres Temporary = 2.73 acres	Vernal pool fairy shrimp **Critical** habitat impacts: Permanent = 0.79 acre Temporary = 0.44 acre **Non-Critical** habitat impacts: Permanent = 3.82 acres Temporary = 2.98 acres	No change to existing environment
	San Joaquin kit fox habitat impacts: Permanent = 137.62 acres Temporary = 70.14 acres	San Joaquin kit fox habitat impacts: Permanent = 172.38 acres Temporary = 71.29 acres	No change to existing environment
	Swainson's hawk habitat impacts: Permanent = 149.46 acres Temporary = 71.93 acres	Swainson's hawk habitat impacts: Permanent = 178.45 acres Temporary = 72.31 acres	No change to existing environment
	Tricolored blackbird habitat impacts: Permanent = 149.47 acres	Tricolored blackbird habitat impacts: Permanent = 172.99 acres	No change to existing environment

Potential Impact	Alternative 2	Alternative 4 (Preferred Alternative)		No-Build Alternative
	Temporary = 71.93 acres	Temporary =72.31 acres		
	Crotch bumble bee habitat: Permanent impacts = 83.99 acres Temporary Impacts =45.96 acres	Crotch bumble bee habitat: Permanent impacts = 104.67 acres Temporary Impacts = 54.34 acres		No change to existing environment
	Hairy orcutt grass and San Joaquin Valley orcutt grass **Critical** habitat impacts: Permanent = 4.21 acres Temporary = 2.79 acres **Non-Critical** habitat impacts: Permanent = 0.59 acre Temporary = 0.17 acre	Hairy orcutt grass and San Joaquin Valley orcutt grass: **Critical** habitat impacts: Permanent = 2.59 acres Temporary = 2.72 acres **Non-Critical** habitat impacts: Permanent = 0.45 acre Temporary = 0.10 acre		No change to existing environment
	Succulent owl's clover **Critical** habitat impacts: Permanent = 4.53 acres Temporary = 2.90 acres **Non-Critical** habitat impacts: Permanent = 0.27 acre Temporary = 0.05 acre	Succulent owl's clover **Critical** habitat impacts: Permanent = 2.50 acres Temporary = 2.70 acres **Non-Critical** habitat impacts: Permanent = 0.54 acre Temporary = 0.13 acre		No change to existing environment
	Hartweg's golden sunburst habitat impacts: Permanent = 27.40 acres Temporary = 22.38 acres	Hartweg's golden sunburst habitat impacts: Permanent = 28.86 acres Temporary = 21.49 acres		No change to existing environment
Cost by Alternative	$151 million	$193 million for a single-phase project	$230 million for a two phase project	

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List of Abbreviated Terms

Caltrans	California Department of Transportation
MCTC	Madera County Transportation Commission
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
PM	Post Mile
SHPO	State Historic Preservation Officer
USFWS	U.S. Fish and Wildlife Service
CDFW	California Department of Fish and Wildlife
ACOE	Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
MID	Madera Irrigation District

Chapter 1 Proposed Project

1.1 Introduction

Caltrans proposes to improve 6.1 miles of State Route 41 from 0.8 mile south of the Avenue 11 undercrossing to 1.4 miles north of Avenue 15 (post miles 1.5 to 7.6) in Madera County. Figures 1-1 and 1-2 show the project location and vicinity. The County of Madera is funding the project, in cooperation with the Madera County Transportation Commission (MCTC) and Caltrans. Caltrans is the lead agency under the National Environmental Policy Act (NEPA), and Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

The project lies in southeast Madera County, about 15 miles east of the City of Madera and immediately north of the Fresno/Madera County line at the San Joaquin River. Little Table Mountain is northeast of the project, and the San Joaquin River bluffs are to the south. The project is west of the foothills of the Sierra Nevada Mountains. The gently rolling terrain consists mostly of open space grazing land and fallow farm fields, agricultural lands, and two isolated subdivisions, including commercial businesses.

The project limits start 0.8 mile south of the Avenue 11 undercrossing and end 1.4 miles north of Avenue 15. The existing State Route 41 south of Avenue 12 is a four-lane freeway, which transitions to a three-lane rural highway (one lane northbound, two lanes southbound). North of Avenue 12, the existing State Route 41 is a two-lane rural conventional highway.

Two Build Alternatives and a No-Build Alternative are under consideration. Both Build Alternatives include a new structure over Avenue 11 (an undercrossing), new crossing (box culverts) at the Madera Canal and Lateral 6.2 canal, frontage roads, and controlled access. All expressway intersections would be at grade (ground level), but would preserve enough right-of-way for future freeway interchanges at Avenues 12 and 15. The future freeway interchange at Avenue 15 would require improvements to about half a mile of Avenue 15 to transition into the interchange. The No-Build Alternative would keep State Route 41 in its existing condition, though routine maintenance projects would continue.

This project is currently included in the 2019 Regional Transportation Plan (RTP) as a Constrained Capacity-Increasing Project and in the 2019 Madera County Federal Transportation Improvement Program (FTIP.) The project will be constructed in phases, with all phases to be completed by 2040 as currently indicated in the RTP and FTIP. Madera County, in cooperation with Caltrans and the Madera County Transportation Commission (MCTC) has developed a financial plan that will address the project construction phasing

timeline. The approved financial plan with phasing timeline will be included in the final Project Report and can be found in Appendix T of this document.

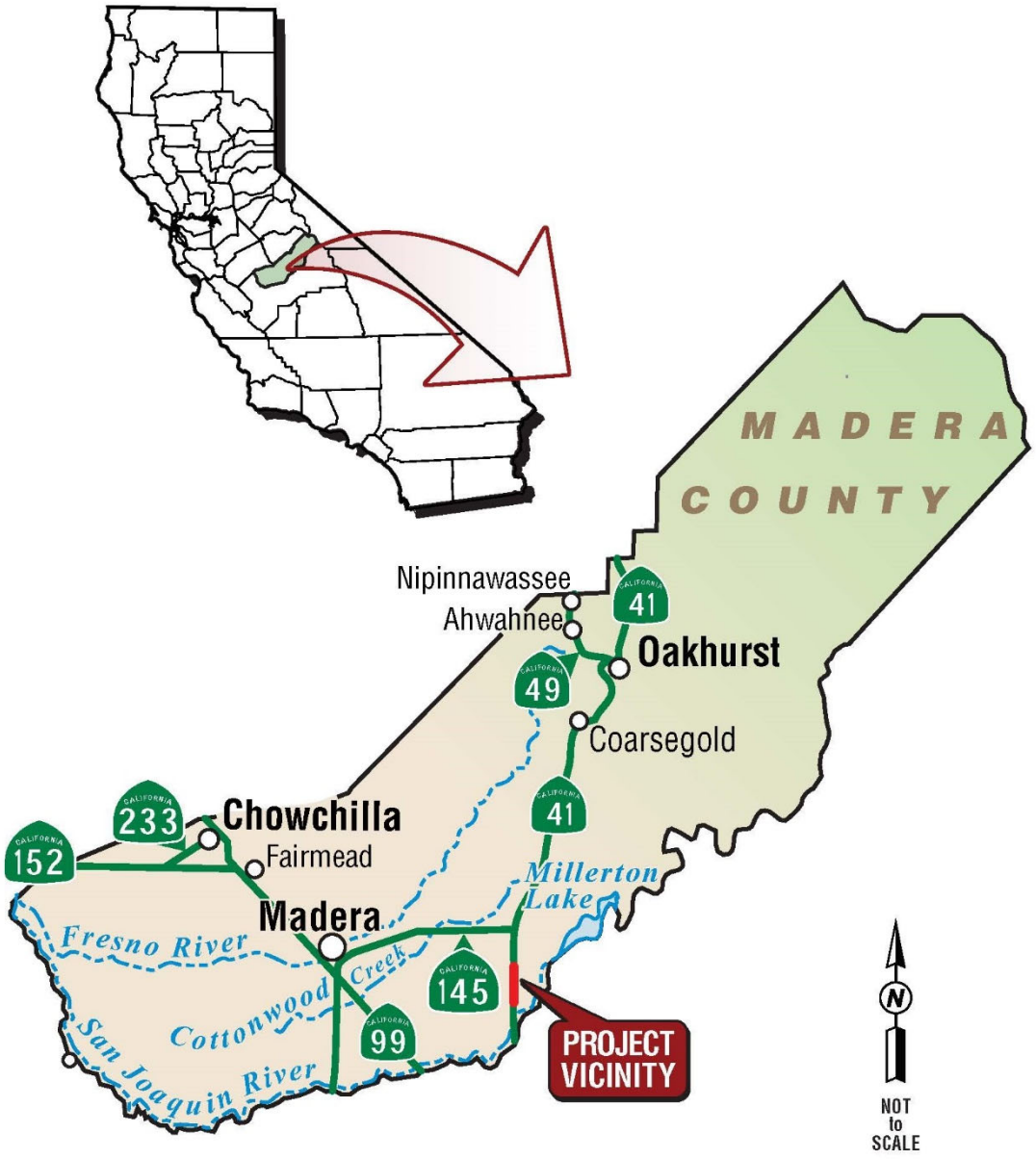


Figure 1-1 Project Vicinity Map

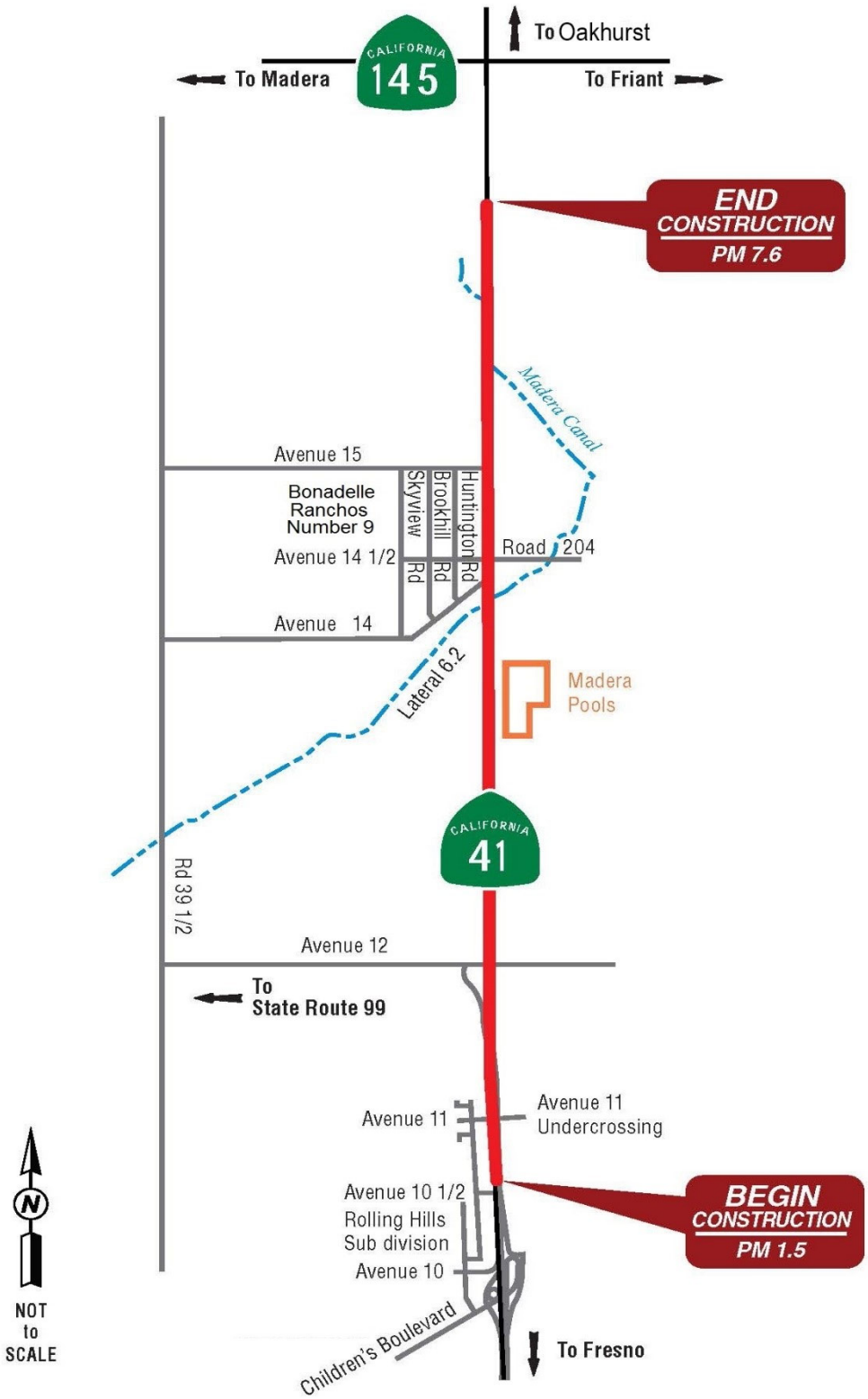


Figure 1-2 Project Location Map

State Route 41 is a Federal Aid National Highway System Route functionally classified as a Principal Arterial Route from the San Luis Obispo County line to its end at the entrance to Yosemite National Park in Mariposa County. It is a State Terminal Access (STA) route that allows use by specific larger trucks under the Federal Surface Transportation Act of 1982. The route is listed on the National Highway Network, designated as Regionally Significant, and listed on the Interregional Route System as a High Emphasis Route in the project area.

In February 1995, a Tier I Route Adoption was approved for a transportation corridor alignment for State Route 41 in Fresno and Madera counties. The transportation corridor ran from El Paso Avenue in the City of Fresno, Fresno County (post mile R31.2) to about 1 mile north of the junction of State Route 41 and State Route 145 in Madera County (post mile 10.4). Four alternatives were evaluated during the study, and Alternative B was identified as the preferred alignment. Alternative B followed the existing State Route 41 alignment past Avenue 12, turned to the east and paralleled the existing State Route 41 (about one-half mile or 2,640 feet away) before merging back into the existing State Route 41 north of the Madera Canal. The California Transportation Commission formally adopted the alignment on February 23, 1995. Later, a Freeway Agreement dated May 23, 1995 between Caltrans and the County of Madera also identified Alternative B as the adopted alignment. Later, a Tier II document was approved in February 1996 for the construction of a freeway between Friant Road in Fresno County (post miles R31.7 to 33.5) and Avenue 12 in Madera County (post miles 0.0 to 3.2).

The Madera 41 South Expressway project would be the next construction project planned for State Route 41 and would modify the previously adopted alignment between Avenue 12 and 1.4 miles north of Avenue 15 (post miles 3.2 to 7.6). The rest of the 1995 route adoption would remain as is. The change to the adopted alignment is necessary because the adopted alignment is not compatible with the Rio Mesa Area Plan approved in 1995 and the Tesoro Viejo planned development recently approved by Madera County. A map of the 1995 route adopted by the California Transportation Commission is shown in Appendix L.

1.2 Purpose and Need

The purpose and need section discusses the reasons for build alternative development, provides the rationale behind the project proposal, and influences the range of alternatives. “Purpose” is the set of objectives that would be met to fix the transportation problem. “Need” is the transportation deficiency or problem.

1.2.1 **Purpose**

The purpose of the Madera 41 South Expressway project is to:

- improve the circulation of local roads and connectivity to State Route 41
- improve continuity and interregional mobility
- provide for future traffic demand
- relieve existing congestion in this segment of State Route 41
- modify the 1995 Route Adoption

1.2.2 **Need**

1.2.2.1 Local Circulation

Commuters currently living within and adjacent to the rural project corridor have limited local circulation to the cities of Madera and Fresno and State Routes 99, 41, and 145 for work, leisure, or schooling. The only access for commuters from any of the residential developments, in this rural project corridor, working in the Fresno/Clovis area is State Route 41. Furthermore, State Route 41 is the only commuter route between Oakhurst and other Madera County mountain communities and the Fresno area. No other valley roads cross the San Joaquin River east of State Route 99 except for the rural Road 206 that connects Road 145 to Friant Road at Friant near Millerton Dam about ten miles to the northeast, and the crossing of State Route 99 to the west of State Route 41 is about seven miles away.

Some of the residents within the project corridor have choices when driving to Madera or accessing State Route 99 to the east. Commuters from Rolling Hills can use either Avenue 9 to the south or Avenue 12 to the north to access State Route 99. Avenue 9 passes by Valley Children's Hospital and is a two-lane local road that travels through mostly farmland. Avenue 12 is also a two-lane local road that is subject to a speed limit as it passes through the community of Madera Ranchos, a community college, and several businesses. Access onto State Route 41 from Avenue 9 is via an on-ramp, and access on Avenue 12 is controlled by traffic signals. Commuters from Bonadelle Ranchos Number 9 traveling to Madera can choose to use Avenue 15, which passes through grazing land and another Madera Ranchos development before it ends at the Madera City limits.

Residents of Sumner Hill located above the San Joaquin River to the east of the project have only one access to State Route 41 via Avenue 14½/Road 204. However, for Avenue 14, 14½/Road 204 and Avenue 15, access is

controlled by a stop sign, and commuters enter oncoming traffic from a dead stop. There is a need to reduce the conflict between merging or slower-moving local traffic and faster-moving interregional traffic limited to using the existing facility.

Future development would introduce new traffic at these intersections, which would contribute to the conflict between slower-moving and faster-moving traffic. The traffic-related studies completed by Caltrans for this project were based on an assessment of available information from preliminary traffic forecasting, past traffic studies, and history along the corridor. Based on this analysis, by the year 2020, State Route 41 would need to be at least a four-lane divided expressway from the current end of the freeway at roughly the southern project limits (Avenue 10½) and extend to State Route 145.

Preliminary forecasting has also indicated that by the anticipated design year of 2045, State Route 41 would need interchanges at Avenues 12 and 15 to accommodate the anticipated traffic volumes. As displayed in Table 1.1, conditions are expected to deteriorate with the No Build Alternative. The analysis shows that in the near future, interchanges are needed in place for the intersections at Avenue 12 and 15 to avoid the failure of those intersections.

Within the project limits, there are four local roads that intersect with the existing State Route 41 (see Figure 1-2).

- Avenue 12 extends west from the existing State Route 41 and connects with Firebaugh Boulevard, providing commuters access to State Route 99, several schools, and businesses along the way. It extends east from the existing State Route 41 several miles where it ends at a golf course along the San Joaquin River.

- Avenue 14½ is part of the Bonadelle Ranchos Number 9 circulation system on the west side of the existing State Route 41 and becomes Road 204 on the east side of State Route 41. Road 204 is a narrow paved roadway with no noticeable shoulders that is the main access to Sumner Hill, an isolated gated community overlooking the San Joaquin River about 4 miles east of the project.

- Avenue 14 extends west from the existing State Route 41 a few miles to Road 39½, which connects to Avenue 12 and Avenue 15.

- Avenue 15 extends west from the existing State Route 41 about 12 miles to Tozer Street/Road 28, providing commuters and residents from the Madera Ranchos developments access to the city of Madera.

The Caltrans Office of Traffic Operations completed a draft operational analysis for the project in January 2016. Table 1.1 is the summary of the level of service at the intersections within the project limits.

Table 1.1 Existing Level of Service

Intersections	Intersection Traffic Control	AM/PM	2018 Existing		2023 No-Build	
			Speed (Miles per Hour)	Level of Service	Speed (Miles per Hour)	Level of Service
Avenue 15	Two-Way Stop	AM	46	D	40	E/F
		PM	46	D/E	43	F
Avenue 14$^1/_2$ (West)/Road 204 (East)	Two-Way Stop	AM	60	B	57	B/C
		PM	59	B	58	B/C
Avenue 14	Two-Way Stop	AM	60	B	57	B/C
		PM	59	B	58	B/C
Avenue 12	Signal	AM	52	D	48	F
		PM	51	D	47	F

Preliminary traffic forecasting indicates that conditions are expected to deteriorate with the No-Build Alternative. The analysis shows that in the near future (2023), the intersections at Avenue 12 and Avenue 15 would fail.

1.2.2.2 Route Continuity and Interregional Mobility

The concept of route continuity refers to the connectivity of roadway networks. According to the Federal Highway Administration, most travel occurs through a network of interdependent roadways, with each roadway segment moving traffic through the system toward destinations. The concept of roadway functional classification (arterial, connector or local) defines the role that a particular roadway segment plays in serving this flow of traffic through the network.

Local roadways are used to provide land access and have many opportunities for entering and exiting the roadway, which creates a potential conflict between the vehicles traveling through the area and the entering and exiting vehicles. Collector roadways are the roadways that blend mobility and access.

Arterial roadways have few opportunities for entering and exiting a roadway and are used mostly for the movement of people and goods. A principal arterial roadway usually serves a large percentage of travel between cities and other activity centers, especially when minimizing travel time and distance is important.

State Route 41 is a Federal-Aid National Highway System Route functionally classified as a principal arterial from the San Luis Obispo/Kern County line to its end at the entrance to Yosemite National Park, except within the City of Fresno, where it is classified as a principal arterial urban.

The 2013 State Route 41 Transportation Concept Report identified the ultimate concept through this segment as an eight-lane freeway from the

Fresno/Madera County line to Avenue 12, and a six-lane freeway from Avenue 12 to State Route 145. The ultimate concept north of State Route 145 is identified as a four-lane conventional highway.

At the Kings/Fresno County line, the existing State Route 41 is an expressway that transitions into a freeway through the City of Fresno. After crossing the Madera/Fresno County line, State Route 41 remains a four-lane freeway to south of Avenue 10½ (post mile 1.5). The freeway then transitions to a three-lane rural conventional highway (one lane northbound, two lanes southbound), which continues north until about 0.1 mile north of Avenue 12 (post mile 3.3). The posted speed limit is 65 miles per hour on the freeway; north of Avenue 12, within the project limits, the facility is a two-lane rural highway, and the posted speed limit is 55 miles per hour. The lack of continuity of the freeway affects the overall efficiency of the corridor, which increases congestion on the freeway and the local connections.

These effects will increase substantially with planned residential and employment growth.

The concept of interregional mobility refers to facilitating movement between regions. Interregional mobility is important for State Route 41 because the route is the main path through Fresno County into recreation areas in the Sierra Nevada, such as Yosemite National Park, Bass Lake, Mammoth Pools, and the Chukchansi Gold Resort and Casino, and serves as the main access route to the foothill communities of Coarsegold, Oakhurst, O'Neals, and North Fork.

In addition, interregional mobility is critical to the economic health of the state. According to the 2013 State Route 41 Transportation Concept Report, the San Joaquin Valley is one of four major international trade regions in California, as designated in the 2002 Global Gateways Development Programs and, as a result, a high priority has been placed on goods movement by Caltrans and local agencies. It is a State Terminal Access (STA) route that allows use by specific larger trucks under the Federal Surface Transportation Act of 1982 (STAA).

Furthermore, State Route 41 is listed on the National Highway Network, designated as Regionally Significant, and listed on the Interregional Route System as a High Emphasis Route within the project area. High Emphasis routes are characterized as being the most critical Interregional Road System routes, critical to interregional travel and the state as a whole (State Route 41 Transportation Concept Report, 2013).

Without improvements, traffic congestion will hinder the efficient movement of goods and services, and travel conditions in the region will continue to worsen due to regional population growth and projected traffic volume increases.

1.2.2.3 Future Traffic Demand

Increasing developments along State Route 41 in Madera County, along with the planned urban growth north of the Fresno metropolitan area, are expected to contribute to the degrading level of service for this segment of the highway corridor. Eventually, about 40,000 residences may be constructed in the project area (see Section 2.1.1.1 Existing and Future Land Use).

Caltrans District 6 Technical Planning completed a traffic analysis for the proposed expressway along State Route 41 between Children's Boulevard and Road 208 (post mile 11.4). The 2023 average traffic volume is predicted to increase to 40,210 vehicles, the 2037 traffic volume is predicted to increase to an average of 76,175 vehicles, and in 2057, the traffic volume is predicted to increase to an average of 134,975 vehicles.

Table 1.2 shows traffic counts for the project. The Build Alternatives and No-Build Alternative have the same Average Daily Traffic count with 10 percent truck volume. By 2023, the traffic and truck volume are expected to increase by over 30 percent and, by 2037, the traffic and truck volume is expected to double. And by 2057, the traffic and truck volumes are expected to quadruple.

Table 1.2 Average Annual Daily Traffic and Truck Volume

	Year	Average Daily Traffic/Build	Average Daily Traffic/ No-Build	Trucks Volume (10%)
Avenue 12	**2018**	30,400	30,400	3,040
	2023	37,700	37,700	3,770
	2037	68,500	68,500	6,850
	2057	121,000	121,000	12,100
Avenue 14 and 14½	**2018**	21,730	21,730	2,173
	2023	30,270	30,270	3,027
	2037	59,350	59,350	5,935
	2057	104,950	104,950	10,495
Avenue 15	**2018**	44,000	44,000	4,400
	2023	62,600	62,600	6,260
	2037	117,500	117,500	11,750
	2057	209,000	209,000	20,900

1.2.2.4 Congestion

Currently, traffic traveling north on State Route 41 must merge into a two-lane highway, which results in a bottleneck causing traffic to queue (back up) at Avenue 12. The bottleneck is expected to worsen when traffic increases because of the approved planned developments.

The existing State Route 41 merges regional through-traffic and commuter traffic with local traffic, which results in slower traffic speeds. The posted speed limits are 65 miles per hour on the freeway segment and 55 miles per hour on the highway segment within the project limits. In addition, the State Route 41 freeway ends south of Avenue 12, which results in congestion in the transitional segment from four lanes to two lanes (post miles 1.5 to 3.0). The transitional segment also becomes more congested during peak traffic hours and is expected to worsen as traffic counts increase due to construction of the approved development in the vicinity.

The 2013 State Route 41 Transportation Concept Report identifies a concept level of service “D” for the State Route 41 corridor throughout the county of Madera. Traffic projections for 2017, 2027, and the 2037 design year were provided by the Caltrans Technical Planning Branch (2015). The existing State Route 41 between Children’s Boulevard and Avenue 12 is a three-lane highway (two southbound lanes and one northbound lane) and is currently operating at level of service “E” to “F” in the northbound direction and level of service “B” in the southbound direction. State Route 41 north of Avenue 12

currently operates at level of service “D” to “E” in both directions. The worst level of service represents the southbound and northbound directions during morning and afternoon peak travel hours, respectively. Figure 1-3 shows the level of service criteria for a two-lane highway.

1.2.2.5 Modify the 1995 Route Adoption

The segment of the 1995 Route Adoption for State Route 41 between Avenue 12 and 1.4 miles north of Avenue 15 (post miles 3.2 to 7.6) must be modified because this segment of the adopted alignment is not compatible with the circulation plans of the planned development recently approved by Madera County. Caltrans and the County of Madera have agreed to cooperate in this proposed study to evaluate the future character, alignment, and improvements to State Route 41 through the project limits identified in the 2014 Caltrans Project Study Report/Project Development Support document. This study would select a preferred alternative for the future upgrade and possible realignment of this segment of State Route 41 to address the traffic impacts encountered in the area.

1.2.2.6 Independent Utility and Logical Termini

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations 771.111 [f]) require that (1) projects have logical limits (this is known as logical termini) and be long enough to address environmental matters on a broad scope; (2) projects are usable and a reasonable use of funds even if no additional transportation improvements in the area are made (this is known as independent utility); and (3) approval of a project does not restrict consideration of alternatives for other reasonable foreseeable transportation improvements. As discussed below, the Madera 41 South Expressway complies with these requirements.

The ultimate project, as well as the phased construction of the project, has logical limits. The ultimate project would provide an expressway that improves local circulation, route continuity, and interregional mobility while relieving congestion. The expressway would begin at the point when travel demand exceeds the capacity of the existing facility, and end at the point when travel demands decrease on the existing facility.

Another important consideration is whether the project is of sufficient length to address environmental matters on a broad scope. The study corridor extends beyond the proposed construction limits to ensure comprehensive environmental analysis for the project.

The project’s phased implementation would provide an effective and efficient roadway even if no additional transportation improvements are made. As discussed in Section 2.1.8, Traffic and Transportation/Pedestrian and Bicycle Facilities, the phased construction would provide adequate traffic level service

through 2057 (the project's design year). Finally, there are no other projects that are needed or are dependent upon completion of the Madera 41 South Expressway.

Approval of the project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. The Regional Transportation Plan identifies several other transportation improvements that are expected by 2042. Each of these is being developed independently of the Madera 41 South Expressway, and none would be made impossible by the project. The project would not conflict with or constrain the design of any of these projects.

LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **No delays**
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. **Considerable delays**

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Figure 1-3 Level of Service for Two-Lane Highways

1.3 Project Description

The proposed 6.1-mile project lies on State Route 41 in rural southeast Madera County north of the Madera/Fresno County line from 0.8 mile south of

the Avenue 11 undercrossing to 1.4 miles north of Avenue 15 from post miles 1.5 to 7.6 (see Figure 1-2, Project Location Map). The project would construct a divided four-lane expressway with controlled access on enough right-of-way so that, as traffic volumes increase and funding becomes available, the facility could expand to an eight-lane freeway between Children's Boulevard (Avenue 10) and Avenue 12, and expand to a six-lane freeway north of Avenue 12. The segment of the project south of Avenue 12 would be constructed mostly within the existing right-of-way.

The purpose of the project is to improve local circulation, route continuity, and interregional mobility while relieving congestion. The project would address the increased traffic and population associated with existing and planned development along State Route 41 to and from Fresno and Madera counties.

1.4 Project Alternatives

1.4.1 Build Alternatives

Two Build Alternatives and a No-Build Alternative are under consideration. Both Build Alternatives include a new structure over the Avenue 11 undercrossing, new culvert at the Madera Canal and Lateral 6.2 canal, frontage roads, and controlled access. All expressway intersections would be at grade (ground level), but would preserve enough right-of-way for future freeway interchanges at Avenues 12 and 15. The future freeway interchange at Avenue 15 would require improvements to about half a mile of Avenue 15 to transition into the interchange. The No-Build Alternative would keep State Route 41 in its existing condition, though routine maintenance projects would continue.

Alternative 2, known as the East Alignment, would construct a divided four-lane expressway south of Avenue 12 extending from the divided four-lane freeway mostly within the existing state right-of-way. The Alternative 2 alignment curves roughly to the west of the existing State Route 41 alignment north of Avenue 12. Near the Lateral 6.2 canal (south of Avenue 14), Alternative 2 veers northeast and crosses the existing State Route 41 before turning north roughly 600 feet to the east side of the existing State Route 41 past Avenue 15. After crossing the Madera Canal north of Avenue 15, Alternative 2 turns west and transitions back into the existing State Route 41, a two-lane highway. The existing segment of State Route 41 between the Lateral 6.2 canal and the Madera Canal would be converted into a frontage road, and cul-de-sacs would be provided for turnaround. Figure 1-4 shows this alternative alignment.

Alternative 4, known as the Existing Alignment, constructs a divided four-lane expressway extending from the divided four-lane freeway mostly within the existing state right-of way south of Avenue 12. North of Avenue 12, the

Alternative 4 alignment would mostly use the existing State Route 41 alignment and existing right-of-way by constructing the expressway mostly on the west side of the existing State Route 41. Alternative 4 would transition back into the existing State Route 41 north of the Madera Canal. Avenue 15 would be realigned to the north slightly to connect with the local road proposed for planned residential development. The existing State Route 41 from post mile 4.4 to post mile 6.1 would become a frontage road to be used by traffic from the east side of the future expressway. Figure 1-5 shows this alternative alignment.

This project contains a number of standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

Common Design Features of the Build Alternatives

Both Build Alternatives would eliminate uncontrolled access to State Route 41 (no driveways or local road access except at designated intersections) in accordance with Caltrans standards for expressways. Under certain criteria, landlocked parcels not having any access to other roads may be granted an access opening for the expressway. However, when the facility is upgraded to a freeway, no access openings would be permitted.

The following are common features of both Build Alternatives:

Freeway segment south of Avenue 12 (post miles 1.5 to 3.2):

- Constructs a divided four-lane expressway to the north
- Transitions the existing divided four-lane freeway to a divided four-lane expressway
- Constructs an additional structure (undercrossing) over Avenue 11 for southbound traffic
- Includes a median approximately 94 feet wide, which allows for expansion to a six-lane facility with a 70-foot median

Expressway segment north of Avenue 12 (post miles 3.2 to 7.6):

- Constructs a divided four-lane expressway with controlled access
- Constructs new crossings (box culverts) over the Madera Canal and the Lateral 6.2 canal
- Includes a right-of-way corridor about 300 feet wide

- Includes a median about 94 feet wide, which allows for expansion to a six-lane facility with a 70-foot median
- Constructs storm water detention basins
- Raises profile (height) of new roadway between 3 feet and 5 feet in various locations
- Constructs at-grade intersections (ground level) at Avenues 12 and 15
- Preserves enough right-of-way for future freeway interchanges at Avenues 12 and 15
- Preserves enough right-or-way for approximately half a mile of improvements to Avenue 15 to transition into the future interchange
- Does not preclude an overcrossing (grade separation) to be constructed at any of the county roads.
- Avoids the Madera Pools, which was developed to mitigate environmental impacts of nearby highway projects.

Unique Features of the Build Alternatives

Alternative 2

Alternative 2 would keep a segment of the existing State Route 41 as a frontage road for the commercial businesses and residential development located between Avenue 14 and Avenue 15. Cul-de-sacs (dead-end or turnarounds) would be constructed at the north side of the Lateral 6.2 canal, slightly south of Avenue 14 and south of the Madera Canal at about post mile 7.2.

Alternative 4

Alternative 4 would realign a portion of Avenue 15 to the north from east of Skyview Road to the new alignment to accommodate a future freeway intersection. A segment of the existing State Route 41 between the Lateral 6.2 canal and the Madera Canal would become a frontage road to be used by traffic from the east side of the expressway, and cul-de-sacs would be constructed at post mile 4.4 and post mile 6.1.

Phased-Construction Plan

Alternative 4 is proposed to be constructed in two phases. When the second phase is constructed within a 20-year horizon, the improvements will match the build of Alternative 4 prior to phasing. At the southern project limits, Phase 1 will transition the existing divided four-lane freeway near Avenue 10½ to a divided four-lane expressway at Avenue 12. A two-lane undercrossing at

Avenue 11 will also be constructed for the southbound traffic alongside the existing undercrossing which will then be solely used for the northbound traffic. North of Avenue 12, the divided four-lane expressway will continue ½ mile south of Avenue 14. In this section, Phase 1 will construct two additional lanes in their ultimate configuration for southbound traffic west of the existing roadway. The existing pavement will then be used for northbound traffic on an interim basis creating a large separation (median) between the two opposing directions of traffic. Continuing north from this point, the facility will transition into a four-lane conventional highway near the 6.2 Lateral Canal and will extend north of the signalized intersection at Avenue 15. This four-lane conventional highway segment will make use of the existing two-lane roadway by adding to it. The four-lane facility will transition back to a two-lane conventional highway approximately 0.4 miles north of the intersection. The conventional highway segment is an interim facility until Phase 2 is constructed and upgrades it to a divided four-lane expressway. The median in this four-lane conventional highway section will be raised. Therefore, only the southbound roadway portion of the conventional highway will have access to the businesses located to the west of State Route 41. There will also be three northbound left-turn pockets on State Route 41 to accommodate turning movements at Avenue 14, Avenue 14½ and approximately ¼ mile south of Avenue 15. A southbound left-turn pocket will be located at Road 204. The median will be wide enough to allow U-turns at these turn pockets.

In Phase 2, the interim pavement in the four-lane expressway section between Avenue 12 and approximately ½ mile south of Avenue 14 will be removed and reconstructed at its ultimate location alongside the southbound pavement constructed in Phase 1. North of this section, the four-lane conventional highway constructed in Phase 1 will be removed and upgraded to a divided four-lane expressway. Acquisition of the property containing business to the west of State Route 41 from just south of Avenue 14 to Avenue 15 will be required at this phase. When completed, Phase 2 will result in a divided four-lane expressway extending from the four-lane freeway at the southern end of the project limits to just north of Avenue 15, where it will transition into the existing two-lane conventional highway 1.4 miles north of Avenue 15. The signalized intersections at Avenue 12 and Avenue 15 will be the only break in access control when Phase 2 is completed. Two culverts will also be constructed that span Madera Canal.

Transportation Demand Management (TDM) and Transportation System Management (TSM) Alternatives

Transportation System Management, Transportation Demand Management, and Mass Transit alternatives must be considered when preparing an Environmental Impact Statement or Environmental Assessment for a project located in an urban area with a population over 200,000 (Council on Environmental Quality Guidelines).

Transportation system management strategies are operational improvements to satisfy the purpose and need of a project by increasing the efficiency of existing facilities. Examples of the strategies include auxiliary lanes, turn lanes, reversible lanes, and traffic signal coordination. Transportation system management also encourages ridesharing and alternative modes of transportation.

Although transportation system management measures alone could not satisfy the purpose and need of the project, left-turn lanes and traffic signals at intersections and at certain local road intersections have been incorporated into the build alternatives for this project. Currently, the existing low population density in this rural area does not support an expansion of the local public transit system, but such expansion can be incorporated into the proposed expressway as expected future growth becomes a reality.

Transportation demand management focuses on regional strategies or reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It supports higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation choice in terms of travel method, travel times, travel route, travel costs, and the quality and convenience of the travel experience. Typical activities within this component include providing contract funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals.

No transportation demand management alternatives were developed for this segment of State Route 41 because the project is in a rural area, the existing population within the project limits is small, and the main use of State Route 41 is interregional travel. A stand-alone transportation demand management alternative would not satisfy the purpose and need because it would not create route continuity. Also, a stand-alone transportation demand management alternative would not enhance interregional mobility.

Reversible lanes were not evaluated for this project given that the existing facility only has two lanes and the proposed project would need to be built in phases that would prevent a reversible lane from being viable. ??

1.4.2 **No-Build (No-Action) Alternative**

The No-Build Alternative, or No-Action Alternative, would keep State Route 41 in its existing condition, routine maintenance projects would continue but no new interchanges or capacity increasing projects would be built. The traffic from the developments at Avenue 12 and 15 would overwhelm the existing facility when they are built out to their approved levels.

1.5 Comparison of Alternatives

Criteria used to evaluate the alternatives include project purpose and need issues, project cost estimates, and potential environmental effects of the proposed project. The Project Development Team considers the project's goals when developing criteria to screen and narrow the range of alternatives to be analyzed. Table 1.3 compares the alternatives using the evaluation criteria. Both Build Alternatives meet the purpose and need of the proposed project:

- improve the circulation of local roads and connectivity to State Route 41
- improve continuity and interregional mobility
- provide for future traffic demand
- relieve existing congestion in this segment of State Route 41
- modify the 1995 Route Adoption

The comparison shows that Alternative 4 would cost more than Alternative 2. The main cost difference is due to right-of-way acquisition and the associated relocations.

Alternative 4 would acquire the gas station at the corner of Avenue 15 and State Route 41, which would require a study to determine whether there is any hazardous waste or hazardous material associated with the property. Alternative 4 would result in a significant increase in noise to the residences next to State Route 41 between Avenue 14 and Avenue 15. Alternative 4 would displace 26 businesses.

Alternative 2 would impact more critical species habitat and have greater permanent impact to wetlands and Waters of the U.S. than Alternative 4 but less impact to some plant species and animal species.

For an in-depth analysis of the items in the table, please review this document in its entirety along with the technical documents available during the circulation period at the locations listed on the inside cover.

Table 1.3 Comparison of Alternatives

Criteria		Alternative 2	Alternative 4	No-Build Alternative
ESTIMATED TOTAL COST	Roadway Items	$91 million	$93 million	Cost for maintenance of the existing roadway
	Structure Items	$17 million	$33 million	
	Right-of-Way	$43 million	$66 million	

Criteria		Alternative 2	Alternative 4	No-Build Alternative
	Total Cost	$151 million	$193 million ($230 million if built in two phases)	
PURPOSE AND NEED: Would the alternative satisfy the Purpose and Need?		YES	YES	NO
	LAND USE: Is the project consistent with these regional and local plans?			
• Regional Transportation Plan		YES	YES	NO
• Federal Transportation Improvement Program		YES	YES	NO
• Madera County General Plan		NO, realigns a segment of the 1995 Route Adoption	NO, realigns a segment of the 1995 Route Adoption	NO, not compatible with 1995 Route Adoption
• Rio Mesa Area Plan		NO, conflicts with Tesoro Viejo Specific Plan included in Rio Mesa Area Plan	NO, conflicts with Tesoro Viejo Specific Plan included in Rio Mesa Area Plan	NO, would not meet future traffic demands
GROWTH: Would the project induce growth?		Would not cause growth; may minimally increase the rate of planned growth in the area	Would not cause growth; may minimally increase the rate of planned growth in the area	No
	FARMLAND: How many acres of farmland would be converted?			
• Total (agriculturally zoned)		223 acres	230 acres	0
• Prime and Unique		53 acres	59 acres	0
• Williamson Act		4.9 acres	27.8 acres	0
COMMUNITY CHARACTER and COHESION		Would not disrupt existing community character and cohesion	Disrupts existing business community along west side of existing State Route 41 between Avenue 14 and Avenue 15	No change
	RELOCATIONS: Would the project displace any:			
• Businesses		None with limited access provided	Potentially relocates 26 businesses	No relocations
• Housing		None with limited access provided	None with limited access provided	No relocations

Criteria	Alternative 2	Alternative 4	No-Build Alternative
• Utility service relocation	Would include utility easement for future use Relocates aerial and buried electric lines, telephone lines, cable television lines, and modifies the Madera Canal and Lateral 6.2 canal Some utilities would be relocated for approved developments prior to construction of the project	Would include utility easement for future use Relocates aerial and buried electric lines, telephone lines, cable television lines, and modifies the Madera Canal and Lateral 6.2 canal Some utilities would be relocated for approved developments prior to construction of the project	No relocations
EMERGENCY SERVICES	Would not disrupt emergency services	Delay in emergency services during construction would be minimal to none	No change
TRAFFIC and TRANSPORTATION	Improves level of service Frontage roads would be provided	Improves level of service Frontage roads would be provided	Congestion expected to worsen in the future
PEDESTRIAN and BICYCLE FACILITIES	Pedestrian crossings would include curb ramps that would meet the requirements of the Americans with Disabilities Act Class III Bikeway or Bike Route recommended	Pedestrian crossings would include curb ramps that would meet the requirements of the Americans with Disabilities Act Class III Bikeway or Bike Route recommended	No bicycle or pedestrian facilities exist
VISUAL/AESTHETICS	Proposed bridges result in moderate impact: visually noticeable by all users	Proposed bridges result in moderate impact: visually noticeable by all users	Landscape would not change
CULTURAL RESOURCES: Would the project result in changes to Architectural History?	Modifies the historically eligible Madera Canal and Lateral 6.2 canal	Modifies the historically eligible Madera Canal and Lateral 6.2 canal	No changes to resources
WATER QUALITY/ STORM WATER RUNOFF	Requires four storm water detention basins requiring 71 acres of excavation Approximately 370 acres of disturbed soil area Results in 65 acres of net impervious (solid) surface area	Requires 5 storm water detention basins requiring 88 acres of excavation Approximately 285 acres of disturbed soil area Results in 55 acres of net impervious (solid) surface area	No change to existing drainage

Criteria	Alternative 2	Alternative 4	No-Build Alternative
PALEONTOLOGY	Excavates 71 acres for 4 storm water detention basins Would impact high sensitivity paleontological resources of the Modesto and Turlock Lake formations	Excavates 88 acres for 5 storm water detention basins Would impact high sensitivity paleontological resources of the Modesto and Turlock Lake formations	No excavation would occur
HAZARDOUS WASTE or MATERIALS	Further investigation for hazardous waste recommended	Further investigation for hazardous waste required due to acquisition of gas station	No testing required
AIR QUALITY	Not a project of air quality concern	Not a project of air quality concern	Future congestion would negatively affect air quality
NOISE and VIBRATION	Noise abatement is not recommended – traffic noise levels should decrease because the alignment would be moved away from the 30 receptors identified	Noise abatement is recommended – traffic noise levels should increase because the alignment would be moved closer to 33 receptors identified	No added noise
NATURAL COMMUNITIES	Impact to Vernal Pool Communities within biological study area: Permanent = 1.19 acres Temporary = 0.51 acre	Impact to Vernal Pool Communities within biological study area: Permanent = 1.54 acres Temporary = 0.61 acre	No change to existing environment
WETLANDS and OTHER WATERS of the U.S.	Estimated WETLANDS Impacts: Permanent = 3.56 acres Temporary = 2.44 acres Estimated WATERS impacts: Permanent = 1.44 acres Temporary = 3.16 acres	Estimated WETLANDS Impacts: Permanent = 1.24 acres Temporary = 2.48 acres Estimated WATERS impacts: Permanent = 3.96 acres Temporary = 0.95 acre	No change to existing environment
PLANT SPECIES			
	Sanford's arrowhead habitat impacts: Permanent = 1.15 acres Temporary = 0.68 acre	Sanford's arrowhead habitat impacts: Permanent = 3.19 acres Temporary = 0.08 acre	No change to existing environment

Criteria	Alternative 2	Alternative 4	No-Build Alternative
	Spiny-sepaled button celery habitat impacts: Permanent = 4.75 acres Temporary = 2.95 acres	Spiny-sepaled button celery habitat impacts: Permanent = 2.78 acres Temporary = 3.10 acres	No change to existing environment
	Brassy bryum habitat impacts: Permanent = 80.66 acres Temporary = 42.49 acres	Brassy bryum habitat impacts: Permanent = 104.67 acres Temporary = 54.34 acres	No change to existing environment
ANIMAL SPECIES	Burrowing owl habitat impacts: Permanent = 143.47 acres Temporary = 71.93 acres	Burrowing owl habitat impacts: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment
	Bat species habitat impacts: Permanent = 200.81 acres Temporary = 79.51 acres	Bat species habitat impacts: Permanent = 199.13 acres Temporary = 74.80 acres	No change to existing environment
	Western spadefoot toad habitat impacts: Permanent = 143.47 acres Temporary = 71.93 acres	Western spadefoot toad habitat impacts: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment
	American badger habitat: Permanent = 83.99 acres Temporary = 45.96 acres	American badger habitat: Permanent = 104.67 acres Temporary = 54.34 acres	No change to existing environment
	Northern Harrier: Permanent = 143.47 acres Temporary = 71.93 acres	Northern Harrier: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment
	Loggerhead Shrike: Permanent = 144.41 acres Temporary = 71.93 acres	Loggerhead Shrike: Permanent = 176.62 acres Temporary = 72.31 acres	No change to existing environment
THREATENED and ENDANGERED SPECIES	**ANIMALS**		
	California tiger salamander **Critical Breeding** habitat impacts: Permanent = 1.21 acres	California tiger salamander **Critical Breeding** habitat impacts: Permanent = 0.0 acre	No change to existing environment

Criteria	Alternative 2	Alternative 4	No-Build Alternative
	Temporary = 2.55 acres **Non-Critical Breeding** habitat impacts: Permanent = 0.0 acre Temporary = 0.0 acre **Critical Temporary Aquatic** habitat impacts: Permanent = 0.34 acres Temporary = 2.41 acres **Non-Critical Temporary Aquatic** habitat impacts: Permanent = 4.14 acres Temporary = 0.53 acre **Critical Upland** habitat impacts: Permanent = 38.28 acres Temporary = 27.19 acres **Non-Critical Upland** habitat impacts: Permanent = 155.50 acres Temporary = 46.83 acres	Temporary = 0.0 acre **Non-Critical Breeding** habitat impacts: Permanent = 3.71 acres Temporary = 0.23 acre **Critical Temporary Aquatic** habitat impacts: Permanent = 0.38 acre Temporary = 2.37 acres **Non-Critical Temporary Aquatic** habitat impacts: Permanent = 2.16 acres Temporary = 0.79 acre **Critical Upland** habitat impacts: Permanent = 40.06 acres Temporary = 26.36 acres **Non-Critical Upland** habitat impacts: Permanent = 149.19 acres Temporary = 45.17 acres	
	Vernal pool fairy shrimp **Critical** habitat impacts: Permanent = 2.93 acres Temporary = 0.45 acre **Non-Critical** habitat impacts: Permanent = 2.32 acres Temporary = 2.73 acre	Vernal pool fairy shrimp **Critical** habitat impacts: Permanent = 0.79 acre Temporary = 0.44 acre **Non-Critical** habitat impacts: Permanent = 3.82 acres Temporary = 2.98 acres	No change to existing environment
	San Joaquin kit fox habitat impacts: Permanent = 137.62 acres Temporary = 70.14 acres	San Joaquin kit fox habitat impacts: Permanent = 172.38 acres Temporary = 71.29 acres	No change to existing environment
	Swainson's hawk habitat impacts: Permanent = 149.46 acres Temporary = 71.93 acres	Swainson's hawk habitat impacts: Permanent = 178.45 acres Temporary = 72.31 acres	No change to existing environment
	Tricolored blackbird habitat impacts: Permanent = 149.47 acres Temporary = 71.93 acres	Tricolored blackbird habitat impacts: Permanent = 172.99 acres Temporary = 72.31 acres	No change to existing environment

Criteria	Alternative 2	Alternative 4	No-Build Alternative
	Crotch bumble bee habitat: Permanent impacts = 83.99 acres Temporary Impacts = 45.96 acres	Crotch bumble bee habitat: Permanent impacts = 104.67 acres Temporary Impacts =54.34 acres	No change to existing environment
	PLANTS		
	Hairy orcutt grass and San Joaquin Valley orcutt grass: **Critical** habitat impacts: Permanent = 4.21 acres Temporary = 2.79 acres **Non-Critical** habitat impacts: Permanent = 0.59 acre Temporary = 0.17 acre	Hairy orcutt grass and San Joaquin Valley orcutt grass **Critical** habitat impacts: Permanent = 2.59 acres Temporary = 2.72 acres **Non-Critical** habitat impacts: Permanent = 0.45 acre Temporary = 0.10 acre	No change to existing environment
	Hartweg's golden sunburst habitat impacts: Permanent = 27.40 acre Temporary = 22.38 acre	Hartweg's golden sunburst habitat impacts: Permanent = 28.86 acres Temporary = 21.49 acres	No change to existing environment
	Succulent owl's clover **Critical** habitat impacts: Permanent = 4.53 acres Temporary = 2.90 acres **Non-Critical** habitat impacts: Permanent = 0.27 acre Temporary = 0.05 acre	Succulent owl's clover **Critical** habitat impacts: Permanent = 2.50 acres Temporary = 2.70 acres **Non-Critical** habitat impacts: Permanent = 0.54 acre Temporary = 0.13 acre	No change to existing environment

All comments submitted on the draft environmental document have been considered. The Project Development Team has identified Alternative 4 as the preferred alternative and has made the final determination of the project's effects on the environment. 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 obtained, Caltrans could design and construct all or part of the project.

In accordance with the California Environmental Quality Act, Caltrans would certify that the project complies with the act, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that would not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans would then file a Notice of Determination with the State Clearinghouse that would identify whether the

project would have significant impacts, whether mitigation measures were included as conditions of project approval, whether findings were made, and whether a Statement of Overriding Considerations was adopted. Similarly, if Caltrans, as assigned by the Federal Highway Administration, determines the National Environmental Policy Act action does not significantly affect the environment, Caltrans would issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.6 Identification of a Preferred Alternative

Alternative Selection Process

The preferred alternative for any Caltrans project is selected by Caltrans at the recommendation of the Caltrans Project Development Team (PDT). In selecting a preferred alternative, the Project Development Team evaluates the environmental impacts, design features supporting the purpose and need of the project, and comments from the public and agencies submitted during the circulation of the draft environmental document.

After reviewing all comments on the Draft Environmental Impact Report/ Environmental Assessment and updated technical studies, the Project Development Team compared each alternative against the project Purpose and Need and the potential environmental impacts (to both the natural and the physical environment), and identified a preferred alternative.

Preferred Alternative

Caltrans has identified Alternative 4 as the preferred alternative because it will improve continuity and interregional mobility, provide for future traffic demand, and meet the purpose and need of the project while having the least amount of permanent impacts to wetlands and critical habitat for threatened and endangered species.

Alternative 4 would have a total (vernal pools plus wetlands) of 2.78 acres of permanent wetland impacts, compared to 4.75 acres for Alternative 2. Alternative 4 would have much less impact to the threatened California tiger salamander than Alternative 4; there would be no loss to critical breeding habitat, less impacts to temporary aquatic habitat and similar impacts to upland habitat.

Alternative 4 would have less impacts to the critical habitat for the endangered Vernal pool fairy shrimp; 0.79 acre compared to 2.93 acres. Alternative 4 would permanently impact a combined 2.59 acres of critical habitat for the endangered Hairy Orcutt grass and San Joaquin Valley Orcutt grass compared to 4.21 acres with Alternative 2. Permanent impact to the critical habitat for the threatened Succulent owl's clover would be 2.59 acres with Alternate 4 compared to 4.53 acres with Alternative 4.

Alternative 2 would have fewer impacts to the human environment than Alternative 4. Alternative 4 would impact slightly more total acres of farmland than Alternative 2; 230 acres compared to 223 acres. Alternative 4 would relocate 26 business located adjacent to the existing highway compared to none for Alternative 2. Alternative 4 would also increase noise to existing residences located on west side of the highway by moving the new facility closer to them. Lastly Alternative 2 would be less costly to build than Alternative 4 due to the lack of businesses needing to be relocated.

The PDT team determined that the impacts to the human environment caused by Alternative 4 would be less than those to the biological environment impacts with Alternative 2. Business could be relocated to the planned commercial areas in the adjacent new communities currently under construction and a sound wall could be built to mitigate noise impacts to existing residences.

Permanent impacts to wetlands and critical habitat for threatened and endangered species was determined to be more difficult to mitigate for. Therefore, the PDT has identified Alternative 4 as the preferred alternative.

1.7 Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Environmental Impact Report/Environmental Assessment (EIR/EA)

Two additional Build Alternatives—Alternatives 1 and 3—were considered during the Project Initiation/Preliminary Environmental Assessment Report phase of the project. A map of the four alternatives initially proposed for the project is shown as Figure 1-7.

If an alternative does not achieve the intended purpose established for the project, it does not make sense to continue spending resources evaluating it, so it is eliminated from further consideration. Another factor in screening alternatives was the cost. An alternative was eliminated if the cost substantially exceeded the available funding.

Alternative 1, known as the Adopted Alignment, resembled the preferred alternative identified in the 1995 Tier I Environmental Impact Report/Environmental Impact Statement. This alternative gradually moved east of the existing State Route 41 from north of Avenue 12 through fallow fields and agricultural lands. Near Avenue 15, the alignment was about 2,700 feet east of the existing State Route 41. North of the Madera Canal, the alignment curved west and kept an alignment roughly 250 feet east of the existing State Route 41 before connecting with State Route 145.

The Project Development Team made a decision in October 2015 to withdraw this alternative from further consideration based on the inability to avoid potentially significant environmental impacts to designated critical animal and plant habitat, and wetlands. The decision was based on the available mapping of critical animal and plant habitat from the U.S. Fish and Wildlife Service in an attempt to minimize potential significant impacts and the related mitigation costs.

Alternative 1 was 9.8 miles long, exceeding the length of both Build Alternatives under consideration by over 3.5 miles. The length of Alternative 1 increased the cost of construction materials (asphalt and concrete) and increased the amount of right-of-way needed (646 acres). Inevitably, the increase in right-of-way acquisition had the potential to result in more impacts to critical habitat, farmland, and wetlands, which had the potential to increase the estimated cost of mitigation and overall cost of the project.

Alternative 3, known as the West Alignment, was proposed west of the existing State Route 41 north of Avenue 12 through fallow fields and agricultural lands. North of Avenue 15, the alignment was about 3,550 feet west of the existing State Route 41, then curved east to join the existing State Route 41 and kept an alignment roughly 250 feet east of the existing State Route 41 before connecting with State Route 145.

This alternative was withdrawn from further consideration based on the inability to avoid significant environmental impacts, such as recorded cultural resource sites, designated critical animal and plant habitat, and wetlands.

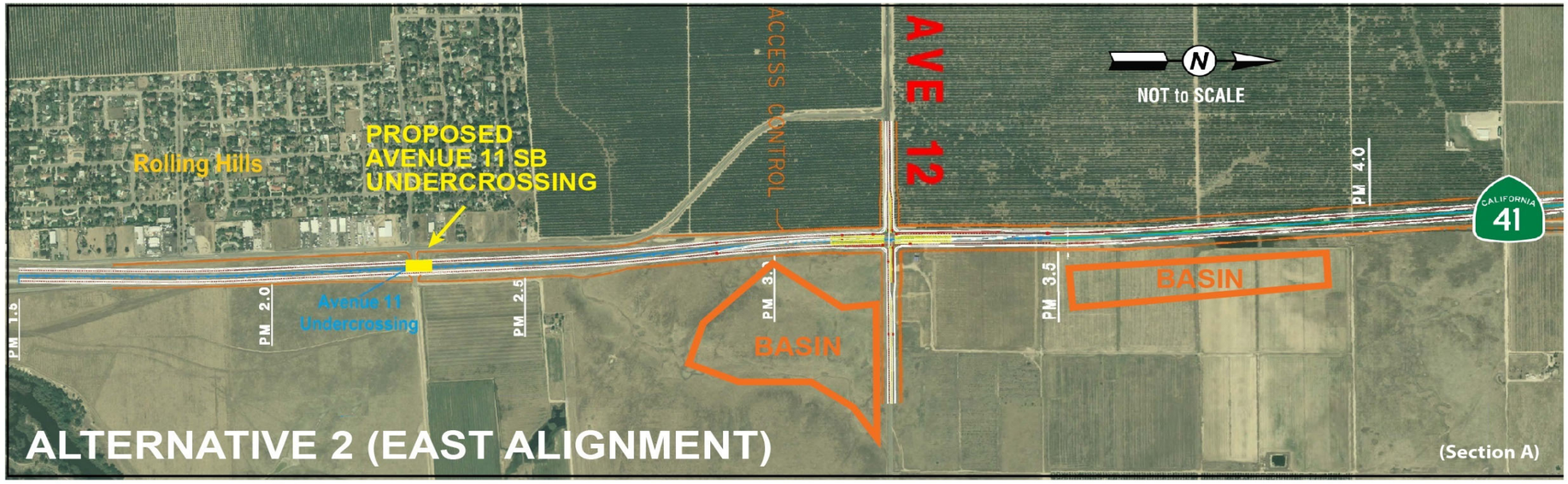
Alternative 3 was 9.7 miles long, exceeding the length of both Build Alternatives under consideration by over 3.5 miles. The length of Alternative 3 increased the cost of construction materials (asphalt and concrete) and increased the amount of right-of-way needed (631 acres). Inevitably, the increase in right-of-way acquisition had the potential to result in more impacts to critical habitat, farmland, wetlands and unrecorded cultural resources, which had the potential to increase the estimated cost of mitigation and overall cost of the project.

1.8 Permits and Approvals Needed

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

Agency	PLAC	Status
U.S. Fish and Wildlife Service	Section 7 consultation for Threatened and Endangered Species	A Biological Opinion was received on August 29, 2019 for the Preferred Alternative. See Appendix J

Agency	PLAC	Status
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	The application for a 1602 permit would be submitted during the Plans, Specifications and Estimates phase of the project.
California Department of Fish and Wildlife	Section 2081(b) permit for incidental take of listed species	The application for a 2081(b) permit would be submitted during the Plans, Specifications and Estimates phase of the project.
U.S. Army Corps of Engineers	An Individual Permit for permanent impacts to Wetlands and Waters of the United States	The application for a 404 permit is submitted during the Plans, Specifications and Estimates phase of the project.
U.S. Bureau of Reclamation	Permit for an archaeological survey or excavation on federal or tribal lands	A permit was issued on July 23, 2015 under the Archaeological Resources Protection Act (ARPA) of 1979.
U.S. Bureau of Reclamation	Application for a transportation facility on federal land	The application would be submitted during the Plans, Specifications and Estimates phase of the project.
San Joaquin Valley Regional Water Quality Control Board	Section 401 Certification for a Water Discharge Permit	The application for a 401 permit is submitted during the Plans, Specifications and Estimates phase of the project.
San Joaquin Valley Air Pollution Control District	Dust Control Plan and/or National Emissions Standards for Hazardous Air Pollutants (NESHAP) – Notification would be required before demolition of any bridges or structures	Caltrans Standard Specifications pertaining to dust control plans would be included in the construction contracts. Notification to the air district would be made during the construction phase of the project.
Office of State Historic Preservation	Concurrence with Section 106 Consultation eligibility determination	A copy of the concurrence letter received for the determination of eligible historic properties is included in this document as Appendix N.
Office of State Historic Preservation	Concurrence with Findings of Effect	The State Historic Preservation Officer concurred with the Finding of No Adverse Effect in July 10, 2019. See Appendix N.
County of Madera	Freeway Agreement	The freeway agreement will be completed after approval of the final environmental document.



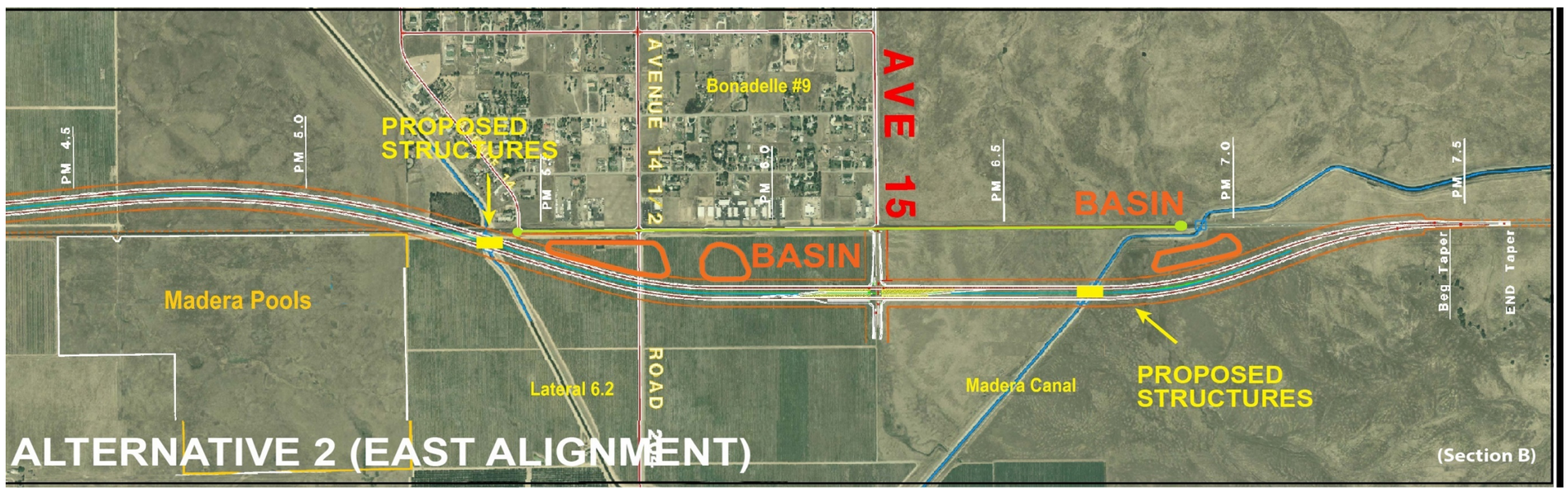


Figure 1-4 Alternative 2 Alignment

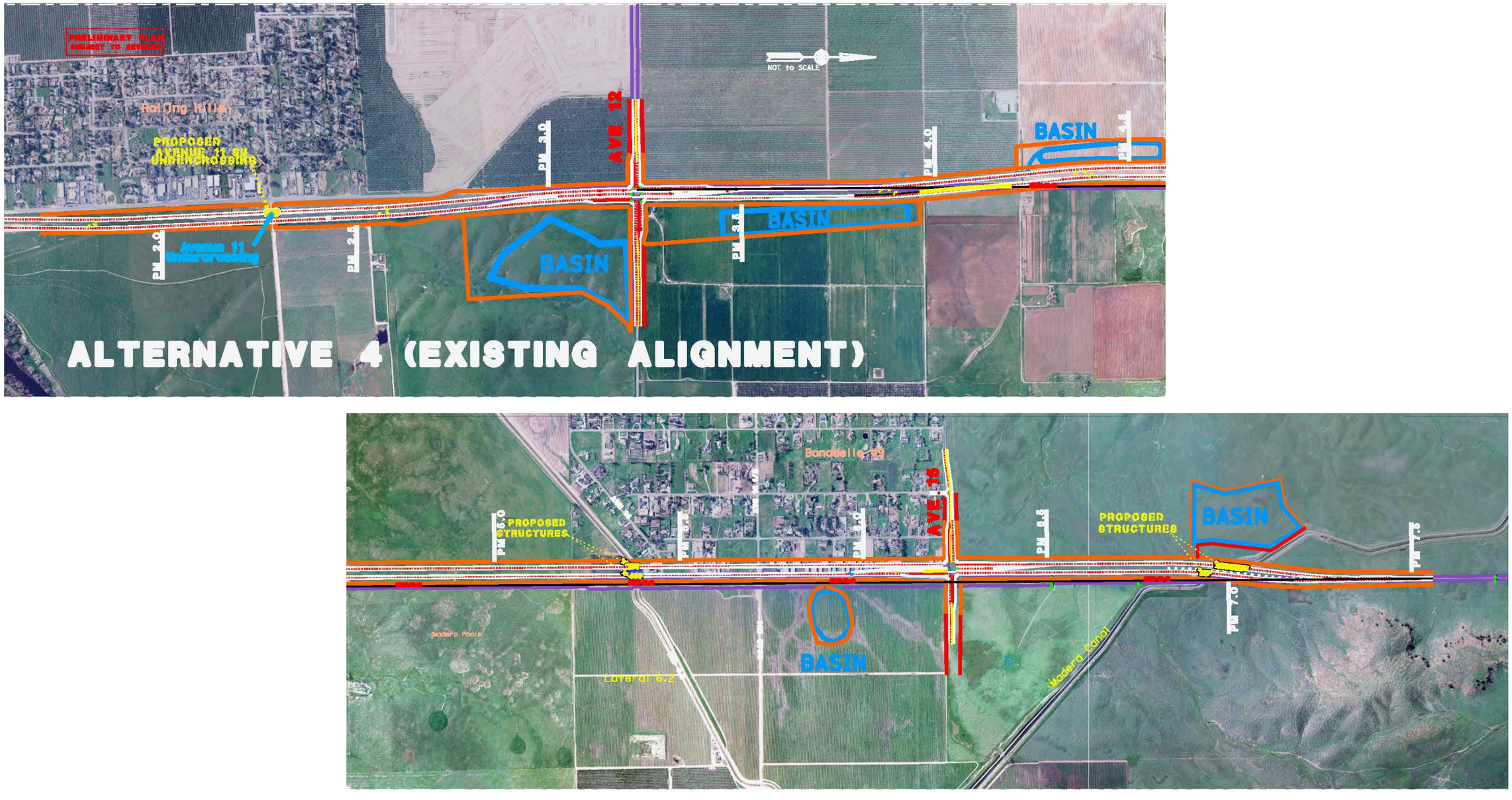
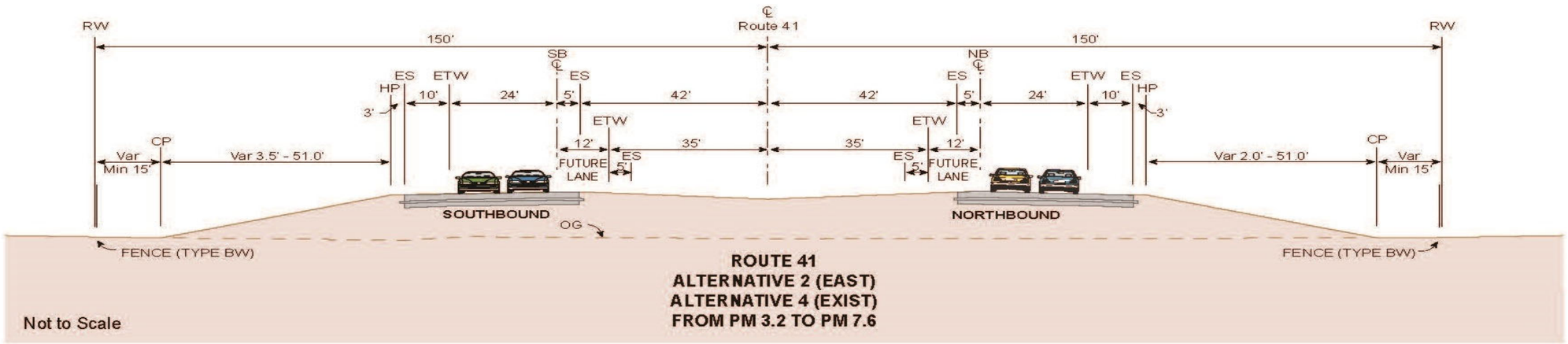


Figure 1-5 Alternative 4 Alignment



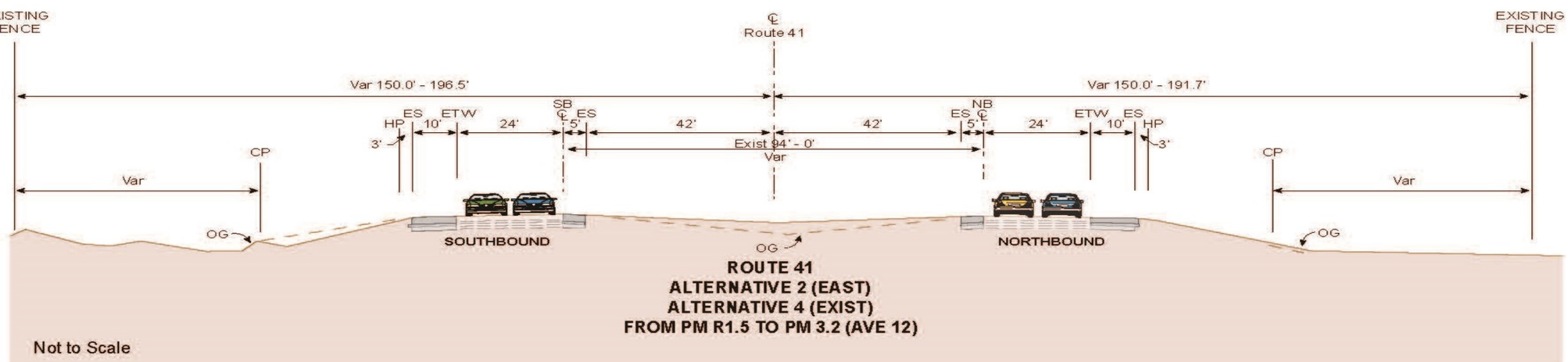


Figure 1-6 Typical Cross Sections

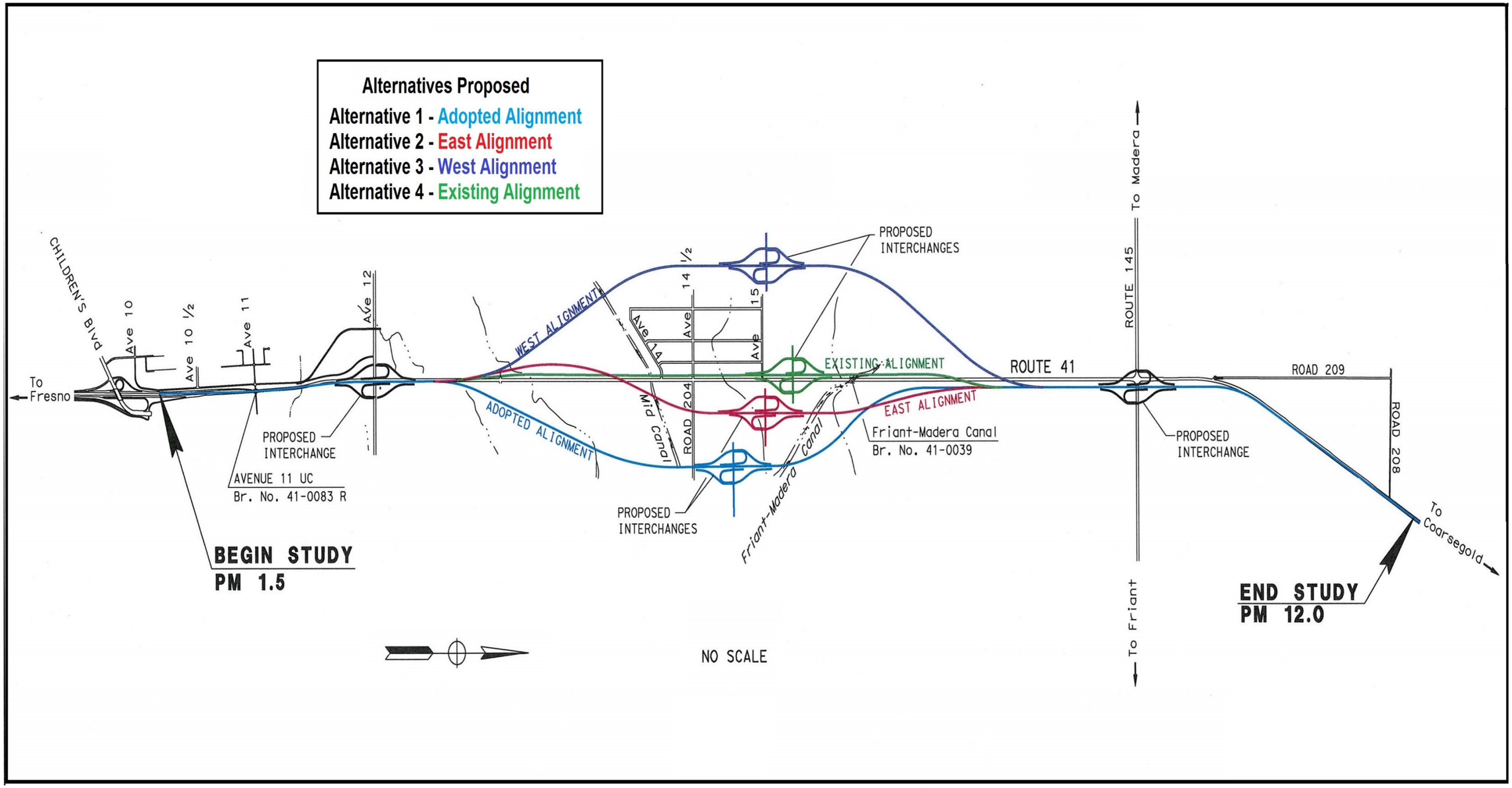


Figure 1-7 Alternatives Initially Proposed

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

This chapter discusses the impacts of the project to the existing environment and lists all measures intended to lessen those impacts. Mitigation measures as defined under California Environmental Quality Act are discussed in Chapter 3 of this document.

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 proposed project is not located within a coastal zone (California Coastal Commission website, February 2015).
- Wild and Scenic Rivers—No rivers classified as Wild or Scenic exist within the proposed project area (Bureau of Land Management/Wild and Scenic Rivers website, February 2015).
- Parks and Recreation Facilities—No parks and recreational facilities exist within the proposed project area (Community Impact Assessment, 2015).
- Timberlands—No timberland production zones are located in the proposed project area (Madera County Planning Department, May 26, 2015).
- Environmental Justice—No minority or low-income populations that would be adversely affected by the proposed project have been identified as determined by the 2015 Community Impact Assessment. Therefore, this project is not subject to the provisions of Executive Order 12898.
- Hydrology and Floodplain—The project does not encroach into a 100-year base floodplain as defined by 23 Code of Federal Regulation, Section 650.105(q). The Flood Insurance Rate Maps (FIRM) designate the project area to be located in Zone X (Floodplain Evaluation, September 2015). The project would not have an adverse effect on hydrology due to its design features (detention basins).
- Geology/Soils/Seismic/Topography—No geologic or topographic features were identified within southern Madera County (National Park Service/Registry of Natural Landmarks website, 2015). No active faults

exist within the proposed project area (California Department of Conservation website, 2015).

- Energy—When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, the project would not have an adverse effect (Caltrans Annotated Outline, 2016).

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 corridor. 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

Caltrans prepared a Community Impact Assessment for the project in November 2015.

The project corridor (the existing State Route 41 and adjacent area) lies in southeast Madera County, 3 miles north of the Fresno/Madera County line, about 15 miles east 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. Little Table Mountain is northeast of the proposed project, and the San Joaquin River bluffs are to the south.

The Tier I 1995 Environmental Impact Report/Environmental Impact Study for the Route 41 Improvement Project identified the project area as a bedroom community of the Fresno/Clovis metropolitan area. Most residents within the project vicinity drive to Madera by way of Avenue 12 or Avenue 15, or via State Route 41 to Fresno or Clovis for employment. State Route 41 is the only commuter route between Oakhurst and other Madera County mountain communities and the Fresno area. No other Madera County valley roads cross the San Joaquin River east of State Route 99 except for rural Road 206 that connects Road 145 to Friant Road at Friant.

The project limits begin 0.8 mile south of the Avenue 11 undercrossing and end 1.4 miles north of Avenue 15. South of Avenue 12, the existing State Route 41 is a four-lane freeway that transitions to a three-lane rural highway

(one lane northbound, two lanes southbound). North of Avenue 12, the existing State Route 41 is a two-lane rural highway.

Existing Land Use

At the beginning of the project on the west side of the State Route 41 freeway is the Rolling Hills subdivision located between Avenue 10 to north of Avenue 11. The subdivision is separated from the freeway by a two-lane frontage road that runs along the east edge of Rolling Hills from Avenue 10 to Avenue 11¼. It includes a variety of roadside businesses, such as a boat and water sports business, toy store, model home sales, veterinary hospital, furniture consignment store, gas station/mini-mart, used car sales, and auto repair shop. An isolated olive orchard sits between the frontage road and the freeway in the southeast corner of the existing State Route 41 and Avenue 12. The first phase of construction for the Riverstone Development, formerly known as Gateway Village, is located to the west of the frontage road, along Avenue 12 (see Figure 2-1). North of Avenue 12, the existing two-lane highway passes a pistachio orchard, vineyard, and open space grazing land. Past the Lateral 6.2 canal near Avenue 14 is a commercial strip of businesses that stretches along the highway to Avenue 15. This commercial strip is the eastern edge of the Bonadelle Ranchos Number 9 subdivision. North of Avenue 15, the existing State Route 41 goes through open space grazing land and crosses the Madera Canal before reaching the northern project limits.

At the beginning of the southern project limits, on the east side of the State Route 41 freeway, is open space grazing land and fallow farm fields extending from Avenue 10 to Avenue 12. North of Avenue 12 are a farm shed, fallow farm fields, and a farm stand building at the Avenue 13 alignment. The Caltrans wetlands/vernal pools mitigation parcel known as Madera Pools sits south of Avenue 14. North of Madera Pools are vineyards that extend to Avenue 15. North of Avenue 15, the existing State Route 41 goes through open space grazing land and crosses the Madera Canal before reaching the northern project limits.

Within the project limits, most of the area surrounding the existing State Route 41 is designated as rural agriculture or rural commercial (Madera County General Plan). Roughly 80 percent of the project corridor is currently either open space grazing land, farm fields, or vacant land. The remaining 20 percent of the project corridor is built up and includes commercial and industrial uses, residential areas, and a church. 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 Station Number 9 (CAL FIRE station), which is on Avenue 11 in Rolling Hills about 3 blocks west of the freeway.

However, existing land use and current zoning within the project corridor differ. The existing use of the land within the project corridor can be seen in

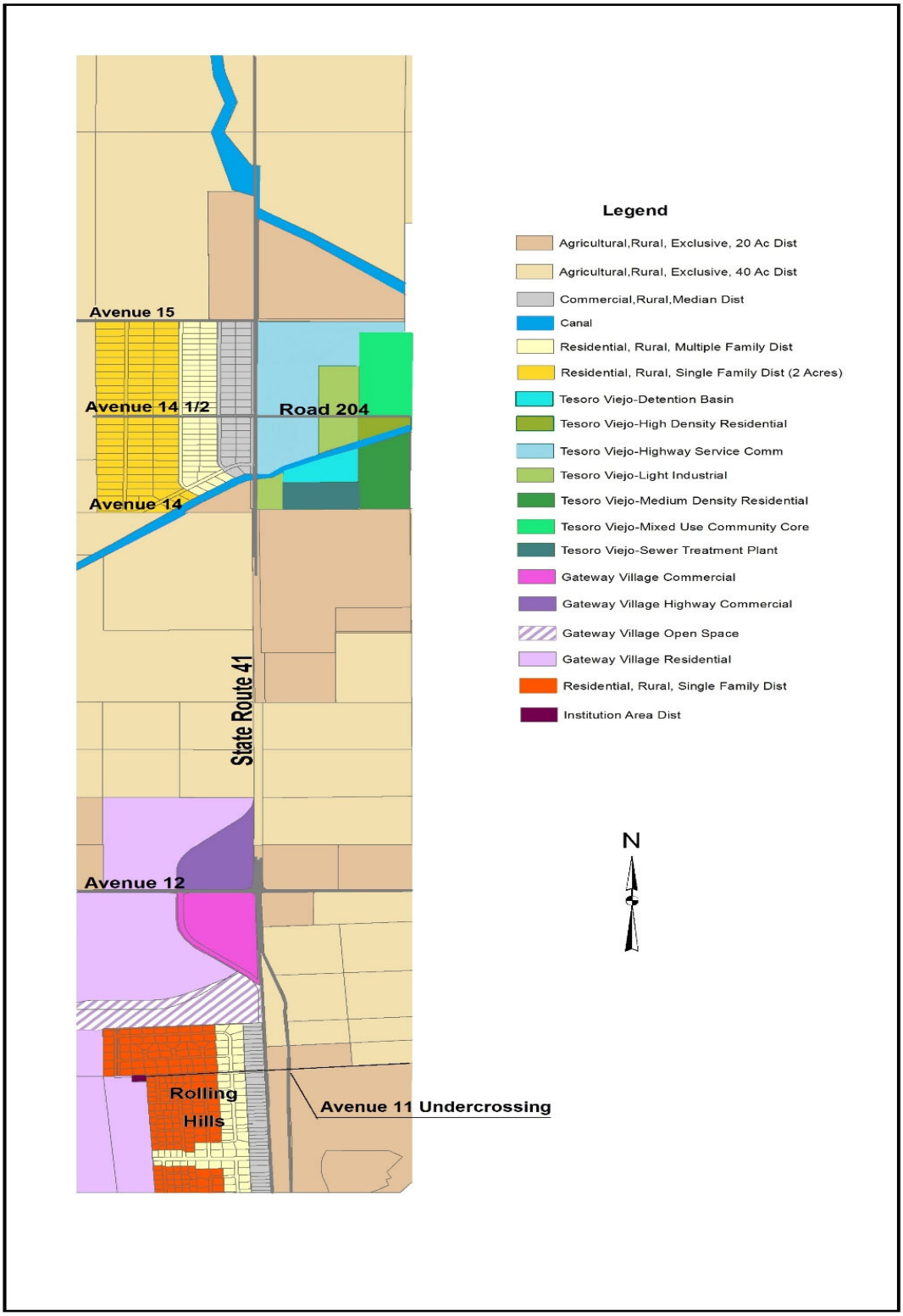
the aerial maps used to show the Build Alternatives (Figure 1-4 and Figure 1-5 at the end of Chapter 1). Table 2.1 on the following page provides the current zoning types, a general location of each zone, the name of the development, and the development's current construction status.

Table 2.1 Current Zoning Within Project Corridor

Use	Zoning Code	Zoning Name	Development Area	Development Status
Agricultural	ARV-20	Agricultural, Rural, Valley District-20 Acres	Throughout study area	N/A
	ARE-40	Agricultural, Rural, Valley District-40 Acres		
Residential	RRM	Residential, Rural, Multiple Family District	Rolling Hills	Built
			Bonadelle Ranchos Number 9	Built
	RRS	Residential, Rural, Single Family District	Rolling Hills	Built
	RRS-2	Residential, Rural, Single Family District-2 Acres	Bonadelle Ranchos Number 9	Built
	GVR	Gateway Village Residential	Riverstone Development	Began Construction in 2015
	TV-HDR	Tesoro Viejo-High Density Residential	Tesoro Viejo	Construction Pending
	TV-MDR	Tesoro Viejo-Medium Density Residential	Tesoro Viejo	Construction Pending
Commercial	CRM	Commercial, Rural, Median District	Rolling Hills	Built
			Bonadelle Ranchos Number 9	Built
	TV-HSC	Tesoro Viejo-Highway Service Commercial	Tesoro Viejo	Construction Pending
	GV-C	Gateway Village Commercial	Riverstone Development	Began Construction in 2015
	GV-HC	Gateway Village Highway Commercial		
Open Space	GV-OS	Gateway Village Open Space		
Mixed Use	GV-MU	Gateway Village Mixed Use		
	TV-MUCC	Tesoro Viejo-Mixed Use Community Core	Tesoro Viejo	Construction Pending
Other	IA	Institution Area District	Rolling Hills	Built
	TV-DB	Tesoro Viejo-Detention Basin	Tesoro Hills	Construction Pending
	TV-LI	Tesoro Viejo-Light Industrial		
	TV-STP	Tesoro Viejo-Sewer Treatment Plant		

Source: Madera County Planning Department, September 2015

Figure 2-1 is a map of the current zoning within the project corridor, which shows that the area along Avenue 12 west of State Route 41 and the area between Avenue 14 and Avenue 15 east of State Route 41 have already been zoned for uses other than agriculture.



Source: Produced by Caltrans Graphics Branch, based on Madera County Assessor's Records, 2015

Figure 2-1 Current Zoning Within Project Corridor

Future Land Use

Multiple plans and policies govern land use decisions in the project area. Area Plans are planning documents that are circulated to the public as Environmental Impact Reports. When adopted by the County, an Area Plan becomes part of the County's General Plan. The Area Plans in the project vicinity are areas approved for growth by Madera County.

Individual development projects are required to have a Specific Plan circulated to the public in the form of an Environmental Impact Report. If the project location does not fall within an existing Area Plan, an Area Plan must be prepared and adopted by the County prior to preparation and approval of the Specific Plan.

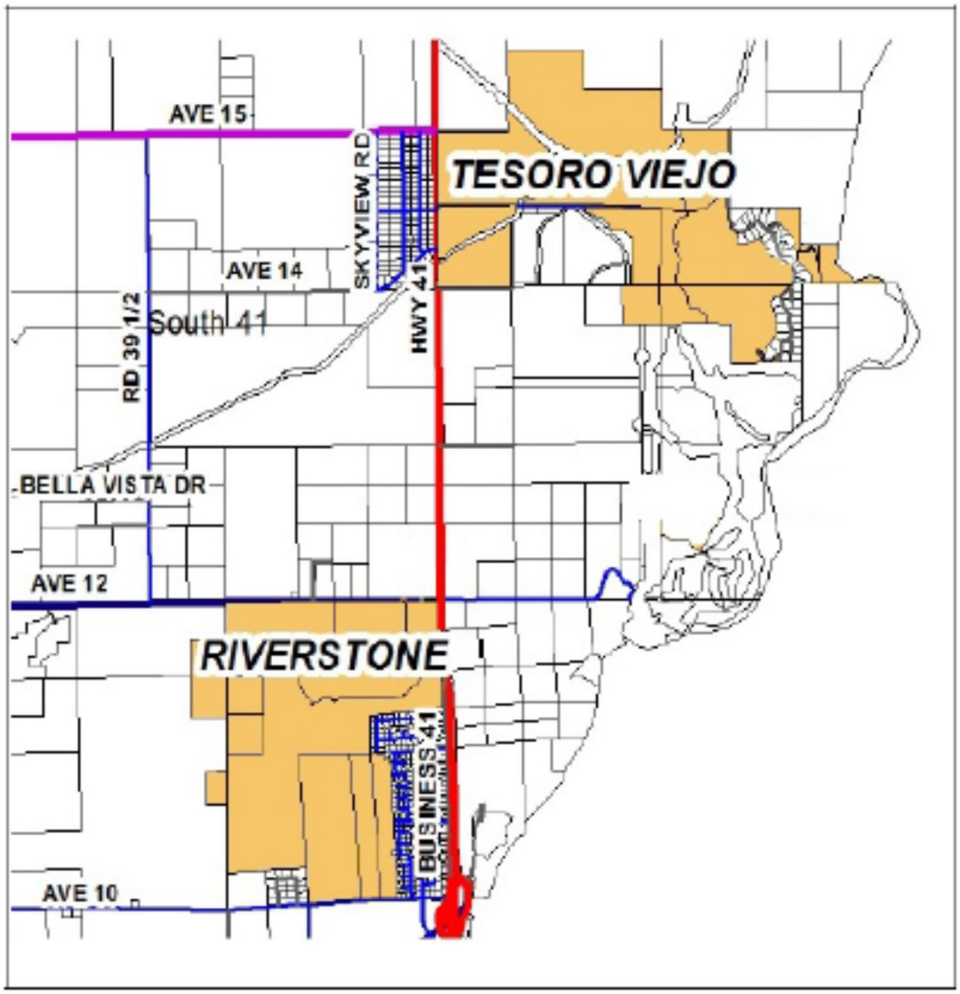
Table 2.2 summarizes the Area Plans adopted by Madera County near the proposed project.

Table 2.2 Area Plans Approved near the Project

Name	Proposed Uses	Status
O'Neals Area Plan	Maintains cattle grazing as the main land use and confines development mostly within the existing subdivisions (Bonadelle Ranchos Number 9 is located within the boundaries of this plan)	Plan adopted in 1980
Gateway Village Area Plan (now known as Riverstone)	Includes 5,836 low-density residential units and 742 mixed-use residential units	Plan adopted in 2002
Gunner Ranch West	Includes 2,840 residential units, commercial uses, hospital-related services, a medical offices building, a government center, open space and parks, a hospital electrical substation, and a wastewater treatment plant	Plan adopted in 1994 and later amended
Rio Mesa Area Plan	Includes three sub-areas on about 15,000 acres: 1. North Fork Village - now called North Shore at Millerton Lake, includes 5,200 residential units of high-, medium-, low-, and very low-density; and mixed-use, commercial (including highway service commercial), light industrial uses, open space and parks, schools, a sewage treatment and water treatment facility, and community park/storm water retention basin 2. Rio Mesa Community - Tesoro Viejo development within this area includes 5,200 residential units of high-, medium-, low-, and very low-density; and mixed-use, commercial (including highway service commercial), light industrial uses, open space and parks, schools, a sewage treatment and water treatment facility, and community park/storm water retention basin 3. Avenue 12 Village - includes the Tra Vigne Subdivision, which proposes 432 medium-density residential lots on 70 acres, approximately 70 acres of open space and a wastewater treatment plant. Recirculated Partial Draft Environmental Impact Report in July 2015 but has not been approved by Madera County yet	Plan adopted in 1995

Source: Community Impact Assessment, Caltrans, November 2015

In the recent past, three major developments have been approved that potentially would build up to 18,000 homes in and around the project area. Two of these developments—Tesoro Viejo and Riverstone—would contribute future traffic to the segment of State Route 41 within the project limits and are shown in Figure 2-2. The third development—Gunner Ranch West—is south and southwest of the project limits. It is expected to contribute traffic to the freeway segment of State Route 41. These three developments are summarized in Table 2.3. All development is under the jurisdiction of Madera County.



Source: Madera County Community and Economic, Planning Division, September 2015

Figure 2-2 Approved Development within Project Limits

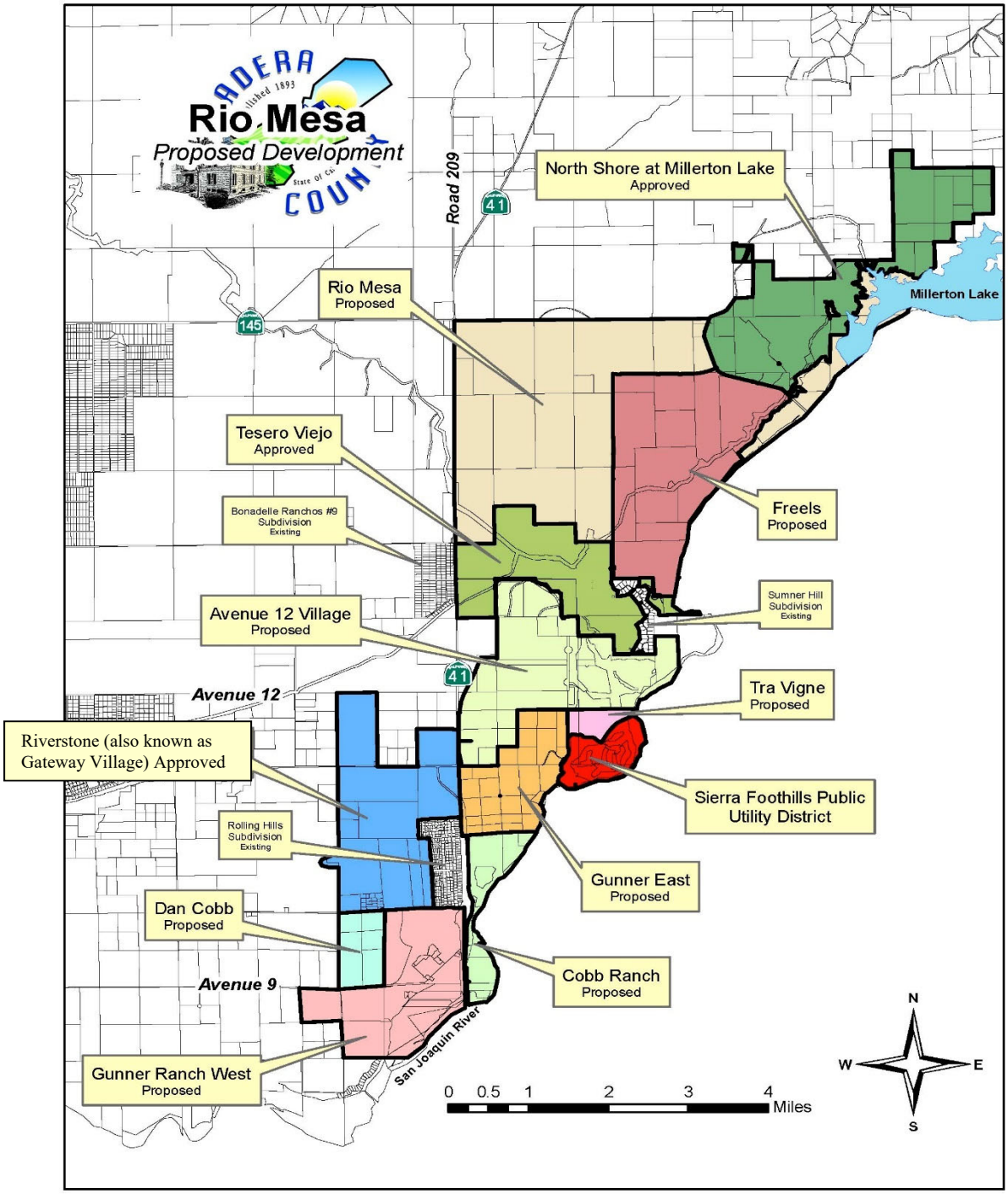
Table 2.3 Approved Development Within the Project Corridor

Name	Location	Proposed Uses	Status
Riverstone/Gateway Village	West of the existing State Route 41, north or south of Avenue 12	6,568 dwellings total on 1,973 acres. Uses include 5 low-density residential neighborhoods and two mixed-use/commercial neighborhoods, light industrial uses and 148 acres open space. Four elementary schools are proposed.	Specific Plan Adopted in 2007 Construction began in 2015
Tesoro Viejo	East of State Route 41 between Avenue 12 and the Madera Canal	Included in Rio Mesa Plan; includes 5,200 residential units of high-, medium-, low-, and very low-density and mixed-use, commercial (including highway service commercial), light industrial uses, open space and parks, schools, a sewage treatment and water treatment facility, and community park/storm water retention basin.	Specific Plan Adopted in 2013 Construction began in 2016
Gunner Ranch West	South and southwest of the project corridor, north and south of Children's Boulevard (Avenue 10), and west of the State Route 41 freeway	2,840 residential units, 2,050,000 square feet of region-serving commercial uses; 1,100,000 square feet of hospital-related services; a medical office building; a government center, 58 acres of open space and parks, 2 acres for hospital electrical substation; and a 62-acre wastewater treatment plant.	Specific Plan Adopted in 2014 No construction date

Sources: Madera County 2016-2024 Housing Element Update Public Review Draft November 2014
Tesoro Viejo Specific Plan, 2012
Gunner Ranch West Specific Plan, 2012

Other proposed development projects pending approval from the County of Madera but unlikely to be constructed in the near future include Consolidated Industries (Tathum), which is west of State Route 41 and north of Avenue 12, the San Joaquin River Ranch located between the San Joaquin River and Avenue 12, and Liberty Groves, located about 6 miles west of State Route 41 on both sides of Avenue 12 in Madera Ranchos.

Figure 2-3 is a map presented at a Town Hall meeting by the Madera County Planning Department in 2013 showing the location of approved developments (except for the Madera Quarry) as well as other proposed developments for which specific plans have not yet been written. In addition, the Vulcan Materials Austin Quarry site west of State Route 41 and south of State Route 145 is pending approval from the County of Madera in the near future.



Source: Madera County Planning Department Town Hall Meeting, Madera Ranchos, May 14, 2013

Figure 2-3 Proposed Development in Southeast Madera County

Environmental Consequences

South of Avenue 12, most of the proposed project would be constructed within the existing freeway right-of-way with some additional right-of-way needed for storm water retention basins. North of Avenue 12, the project would be constructed on new right-of-way. Existing homes and businesses west of State Route 41 in Rolling Hills and south of Avenue 12 would not be directly affected by either Build Alternative.

The expressway is expected to improve commuter time by adding a travel lane and reducing the number of access points (local roads and driveways) within the project limits. At-grade intersections (and later freeway interchanges) would be constructed at the existing intersections of Avenue 12 and Avenue 15 only. After construction of the expressway, access from local roads would be limited to right turns only. When the freeway is constructed, all access from local roads would be eliminated.

Both Build Alternatives convert land currently in agricultural production north of Avenue 12. However, the land east of State Route 41 between Avenue 14 and Avenue 15, and the land west of State Route 41 north and south of Avenue 12, has been rezoned for commercial and residential use (see Figure 2.1).

Alternative 2 would acquire 278 acres of right-of-way. All of the land is currently in agricultural production; however, 55 acres have been rezoned for approved growth (Riverstone and Tesoro Viejo).

Alternative 4 would acquire 262 acres of right-of-way along the west side of the existing State Route 41 between Avenue 12 and the Madera Canal. Acquisition of the parcels would eliminate 13 properties zoned for commercial uses (about 25 acres) between Avenue 14 and Avenue 15. This would occur in Phase 2 of this alternative. Types of businesses that would be relocated include a gas station, retail sales (fruit stand, hobby shop, gun dealer), used car sales, recreational vehicles sales and service, services (haircutters, sewing), storage/business units for rent, and wholesale businesses (e.g., automatic gates), and light manufacturing (cabinetry, fiberglass fabrication). The existing use of the remaining 237 acres is in agricultural production; however, about 7 acres have been rezoned for approved growth (Riverstone and Tesoro Viejo).

In comparison, Alternative 2 (223 acres) and Alternative 4 (230 acres) would convert less land in agricultural production than the 1995 Route Adoption alignment, which is expected to convert 260 acres of land in agricultural production. In regard to commercial/industrial businesses, Alternative 2 (none) and the Route Adoption Alignment (6 businesses) would have less impact than Alternative 4 (13 businesses).

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 2.3 Farmlands. For additional information regarding potentially affected employees and relocation assistance, please refer to Section 2.1.4.2 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

Pedestrian and Bicycle Facilities

The Madera County 2011 Regional Bicycle Transportation Plan includes a Class III Bike Route on State Route 41 through Madera County beginning at the San Joaquin River and ending south of the Yosemite National Park entrance to the north. The 2011 plan also calls for a Class II Bike Lane on Avenue 12 west of State Route 41 and a Class III Bike Route east of State Route 41. A Class III Bike Route is planned on Avenue 15 west of State Route 41, and a Class III Bike Route is planned on State Route 145 east and west of State Route 41.

A bikeway Class II (Bike Lane) provides a striped lane for one-way bike travel on a street or highway; a bikeway Class III (Bike Route) provides for shared use with pedestrian or motor vehicle traffic.

A bikeway Class I (Bike Path) provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with minimal cross flow by motorists. Neither the County of Madera nor Caltrans has plans for a Class I Bike Path within the project limits.

Transportation Plans

Transportation plans applicable to this project include the Madera County Regional Transportation Plan and the Madera County Federal Transportation Improvement Program.

Madera County Plans

Madera County plans significant to the project study area are the Madera County General Plan, O'Neals Area Plan, Rio Mesa Area Plan, Gateway Village Area Plan, and Gunner Ranch West Area Plan.

Environmental Consequences

Pedestrian and Bicycle Facilities

Caltrans Transportation Planning recommends a Class III Bikeway or Bike Route for the project, which is consistent with the Madera County plans. Class III bikeway or bike routes designate preferred routes through high demand corridors with posted signs designating a bike route.

Under Title II of the Americans with Disabilities Act, all federal-aid projects must provide curb ramps at pedestrian crossings to allow safe wheelchair access. The intersection design and the proposed sidewalks along Avenue 12 and Avenue 15, including the curb ramps, would meet the requirements of the Americans with Disabilities Act.

Transportation Plans

The project is currently included in the 2019 Regional Transportation Plan (RTP) as a Constrained Capacity-Increasing Project described as a two-phase project with Phase 1 consisting of a four-lane expressway from Avenue 11 to Avenue 14 and a conventional highway to Avenue 15. Phase 2 would consist of widening to a four-lane expressway from Avenue 14 to 1.4 miles north of Avenue 15. Funding is proposed from Local Transportation Improvement Funds and Measure T funds. The project is also listed in the 2019 Madera County Federal Transportation Improvement Program (FTIP) described as a two-lane to four-lane improvement from Avenue 12 to State Route 145, with funding proposed from Local Transportation Improvement Funds, including Developer's Impact Fees. Both Build Alternatives are consistent with these plans, as amended. The No-Build Alternative would not be consistent with these plans.

Madera County Area Plans

Table 2.4 shows the consistency between the project alternatives and the Madera County area plans and with the specific development projects.

Table 2.4 Consistency with Local Plans

Policy	Alternative 2	Alternative 4 & Alternative 4, Phased	No Build Alternative
Madera County General Plan			

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.	**Consistent** Provides additional lanes to meet the future traffic demands of the county	**Consistent** Provides additional lanes to meet the future traffic demands of the county	**Not Consistent** Would not make any improvements to State Route 41 to meet the future traffic demands of the county
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.	**Consistent** Creates a more efficient route for trucks that would reduce conflicts with automobile traffic	**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
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.	**Consistent** Located within an area designated for new growth based on the approved Madera County area plans	**Consistent** Located within an area designated for new growth based on the approved Madera County area plans	**Consistent** No change to existing land use
Area Plans Significant to the Project Study Area			
O'Neals Area Plan	**Consistent** Would not encroach into this area plan	**Not Consistent** Converts 45.5 acres of grazing land for a water retention basin and widening of State Route 41	**Not consistent** No land use change would occur
Rio Mesa Area Plan	**Not consistent** Differs from the proposed freeway alignment shown on the Rio Mesa Area Plan	**Not consistent** Differs from the proposed freeway alignment shown on the Rio Mesa Area Plan	**Not consistent** Differs from the proposed freeway alignment shown on the Rio Mesa Area Plan
Riverstone (formerly Gateway Village Area Plan)	**Not Consistent** Eliminates planned access onto State Route 41 from a frontage road north of Avenue 12	**Not Consistent** Eliminates planned access onto State Route 41 from a frontage road north of Avenue 12	**Consistent** Allows for access directly to existing State Route 41

Gunner Ranch West Area Plan	**Consistent** The alignment would not encroach into this area plan	**Consistent** The alignment would not encroach into this area plan	**Consistent** No changes would occur to existing roadways

The two Build Alternatives have been developed with input from the Tesoro Viejo developers and other developers involved to minimize conflicts with their existing plans. After a preferred alternative is selected, some area plans may need amending.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and mitigation measures are required; however, the County of Madera would need to amend its General Plan before construction.

2.1.3 Farmland

Regulatory Setting

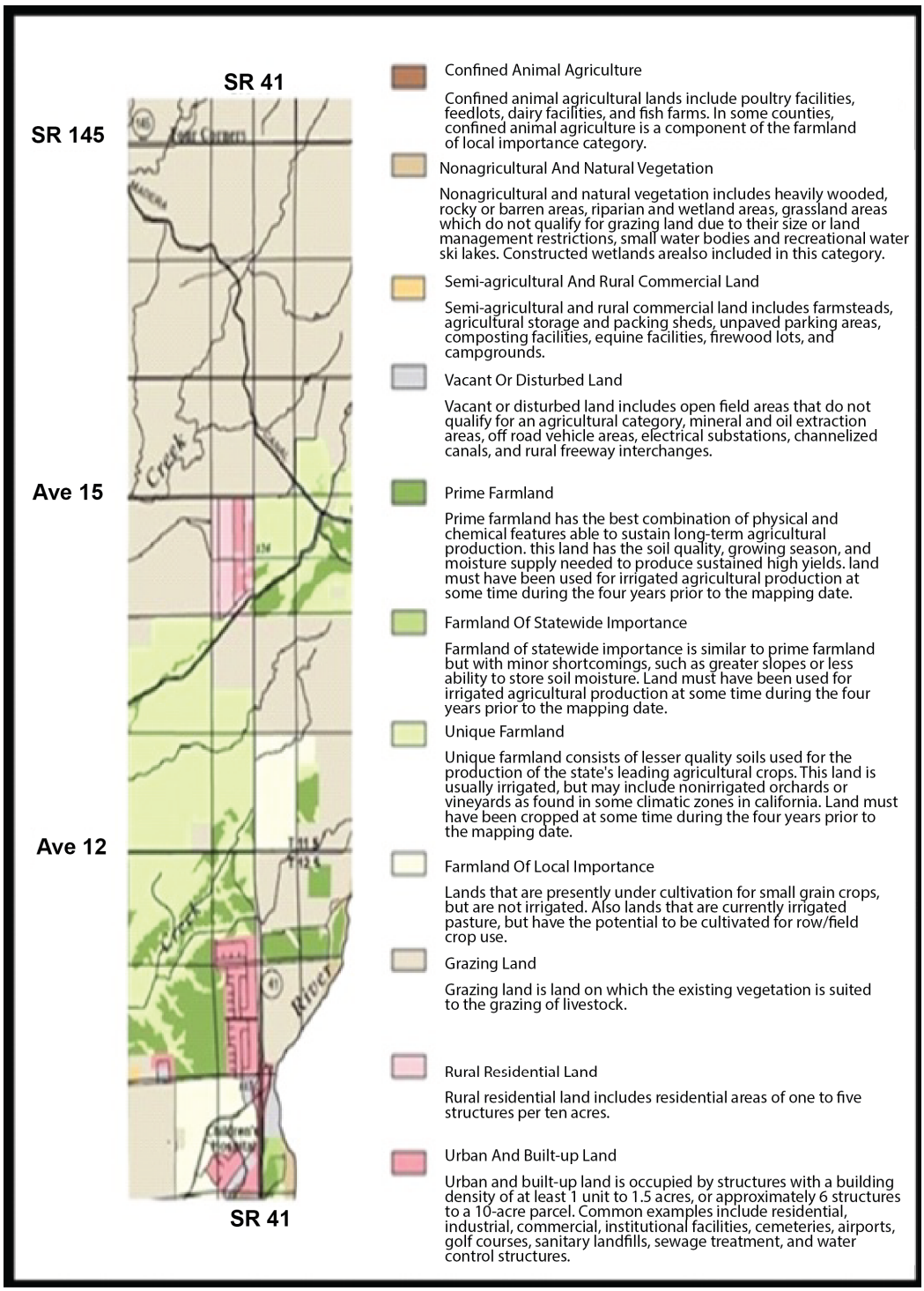
The National Environmental Policy Act and the Farmland Protection Policy Act (7 U.S. Code 4201-4209; and its regulations, 7 Code of Federal Regulations Part 658) require federal agencies, such as the Federal Highway Administration, to coordinate with the Natural Resources Conservation Service if their 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 requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

Affected Environment

Within the project corridor, farmland is used mostly for open-range cattle grazing (not dairy), pistachios, oat hay, and grape vineyards. One owner has developed a fruit stand with paved parking on the farmland. Three parcels under Williamson Act contracts, or agricultural preserve lands, were identified within the proposed project limits.

Figure 2-4 shows the Natural Resources Conservation Service Important Farmland Mapping for the proposed project corridor and vicinity in southeastern Madera County. Within the project corridor, the two subdivisions—Rolling Hills and Bonadelle Ranchos Number 9—are designated as Urban and Built-Up Land. About half of the project corridor is designated as Grazing Land, most of it located north of Avenue 15 and between Avenues 13 and 14 on both sides of State Route 41, and east of State Route 41, south of Avenue 12. In the area of the Caltrans environmental mitigation parcel, known as Madera Pools, the area is designated as Farmland of Local Importance.



Source: Natural Resources Conservation Service Rural Land Mapping Edition Madera County Important Farmland 2014

Figure 2-4 Natural Resources Conservation Service Farmland Mapping

The area east of State Route 41 between Avenues 14 and 15 is mostly designated as Unique Farmland with some isolated portions designated as Prime Farmland north and south of the Lateral 6.2 canal. West of State Route 41, between the alignment of Avenue 13½ and the Rolling Hills subdivision, the area is mostly designated as Unique Farmland with some isolated portions designated as Prime Farmland north and south of Avenue 12. In summary, based on the map in Figure 2-4, it appears the project corridor includes approximately 50 percent Grazing Land, 20 percent Urban and Built-Up Land, 12 percent Unique Farmland, 10 percent Farmland of Local Importance, and 8 percent Prime Farmland.

Environmental Consequences

On July 23, 2015, Caltrans initiated consultation with the Natural Resources Conservation Service (NRCS) by completing form NRCS-CPA-106 Farmland Conversion Impact Rating for Corridor-Type Projects for the proposed project. The form was sent to the field office of the Natural Resources Conservation Service for Madera County for review and soil designation. The Farmland Conversion Impact Rating was completed by the Madera County field office and returned to Caltrans on August 23, 2015. Caltrans submitted a revised form to the Natural Resources Conservation Service January 11, 2016 that included the additional acreage for the water detention basins. The Natural Resources Conservation Service returned the revised form on February 25, 2016 (see Appendix D).

The Farmland Conversion Impact 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. The Natural Resources Conservation Service uses only prime/unique- and statewide/local importance-classified land on the Farmland Conversion Impact Rating form. According to the U.S. Department of Agriculture, for farmland and other agricultural lands protected or potentially protected under the Farmland Protection Policy Act, if the rating exceeds 160 points, additional alternatives should be considered that would lessen the adverse effects to farmlands.

All acreage has been rounded to a whole number for discussion in this section, except for the Williamson Act properties.

The Farmland Conversion Impact Rating for Alternative 2 is 157 points (rounded). Alternative 2 would acquire 278 acres of right-of-way, of which 223 acres are currently zoned for agricultural use. Although 55 acres are zoned for residential or commercial use, almost all of the acreage is currently used for grazing or agriculture production. Of the total acreage within this alignment, 53 acres are prime or unique farmland and 2 acres are statewide or locally important farmland. The alternative would acquire small slivers, or linear strips of land, from each parcel along State Route 41, and does not bisect parcels (which would make continued farming impractical).

The Farmland Conversion Impact Rating for Alternative 4 is 146 points (rounded). Alternative 4 would acquire 262 acres of right-of-way, of which 230 acres are currently zoned for agricultural use. In contrast to Alternative 2, almost all of the 32 acres zoned for residential or commercial use are not used for grazing or agricultural production. Of the total acreage within this alignment, 59 acres are prime or unique farmland, and 3 acres are statewide or locally important farmland. Table 2.5 shows the farmland amounts that would be converted by construction. The alternative would acquire small slivers, or linear strips of land, from each parcel along State Route 41, and does not bisect parcels and allows for continued farming on the parcels.

Table 2.5 Farmland Conversion by Alternative

Alternatives	Total Right-of-Way Needed (acres)	Land Currently Zoned for Farmland Converted (acres)	Prime and Unique Farmland (acres)	Percent of Farmland in Madera County (approximately 759,000 acres)	Percent of Farmland in California (approximately 25.5 million acres)	Farmland Conversion Impact Rating
Alternative 2 (Corridor A)	278	223	53	0.017	0.0005	158
Alternative 4 (Corridor B)	262	230	59	0.015	0.0004	145

Source: Form NRCS-CPA-106 (Farmland Conversion Impact Rating for Corridor-Type Projects)

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

Williamson Act

Three parcels under Williamson Act contracts, or agricultural preserve lands, were identified within the proposed project limits.

Table 2.6 Potential Impacts to Williamson Act Parcels

Assessor's Parcel Number (APN)	Total area (acres)	Alternative 2		Alternative 4	
		Acquisition (acres)	Remainder (acres)	Acquisition (acres)	Remainder (acres)
049-026-xxx	40.1	4.9	35.2	0.9	39.2
051-215-xxx	248.6	0	248.6	26.1	222.5
051-186-xxx	279.3	0	279.3	0.8	278.5
Total		**4.9**		**27.8**	

**Acreage from Madera County Property Parcel website*

Alternative 2 would acquire 4.9 acres from a 40.1-acre parcel under Williamson Act contract. Total acreage needed for Alternative 4 from parcels under Williamson Act contracts is approximately 27.8 acres, including 0.9 acre from a 40.1-acre parcel, 26.1 acres from a 248.6-acre parcel, and 0.8 acre from a 279.3-acre parcel. The conversion of small slivers, or linear strips, of land to transportation use should not affect the Williamson Act contracts or agricultural preserve status of the remainder parcels because the amount of

acreage remaining on the parcel is substantial enough to avoid cancellation of the contract.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and 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 39 on the west, and State Route 145 on the north. These boundaries were drawn to include the Gunner Ranch West approved development on the south, the Riverstone approved development on the west, and the proposed and approved developments within the Rio Mesa Area Plan east and north of the existing State Route 41.

The proposed project is an expressway through a mostly rural area of Madera County. However, the project area is not remote: the project post miles begin 1½ miles north of the Fresno city limits and the project area is approximately 13 miles east of the Madera city limits, east of the Madera Ranchos subdivisions. The project proposes to construct an expressway for the

purpose of meeting the needs of planned growth adjacent to and surrounding the project area.

1. To what extent would travel times, travel cost, or accessibility to employment, shopping, or other destinations be changed? Would this change affect travel behavior, trip patterns, or the attractiveness of some areas to development over others?

Travel cost was not analyzed by Traffic Operations for this project but is expected to decrease similarly to travel time.

With construction of an expressway, travel times would likely decrease by a few minutes because the speed limit would be increased from 55 miles per hour to 65 miles per hour. However, time waiting at the two signals at Avenue 12 and Avenue 15 would reduce this time savings. The additional travel lanes provided by the expressway would allow for easy and safe passing, thus eliminating conflicts between slower traffic and faster vehicles. Travel time to Madera through the project area may not be affected because most of the trip would be on local roads (Avenue 12 or Avenue 15).

Although both Build Alternatives would alter traffic circulation by reducing direct access to Avenue 15 or by directing traffic onto the frontage road, the controlled access is expected to improve safety and is not expected to result in an increase or decrease in traffic on local streets, result in more indirect routing for emergency vehicles, or result in changes to popular bicycle or pedestrian routes. In addition, drivers would benefit from wider shoulders because there would be a larger recovery (correction) zone next to the roadway.

For most residents of the local area, accessibility to employment, shopping, or other destinations would not change as a result of the project. Due to the rural character of the project vicinity, residents of the existing subdivisions must travel outside the area to work, shop, obtain services, and do other activities.

State Route 41 is and would remain the only direct route to Oakhurst and Yosemite from Fresno and Madera; the expressway does not have the potential to attract additional traffic from other through roads because there are no parallel routes. The number of trips would increase when the already-approved developments are completed and built.

Travel time would improve slightly as discussed above. Although the expressway would provide a welcome benefit to through commuters by shaving a couple of minutes off of travel time and allowing passing opportunities, it is not likely enough time savings to be a factor influencing development in the foothills.

The minor change in travel time would not affect travel behavior or trip patterns. Residents of the existing subdivisions are not expected to change

their destinations, but their approach routes to the expressway would be limited. Drivers would have to get on or off of the expressway/freeway at either Avenue 12 or Avenue 15 because access from Avenue 14, Avenue 14½, and Road 204 would no longer be possible. The future residents of new developments may not experience a change in trip patterns, depending on when the developments and the expressway are actually built. Foothill commuters and travelers would not change their trip patterns because, as noted above, no other direct routes to Oakhurst exist in the area.

The small decrease in travel time provided by the expressway would not be enough to affect the attractiveness of some areas to development over others.

2. To what extent would change in accessibility affect growth or land use change—its location, rate, type, or amount?

Currently, the freeway and transition segment of the existing State Route 41 south of Avenue 12 is access-controlled. However, north of Avenue 12, drivers on northbound and southbound State Route 41 are able to turn left or right into and out of local roads and driveways along the project corridor.

The project would not provide any additional access points. The proposed expressway would provide full access onto or off the divided expressway only at the intersections of State Route 41 with Avenue 12 and Avenue 15. Therefore, the proposed project would eliminate direct access to the following locations: Avenue 14, Avenue 14½. However, limited access to the parcels between Avenue 12 and Avenue 14, and Road 204 would be allowed until a future freeway is constructed.

Alternative 2 would change the access to the commercial strip along the existing State Route 41 between Avenue 14 and Avenue 15 by converting the existing State Route 41 into a frontage road west of the expressway. The frontage road would extend from north of Avenue 15 to a cul-de-sac past Avenue 14.

Alternative 4 would acquire all of the parcels along the existing State Route 41 between Avenue 14 and Avenue 15, so this commercial area would no longer exist. No frontage roads are proposed for Alternative 4.

The restriction of access to the expressway to intersections at Avenue 12 and Avenue 15 is likely to create interest in locating highway-related businesses at these locations. Because these areas are already commercially zoned parcels, it is expected that commercial development would occur. The intersection areas would likely include suitable sites for relocation of some of the businesses that would be relocated by construction of Alternative 4.

At the existing intersection of Avenue 12 with State Route 41, the southwestern and northwestern corners are within the approved Riverstone

development (preceded by the Gateway Village Area Plan approved in 2002), and both of the parcels now have commercial zoning designations. The northeast corner of the intersection, though still zoned agricultural and in agricultural use, was first planned as Highway Service Commercial as part of the Avenue 12 Village Core area of the Rio Mesa Area Plan (1995). The southeast corner of the intersection is also still zoned as agricultural land and used for that purpose. Three of the four corners have been planned for commercial development for many years under the area plans.

At Avenue 15, in addition to the existing commercial zoning within Bonadelle Ranchos #9 along the west side of the existing highway and at Avenue 15, new Highway Service Commercial zoning is present within the approved Tesoro Viejo development along the east side of the existing highway north of the Lateral 6.2 canal and also on the south side of a line extending Avenue 15 eastward. The area southeast of the existing intersection was proposed for this zoning in the Rio Mesa Area Plan (1995). The northwest corner of the existing intersection is within the O'Neals Area plan (as is Bonadelle Ranchos #9) and is planned to remain as agricultural rangeland.

Construction of the expressway is not expected to cause growth, but the project would have some effect on the rate that already planned land use change occurs in the project vicinity by building a transportation facility that would provide adequate capacity for the projected residential population.

Development proposals have been put forward for more than 30 years in this area of Madera County. Development pressure spurred the preparation of the O'Neals Area Plan (approved 1980), and was a factor causing the revision of the Madera County General Plan in 1995 and the adoption of the Rio Mesa Area Plan that same year. Two additional area plans were adopted later, the Gunner Ranch West Area Plan in 1994 and the Gateway Village Area Plan in 2002.

The lack of adequate infrastructure in the project vicinity (including the existing two-lane rural highway) has not deterred development proposals in the area. To date, the rate of growth and land use change in the project vicinity has been very slow.

Of these proposals, developments that have been approved by Madera County that are adjacent to and within the project footprint are Tesoro Viejo (within the Rio Mesa Area Plan area) and Riverstone (within the Gateway Village Area Plan). The Gunner Ranch West development, which is south of the project limits, has also been approved by Madera County.

A Route Adoption was approved for an expressway/freeway corridor alignment for State Route 41 in February 1995. The route adoption alignment extended from El Paso Avenue in the City of Fresno to about 1 mile north of

the junction of State Route 41 and State Route 145 in Madera County (post mile 10.4).

Growth pressure in this area of Madera County intensified in the 1990s. The Caltrans Route 41 Improvement Project Tier I Environmental Impact Statement/Environmental Impact Report (1995) stated, "Recently, pressures for residential development in south central Madera County have increased rapidly." Among the key factors identified were "…spillover demand from the northward expansion of the Fresno-Clovis Metropolitan Area real estate market"; the construction of the new Valley Children's Hospital facility near Avenue 10; and "large-scale land assembly and pre-development planning activity in the Rio Mesa Area of south central Madera County…."

It is unlikely that the expressway would stimulate new growth in the area because most of the project vicinity falls within the approved growth areas delineated in these Madera County planning documents: Rio Mesa Area Plan (1995), Gateway Village Area Plan (2002), and Gunner Ranch West Area Plan (1994). The approved developments in the project vicinity, Tesoro Viejo, Riverstone, and Gunner Ranch West are all within the County-approved growth areas. New zoning has been implemented for the parcels within Tesoro Viejo and Riverstone.

The study area also falls within the O'Neals Area Plan (1980), which directs that future development occur only within the subdivisions that were existing when the plan was written; this includes Bonadelle Ranchos Number 9. The plan also directs that cattle grazing continue as the predominant land use. It appears that Madera County has generally followed the O'Neals Area Plan within this area of southeast Madera County.

The portion of the first-cut screening study area not covered under any area plan is the parcels proposed for development by Consolidated Industries, an irregularly shaped area to the north and west of the Riverstone development. This proposed development was to be included in the Southeast Madera County Area Plan, which the County began preparing in 2010, but an Environmental Impact Report has never been circulated to the public. Lacking an area plan, the development projects proposed within the delineated plan area, including Consolidated, (formerly Tathum), Liberty Groves, and San Joaquin River Ranch, cannot move forward with specific plan documents.

3. To what extent would resources of concern be affected by this growth or land use change?

This highway project is not expected to have significant impacts to the resources of concern within the study area, which are threatened and endangered species, wetlands and vernal pools. Impacts to these resources would mostly be direct impacts due to construction, not indirect impacts due to growth caused by the presence of an expressway. The resources of

concern within the project corridor would be affected by development that is already approved by the County of Madera; such impacts were addressed in the environmental documents accompanying the County's approvals.

Environmental Consequences

Although travel time would improve slightly within the project limits, the time savings would not be substantial. Accessibility to employment, shopping, or other destinations would not substantially change for residents of the project vicinity as a result of the project. The small improvement in travel time is not expected to affect travel behavior or trip patterns and is not expected to be enough to affect the attractiveness of some areas for development over others.

The project is not expected to cause any unplanned growth that would be approved by Madera County. Restricting access within the project area to intersections at Avenue 12 and Avenue 15 would allow relocation of some businesses to parcels that are already commercially zoned. The rate of growth and land use change in the vicinity of the project is driven by the county's approvals of planned developments, though the potential exists that the rate of this growth could be affected by this project. Although land use changes would occur if the project is built, most of the changes were already planned and have been or would be approved by the County. The project is not expected to cause any new growth that has not already been planned by the County of Madera; therefore, impacts to the rate of development as a result of the project, if any, would be minimal.

The results of the first-cut screening determined that project-related growth is not reasonably foreseeable. Because project-related growth is not reasonably foreseeable, no further analysis for growth is required.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and mitigation measures are proposed because the project is not expected to cause any new growth that has not already been planned.

2.1.5 Community Character and Cohesion

Regulatory Setting

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

of human-made resources, community cohesion, and the availability of public facilities and services.

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

Affected Environment

A Community Impact Assessment was completed for the project in November 2015. The project limits include a segment of the existing State Route 41 that is considered to be a rural area. A few residences/farmhouses are scattered throughout the landscape between Avenues 12 and 14, but none of these structures are within the right-of-way needed for the two Build Alternatives. The existing State Route 41 north of Avenue 10 is surrounded by a landscape that is dominated by open space and agriculture except for the two subdivisions—Rolling Hills and Bonadelle Ranchos Number 9. The subdivisions are located about 3 miles from each other.

The Rolling Hills subdivision is at the beginning of the project west of the existing State Route 41 freeway segment south of Avenue 12 and not within the proposed project footprint. A two-lane frontage road separates the subdivision from the existing route. Commercial businesses in Rolling Hills are located on a frontage road separated from the existing State Route 41 freeway segment south of Avenue 12. Commercial businesses in Bonadelle Ranchos Number 9 sit along the west side of the existing State Route 41.

Bonadelle Ranchos Number 9 subdivision is near the north end of the project bordered by the Lateral 6.2 canal on the south, parcels on Skyview Road on the west, Avenue 15 on the north, and the existing State Route 41 on the east. This small subdivision consists of about 182 parcels ranging from 1 acre to 2 acres. About 40 1-acre parcels located along the existing State Route 41 are zoned for commercial use. The remainder of the subdivision consists of single-family residences. About 90.3 percent of these homes are owner-occupied, and 9.7 percent are rentals. There are no public parks, public meeting areas, and community or activity centers within the subdivision. The commercial properties are mostly retail or sales, and there are no banks or grocery stores. There is one church on Avenue 14 west of the existing State Route 41.

According to the 2010 U.S. Census, Bonadelle Ranchos Number 9 had a population of 199 people residing in 106 housing units. Six people residing in the subdivision were 60 years old or older, and there were 79 children under

the age of 18 years old. Five households were vacant. The average commute time for residents is 25 minutes, either to the City of Madera to the west via Avenue 15 or to the Fresno-Clovis area to the south via State Route 41. Elementary and high school-age children travel to Madera Ranchos to the west about 11 miles away.

Homes within the Bonadelle Ranchos Number 9 subdivision appear to be custom homes, individually styled, landscaped, with private water wells. Based on the real estate databases used in August 2015, the homes within the subdivision that are listed for sale range from $240,000 to $450,000, which is much higher than the median cost of a house in Madera County. The higher cost of homes may be attributed to the size of the lot, which ranges between 1 and 2 acres. Within the subdivision, there are currently about 12 residential parcels and 15 commercial parcels that are vacant. Growth within the subdivision is limited to the existing boundaries and current vacancies.

Community cohesion is often defined as a “sense of belonging” to a neighborhood or an attachment to neighbors, groups, and institutions as a result of continued association over time (Standard Environmental Reference Handbook, Volume 4, Chapter 5). The residents of this subdivision appear to have a high level of cohesion, given the high percentage of owner-occupied homes (90.3 percent).

A field inspection for the Draft Relocation Impact Report identified 26 businesses along the west side of the existing State Route 41:

- Chevron gas station
- Americuts
- Sumner Peck Ranch Fruit Stand & Winery
- Al’s Auto Sales
- Lucina’s Sewing
- Storage/business units
- Garden Pottery
- Encore Fine Cabinetry
- Madera Hobby
- Spencer’s Firearms
- JH Sanders Sales & Leasing
- RV’s 4 Less
- Renaissance General Restoration
- Cart Addictions
- Ashjian’s Olives
- Fabwork
- Bullet Fiberglass
- R&C Foods
- Ranchos Auto Sales
- Foothill Greenhouse & Garden Supply
- Mike’s RV Center
- Fresno Marine & Performance
- West Coast Trailer
- California Solar
- J&M Floor Covering
- Affordable Automatic Gates

Most of the businesses are small retail businesses with less than 20 employees. Though the data is limited, field research and analysis from the Better Business Bureau indicate that a relatively even distribution of older and newer businesses are present in the project area. How long each operation has been in business can provide some understanding of the viability and stability of businesses present in the project area. There are seven

businesses that are 1-3 years old, ten businesses that are 4-7 years old, four businesses that are 8-15 years old, and only five businesses are over 15 years old (www.bbb.org). The customers of the vehicle and boat businesses appear to be local commuters or vacationers, travelers, and citizens who recreate in the local foothills, lakes, and golf courses. The customers of the specialty businesses, such as feed, solar, gate designs, and cabinetry makers, appear to be home owners, developers, and local and commuting ranchers and farmers. Because the businesses are in an isolated rural area, most depend on access from State Route 41.

Based on the type of services these businesses provide and their limited longevity, it does not appear that these businesses contribute to the cohesiveness of the subdivision.

In addition to the commercial businesses within Bonadelle Ranchos Number 9, there are seven separate property owners currently using the land for agricultural production within the project corridor. One owner has developed a fruit stand with paved parking on the farm. Some of these farms and ranches have their land currently planted in grape vineyards or pistachio orchards, and some are replanting or have their land in open space for grazing.

Environmental Consequences

Neither Alternative 2 nor Alternative 4 would have an effect on the community character and cohesion of Rolling Hills.

The project corridor consists mostly of small businesses with a small number of employees. The closest employment centers or large businesses needing many employees are located in north Fresno, about 6 miles to the south, the City of Madera about 15 miles to the west, or Valley Children's Hospital about 3 miles to the southwest. The potential impacts caused by relocating businesses are discussed in the following section of this document (Section 2.1.4.2 Relocations and Real Property Acquisition).

Alternative 2 would limit access onto or off of the proposed expressway to the Avenue 15 at-grade intersection for the Bonadelle Ranchos Number 9 community. It would also reduce traffic noise by moving the alignment east of the existing roadway. Alternative 2 would not, however, change the neighborhood, community, or community character of the Bonadelle Ranchos Number 9 subdivision because the neighborhood would retain its rural setting, and the proposed project would not divide the community.

Alternative 4 would limit access onto or off of the proposed expressway to the Avenue 15 at-grade intersection for the Bonadelle Ranchos Number 9 subdivision. This alternative would acquire the parcels sitting along the west side of the existing State Route 41 and bring traffic closer to the neighborhood, which may increase the noise level. In addition, the boundary of the subdivision would change because the businesses facing State Route

41 would be relocated in construction Phase 2, and some of these businesses may have to relocate in Rolling Hills, Fresno, or Madera. This alternative is not expected to change the overall neighborhood, community or community character because the neighborhood would retain its rural setting, and the project would not divide the community.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and mitigation measures are required.

2.1.6 Relocations and Real Property Acquisition

Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) 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 would not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. See Appendix C for a summary of the Relocation Assistance Program.

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

Affected Environment

Caltrans completed a Draft Relocation Impact Report for this project in September 2015 and an Addendum Memorandum to address the project's design exception for divided expressway and access to private driveways in July 2016.

If a full acquisition of a structure occurs, it is called a relocation. Partial acquisitions could have a potential effect on agricultural operations, residences, and businesses if the remaining land or structures would not be functional after a 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 fallow fields, agricultural lands, and isolated commercial and residential development.

The various forms of potential residential displacements include single-family residences and multi-family residences. A single-family residence includes any stand-alone, detached home, a typical accommodation for one family or one household. Multi-family residences have been separated into two categories with "multi-family residences (4 or more units)" representing

apartment buildings or condominiums and “multi-family residences (2 or 3 units)” being duplex or triplex units.

The Draft Relocation Impact Report also grouped the potential non-residential 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 non-profit organizations within the project limits.

Not fitting into the above categories is a small storage facility consisting of about 16 units. These units appear to be used as storage for businesses, and a few had active businesses in them during the field survey. At this time, it is not known how many units are actually rented solely for storage purposes.

Environmental Consequences

The proposed project would require acquisition of linear strips or small segments of land from parcels along the length of the project corridor from post mile 1.5 to post mile 7.6.

As originally designed and described in the September 2015 Draft Relocation Report, Alternative 2 had the potential to displace three residential units (two single-family residences and one mobile home with tenant occupants). The acquisition of these three residential units displaced an estimated 10 people. To avoid these displacements, a design exception was granted to allow limited access to private driveways on the divided expressway. Access to these properties would be maintained by the current design so the residences and businesses would not be acquired or displaced.

The original design of Alternative 4 as described in the September 2015 Draft Relocation Report, proposed to displace five residential units (three single-family residences and two mobile homes with tenant occupants) and two non-residential units (a fruit stand and a farm storage building) by eliminating access to the parcels. To avoid these displacements, a design exception was granted allowing limited access to private driveways from the divided expressway. Access to these properties would be maintained by the current design so the residences and farm storage unit would not be displaced (2016 Relocation Addendum).

Alternative 4 also has the potential to acquire and displace approximately 26 businesses: one construction business, three manufacturing businesses, 18 retail businesses, and four service businesses. Potential displacements or relocations would occur north of the Lateral 6.2 canal and during construction Phase 2. Table 2.7 shows the types of business relocations that would result from the project.

Table 2.7 Potential Business Relocations

Category of Business	Alternative 2	Alternative 4 & Alternative 4, Phased
Construction	0	1
Manufacturing	0	3
Retail	0	18
Government	0	0
Non-Profit	0	0
Service	0	4
Total Non-Residential	0	26

Source: Draft Relocation Impact Report, September 2015 and Addendum Memorandum, July 2016

Another potential impact to consider is displacement of personal property owned by individuals leasing space in the storage units along State Route 41; the storage units house some of the 26 commercial businesses identified for displacement by Alternative 4, Phase 2. Impacts to this storage facility would be considered a displacement, moving personal property owned by individuals leasing space in a storage unit. The storage facility has two buildings divided into about 16 units; some of these are used as office space, while others appear to be used for storing excess auto body parts or retail items; some appear to be vacant.

Avoidance, Minimization, and/or Mitigation Measures

According to the Draft Relocation Impact Report, an adequate supply of comparable commercial sites is available for relocation of affected businesses within a 15-mile radius of the project area (in Madera County and the City of Madera as well as in Fresno, Clovis, and several other rural neighborhoods). It is expected that the businesses along State Route 41 between Avenue 14 and Avenue 15 may be able to relocate within the project vicinity, either within existing commercial area in Rolling Hills or in the areas of the new developments planned for commercial or light industrial use. The ability of the businesses to rebuild and/or reestablish in the Bonadelle Ranchos Number 9 area is highly unlikely because the remaining commercially zoned parcels, on the east side of Huntington Road, are already occupied; however, the businesses could potentially relocate to the surrounding areas. At this time, potential reestablishment areas are Madera Ranchos along Avenue 12, Rolling Hills along State Route 41 south of Avenue 12, and the city of Madera.

The County of Madera and the immediate surrounding areas (Fresno, Clovis and other rural neighborhoods) have sufficient resources to absorb the project's displacement needs. If the resources of the immediate area are available, businesses usually prefer to relocate as close as possible to their existing location. Displaced employees also prefer to reside and work in the same location allowing them to remain in the same school districts and their immediate familial and cultural settings. This may be possible because of future planned housing subdivisions under construction and the current market supply of housing in southern Madera County.

Caltrans would provide relocation assistance payments 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 advisory services for assistance in the moving process, a replacement housing payment, payments for moving expenses, and assistance with closing costs on replacement housing.

Per state and federal statutes, persons affected by personal property moves from rented storage units would be eligible for moving expenses under the Caltrans Relocation Assistance Program.

2.1.7 Utilities and Emergency Services

Affected Environment

Caltrans completed a Community Impact Assessment for the project in November 2015.

Utilities

A Pacific Gas and Electric (PG&E) distribution line and two irrigation canals cross the existing State Route 41 in an east to west pattern within the project area. In addition to the distribution lines and canals, the following utilities are found within the project corridor: PG&E aerial and buried electric lines; Ponderosa Telephone Company aerial and buried telephone lines, and cable television (Comcast).

Emergency Services

State Route 41 provides the major route to the nearby foothills and the surrounding rural areas for the following service providers discussed in this section.

The California Department of Forestry and Fire Protection (CAL FIRE) provides fire protection for the rural portion of project corridor. The emergency service provider—the Madera County Fire Station Number 9 (CAL FIRE)—is

located on Avenue 11 in Rolling Hills, three blocks west of the existing State Route 41.

The Central California Emergency Medical Services Agency in Fresno dispatches ambulance services for Madera, Kings, Tulare, and Fresno counties. In Madera County, Pistoresi Ambulance and Sierra Ambulance are the main providers.

The Madera County Sheriff's Department provides law enforcement for the rural project corridor. The closest station is in the City of Madera about 15 miles away.

The California Highway Patrol has specific jurisdiction over State Route 41 and State Route 145, and all public roads in unincorporated parts of a county. While the agency's main mission is related to transportation, it also possesses full law enforcement authority and can enforce any state law anywhere in the state.

Environmental Consequences

Utilities

Before construction of the project, sponsoring developers would relocate some utilities for the housing developments planned near the project area. However, the following utilities would likely be displaced by the project or have service temporarily interrupted during construction: PG&E aerial and buried electric lines including distribution facilities; Ponderosa Telephone Company aerial and buried telephone lines; Madera Canal and the Lateral 6.2 canal (Madera Irrigation District); and cable television (Comcast). Utilities may be temporarily shut off while being moved or transferred and may require temporary construction easements and new permanent easements.

Emergency Services

During construction of the expressway, fire protection, law enforcement, emergency services, and other public services may be detoured to local roads but would be given priority access. Emergency response times are expected to improve with completion of the proposed project because the expressway would provide passing opportunities with the addition of a travel lane and wider inside and outside shoulders.

Avoidance, Minimization, and/or Mitigation Measures

Utilities

No mitigation measures are required for impacts to utilities. The following avoidance and minimization measures were initiated and would be maintained to minimize any interruption in services.

Consultation with PG&E began in spring 2015 and would be ongoing throughout the life of the project. Early discussions with other utility

companies with facilities in the project corridor would be initiated as needed and would be ongoing during the life of the project.

On June 29, 2015, Caltrans submitted an Application for Permit for Archaeological Investigations (ARPA permit) to the Bureau of Reclamation to evaluate the project's potential impacts to the Madera Canal and the Lateral 6.2 canal. On July 23, 2015, the Bureau of Reclamation issued the permit.

Consultation with the Madera Irrigation District began in May 2015 and would be ongoing throughout the life of the project.

During the design phase of the project, a more detailed study would be conducted to determine the necessary relocation of additional utilities. Caltrans would meet with the affected utilities to coordinate the details for relocations and easements to avoid or minimize any interruption in services.

Emergency Services

No mitigation measures are required for impacts to emergency services. As a standard Caltrans practice, a traffic management plan would be developed to minimize delays and maximize safety during construction. The traffic management plan could include, but is not limited to:

- Release of information through brochures and mailers, press releases, and notices from the Caltrans public information office
- Use of fixed and portable changeable message signs
- Incident management through the Construction Zone Enhancement Enforcement Program and the transportation management plan

2.1.8 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). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation 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's regulations (49 Code of Federal Regulations

Part 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

The Caltrans Office of Traffic Management completed a Draft Operational Analysis Memorandum for the project in January 2016. The area is rural except for the isolated Bonadelle Ranchos Number 9 subdivision and the subdivision's commercial business strip along the existing State Route 41. These businesses currently have direct automobile access from the existing State Route 41 and adequate parking for clientele.

Three small local roads run north and south within the Bonadelle Ranchos Number 9 subdivision: Skyview Road, Brookhill Road, and Huntington Road. All of them begin or end at Avenue 14 and Avenue 15. Avenue 14, Avenue 14½, and Avenue 15 are part of the subdivision's existing circulation system. All are controlled by stop signs on Avenue 15 and Avenue 14.

Within the project limits, only four local roads intersect with the existing State Route 41: Avenue 12, Avenue 14, Avenue 14½/Road 204, and Avenue 15.

- Avenue 12 crosses State Route 41 and extends to the east to a golf course along the San Joaquin River. This road connects Madera Ranchos, the commercial businesses within Madera Ranchos and several school facilities, including the Madera Community College Center.

- Avenue 14½ is part of the subdivision's circulation system. This local road begins at Skyview Road and ends on the west side of State Route 41. On the east side of State Route 41, Road 204 becomes a narrow paved roadway with no noticeable shoulders, and is the main access to Sumner Hill, an isolated gated community overlooking the San Joaquin River about 4 miles east of the project.

- Avenue 14 begins west of State Route 41 and passes through residential development and farmland before ending at Avenue 39½.

- Avenue 15 begins west of State Route 41, passes by Madera Ranchos and grazing/agricultural land before ending at Road 28 east of the city of Madera.

According to the draft operational analysis issued by the Caltrans Office of Traffic Operations, the intersection of State Route 41 and Avenue 12 is a four-legged intersection controlled by a traffic signal. There are northbound and southbound left-turn lanes on State Route 41. The intersection of State Route 41 and Avenue 15 is a three-legged intersection controlled by a 48-inch stop sign on Avenue 15. The traffic on State Route 41 does not stop.

Route capacity is measured in both traffic volume and quality of traffic flow. Traffic volumes are represented as vehicles per hour (vph) during peak hours. Quality of traffic flow is represented as level of service. Level of service (LOS) 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.

The existing segment of State Route 41 between Children's Boulevard and Avenue 12 is a three-lane highway (two southbound lanes, one northbound lane) and is currently operating at level of service "E" to "F" in the northbound direction and "B" in the southbound direction. State Route 41 between Avenue 12 and Avenue 15 is currently a two-lane highway operating at a level of service "E." State Route 41 from Avenue 15 to State Route 145 is currently a two-lane highway operating as a level of service "D" to "E."

Existing and future State Route 41 segments were analyzed for level of service. Table 2.8 shows the existing level of service for segments of State Route 41 between Avenue 11 and State Route 145.

Table 2.8 2018 Existing State Route 41 Level of Service

State Route 41 Segment	Direction	Highway Classification	# of Lanes	Traffic Volumes AM (PM) vph	LOS	Volume/ Capacity	Average Travel Speed	Average Time Spent Following (%)
Avenue 11 to Avenue 12	Northbound	2-Lane Highway	1	833 (1624)	E (F)	0.53 (1.04)	49.1 (43.9)	84.8 (99.1)
	Southbound	Multilane	2	1682 (1189)	B (B)	0.47 (0.34)	NA	NA
Avenue 12 to Avenue 14	Northbound	2-Lane Highway	1	459 (1056)	E (E)	0.29 (0.68)	39.2 (37.0)	73.7 (69.2)
	Southbound	2-Lane Highway	1	1081 (686)	E (E)	0.69 (0.44)	37.9 (37.5)	91.6 (78.8)
Avenue 14 to Avenue 15	Northbound	2-Lane Highway	1	443 (1045)	E (E)	0.28 (0.67)	33.6 (31.3)	64.0 (91.0)
	Southbound	2-Lane Highway	1	1053 (673)	E (E)	0.67 (0.43)	32.3 (31.7)	92.2 (77.6)
North of Avenue 15	Northbound	2-Lane Highway	1	311 (809)	D (E)	0.20 (0.52)	41.5 (39.1)	49.5 (81.6)
	Southbound	2-Lane Highway	1	777 (518)	D (E)	0.50 (0.33)	40.6 (39.5)	80.0 (67.0)

Source: Project Report, 06-MAD41-0R0400-PM 1.5/7.6

Pedestrian and Bicycle Facilities

There are no existing pedestrian facilities such as sidewalks associated with the existing State Route 41 except at Avenue 15. There is currently no designated bicycle lane or pedestrian facility (sidewalks) on the existing State Route 41. The freeway segment of State Route 41 south of Avenue 12 does not allow bicyclists. Although bicyclists are allowed on the two-lane highway north of Avenue 12, the shoulders narrow in some areas.

Public Transportation

No public transportation is provided to the segment of State Route 41 north of Avenue 12. However, one of the routes of the Madera County Connection transit system, which includes a stop at Valley Children's Hospital on Avenue 10, uses the freeway and transition segment of State Route 41 before turning west on Avenue 12. Local taxi services and local car rental agencies also use State Route 41 to transport passengers to the Fresno Metropolitan area south of the project corridor.

Environmental Consequences

Traffic and Transportation

For both Build Alternatives, direct access for motor vehicles would be made available directly from State Route 41 to farms and residences south of the Lateral 6.2 canal. However, access would be restricted to right-in turns and right-out turns, which would require residents on the east side of the divided expressway north of Avenue 12 to make a U-turn at Avenue 15 to travel south, and residents on the west side of the divided expressway north of Avenue 12 to make a U-turn at Avenue 12 to travel north. This access control would also affect the residents of Sumner Hill at the end of Road 204.

Alternative 2 would turn the existing State Route 41 between Avenue 14 and Avenue 15 into a frontage road, which would provide access to the commercial businesses in the Bonadelle Ranchos Number 9 subdivision via Avenue 15 (see Figure 1-5, Alternative 2). The existing parking lots and driveways would not change. During the design phase of the project, pedestrian facilities, such as sidewalks, would be considered.

Alternative 4 would acquire the commercial businesses along the existing State Route 41 in the Bonadelle Ranchos Number 9 subdivision. This action would occur during Phase 2 of construction and would remove all commercial businesses and their parking lots, leaving only the residential and commercial properties on Huntington Road to the west. For these remaining property parcels, no changes would occur. During the design phase of the project, pedestrian facilities, such as sidewalks, would be considered.

The intersections at Avenue 12, Avenue 14, Avenue 14½, and Avenue 15 were analyzed for 2023, 2037, and 2057 traffic conditions with the proposed expressway. Table 2.9 shows the level of service at the intersections after

Phase 1, and Table 2.10 shows the level of service at the intersections after Phase 2

Table 2.9 Intersection Level of Service with the Project, Phase 1

Intersections	Intersection Traffic Control	2018 (Existing)			2023 (Phase 1 Construction Completion)		2037 (Phase 1 Design Year)	
		# of Legs	Traffic Volumes AM (PM) vph	LOS AM (PM)	Traffic Volumes AM (PM) vph	LOS AM (PM)	Traffic Volumes AM (PM) vph	LOS AM (PM)
SR41/Ave 15	Signal	4 Legs	1505 (1760)	C (D)	3740 (4208)	D (C)	7460 (8939)	F (F)
SR 41/Ave 14$^1/_2$ (W)/Rd 204 (E)	Two-Way Stop	4 Legs	1522 (1736)		2939 (3371)	B (C)	5450 (6476)	E (F)
SR41/Ave 12	Two-Way Stop	3 Legs	1541 (1747)		2945 (3362)	C (C)	5433 (6427)	F (F)
SR41/Ave 12	Signal	4 Legs	2599 (2921)	E (F)	5741 (6305)	F (F)	11403 (12250)	F(F)

Table 2.10 Intersection Level of Service with the Project, Phase 2

Intersections	Inter-section Traffic Control	2037 (Phase 2 Construction Completion)			2057 (Phase 2 Design Year)	
		# of Legs	Traffic Volumes AM (PM) vph	LOS AM (PM)	Traffic Volumes AM (PM) vph	LOS AM (PM)
SR41/Ave 15	Signal	4 Legs	7810 (9319)	F (F)	12776 (15699)	F (F)
Ave 14$^1/_2$ (W) Road 204 (E)	Cul-de-sac					
Ave 14	Cul-de-sac					
SR41/Ave 12	Signal	4 Legs	11405 (12442)	F (F)	19376 (20736)	F (F)

The project would provide additional lanes to relieve congestion and limit driveways to eliminate the conflict between slower traffic and commuters. Table 2.11 shows the future level of service for the segments of State Route 41 between Avenue 11 and State Route 145 after construction of Phase 1. Table 2.12 shows the future level of service for the segments of State Route 41 between Avenue 11 and State Route 145 after construction of Phase 2.

Table 2.11 Segment Level of Service with the Project, Phase 1

SEGMENT Route 41	Direction	2018 (Existing)		2023 Phase 1 (Construction Completion)		2037 Phase 1 (Design Year)	
		Number of Lanes	LOS AM (PM)	Number of Lanes	LOS AM (PM)	Number of Lanes	LOS AM (PM)
Ave 10$^1/_2$ to Ave 12	Northbound	1	E (F)	2	B (D)	2	D (F)
	Southbound	2	B (B)	2	D (C)	2	F (E)
Ave 12 to Ave 14	Northbound	1	E (E)	2	B (C)	2	C (F)
	Southbound	1	E (E)	2	C (B)	2	E (D)
Ave 14 to Ave 15	Northbound	1	E (E)	2	A (C)	2	C (F)
	Southbound	1	E (E)	2	C (B)	2	E (D)
North of Ave 15	Northbound	1	D (E)	1	E (E)	1	F (F)
	Southbound	1	D (E)	1	E (E)	1	F (F)

Source: Project Report, 06-MAD41-0R0400-PM 1.5/7.6

Table 2.12 Segment Level of Service with the Project, Phase 2

SEGMENT Route 41	Direction	2037 Phase 2 (Construction Completion)		2057 Phase 2 (Design Year)	
		Number of Lanes	LOS AM (PM)	Number of Lanes	LOS AM (PM)
Ave 10$^1/_2$ to Ave 12	Northbound	2	D (F)	2	F (F)
	Southbound	2	F (E)	2	F (F)
Ave 12 to Ave 15	Northbound	2	C (E)	2	E (F)
	Southbound	2	D (D)	2	F (F)
North of Ave 15	Northbound	1	F (F)	1	F (F)
	Southbound	1	F (F)	1	F (F)

Source: Project Report, 06-MAD41-0R0400-PM 1.5/7.6

Although both Build Alternatives would alter traffic circulation by reducing direct access to Avenue 15 or by directing traffic onto the frontage road, the controlled access is expected to improve safety and is not expected to result in an increase or decrease in traffic on local streets, result in more indirect routing for emergency vehicles, or result in changes to popular bicycle or pedestrian routes. In addition, drivers would benefit from wider shoulders because there would be a larger recovery (correction) zone next to the roadway.

Based on the projected traffic, the analysis showed that a 6-lane freeway and an 8-lane freeway would be needed on State Route 41 south of Avenue 12 prior to the year 2037, a 6-lane freeway or expressway would be needed from

Avenue 12 to Avenue 15 between 2037 and 2057, and a 4-lane expressway between Avenue 15 and Route 145 would be needed prior to 2037.

Pedestrian and Bicycle Facilities

Caltrans Transportation Planning recommends a Class III Bikeway or Bike Route for the project. Class III bikeway or bike routes designate preferred routes through high demand corridors with posted signs designating a bike route. The County of Madera Regional Transportation Program plans for a Class III Bike Route on State Route 41 north of Avenue 12.

The project would include a Class III Bike Route, which would go through intersections with a 6-foot lane adjacent to the right-turn lane. Between Avenue 12 and Avenue 15, bicyclists would use the outside 10-foot shoulder of the expressway. South of Avenue 12, bicyclists would have to use the frontage road to get to their local destinations.

Under Title II of the Americans with Disabilities Act (ADA), all federal-aid projects must provide curb ramps at pedestrian crossings to allow safe wheelchair access. As part of the Complete Street requirements, all Americans with Disabilities Act ramps at intersections with local roads would comply with the latest standards. The intersection design and the proposed sidewalks along Avenue 12 and Avenue 15, including the curb ramps, would meet the requirements of the Americans with Disabilities Act.

Public Transportation

Neither Build Alternative would reduce transit service or eliminate access to any existing transit stops.

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 delay, congestion, and the likelihood of accidents. The Traffic Management Plan includes notifying the public of construction activities via changeable message signs, construction strategies, and the Caltrans District 6 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 mitigation measures are required for impacts to pedestrian and bicycle facilities.

A Class III Bikeway or Bike Route could be incorporated into the expressway and would be considered during the design phase of the project.

Public Transportation

No avoidance, minimization, and mitigation measures are required.

2.1.9 **Visual/Aesthetics**

Regulatory Setting

The National Environmental Policy Act 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 National Environmental Policy Act (23 U.S. Code 109[h]) directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act 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]).

Affected Environment

Caltrans prepared a Visual Impact Assessment in September 2015 to assess the potential visual effects of the proposed project. Revisions were made to the Visual Impact Assessment in March 2016 to incorporate changes to the project description. The Visual Impact Assessment was carried out under the direction of a Licensed Landscape Architect guided by a process developed by the Federal Highway Administration and outlined in the publication "Visual Impact Assessment for Highway Projects, March 1981."

The project limits are within flat to rolling terrain in a land use setting of agriculture, grazing land, and open space. At the southern end of the project, near Avenue 11, there are scattered light industrial, commercial, and residential uses on the west side of the existing State Route 41. The light industrial uses consist of large metal structures, including recreational vehicle and boat storage and automotive performance businesses with numerous vehicles in various states of repair visible from the right-of-way. South of Avenue 14, on the west side of existing State Route 41, is a grove of eucalyptus trees. Between Avenue 14 and Avenue 15, on the west side of existing State Route 41, is a string of commercial developments, mostly automotive-related sales and storage. The existing visual quality on the west side of existing State Route 41 at Avenue 11 and between Avenue 14 and Avenue 15 is considered moderate, but the east side of existing State Route 41 does not have any development. Overhead utility lines are visible along most of the project limits, mostly on the west side of the highway. Although overhead utility lines exist and high tension utility towers are visible north of Avenue 12 from the Avenue 11 undercrossing (post mile 1.3) to the end of the

project limits, the visual quality is considered good, with a single uniform landscape type—Valley Agricultural.

Landscape types are relatively uniform combinations of landform and land cover that recur throughout the region. The regional landscape type is well known for its abundant agricultural production of field crops and orchards typical of the San Joaquin Valley.

The existing State Route 41 creates a strong line in the landscape. This line is accentuated in its continuity and long views of the relatively straight route through flat and rolling terrain.

Visual impacts caused by a highway project are seen both by people traveling on the road and by neighbors next to it. Because the existing facility is at ground level, it is minimally visible from a distance, and the views from the road and of the road are fairly consistent throughout the project length.

The existing State Route 41 provides the highway traveler expansive unobstructed views across the Central Valley—from the Coast Ranges to the west, and foothills of the Sierra Nevada Mountains to the east—of vineyards, orchards, other crop areas, and open fields. Within the project limits, State Route 41 is not listed in the California Streets and Highways Code (Section 263 – Scenic Highway System) and is therefore not an Eligible or an Officially Designated Scenic Highway. However, north of the project limits, and within Madera County, the route is included in the Scenic Highway System.

Environmental Consequences

The additional lanes of the proposed expressway require construction of a facility that is mostly above grade, except at the intersections at Avenue 12 and Avenue 15, which would be at-grade with the new expressway. The project also includes construction of five structures or crossings: a new bridge over Avenue 11 and two new crossings at the Madera Canal and at the Lateral 6.2 canal. The visual impacts resulting from the construction of the expressway facility are discussed separately from the visual impacts of the proposed crossings.

Proposed visual changes in the horizontal alignment resulting from the additional travel lanes or expressway would not differ considerably depending on whether the preferred alternative selected is Alternative 2 or Alternative 4. Both Build Alternatives have a raised profile to allow for proposed culverts that would span under the expressway to function properly. If the profile is not raised, there is an increased possibility that the expressway could be flooded during storms. Therefore, the profile has been raised an average of 3 to 5 feet. (A raised profile means the roadway would be raised above the existing ground level.) The proposed profile of the roadway may be as high as 6 feet above ground level to prevent flooding in various areas of the project limits except at Avenue 12 and Avenue 15, which would be at grade (ground level).

Because both Build Alternatives would be above grade (raised), the changes to the roadway are expected to be visually noticeable to all users as a contrast to the existing at-grade straight highway. Viewers of the facility are those who see the expressway from a distance and those who work or shop at the commercial businesses on the east side of Avenue 11 and between Avenues 14 and 15. Residents in the area would be the main viewers of the new above grade facility. Local residents and employees of the local businesses would be sensitive to the height of the raised roadway and would notice that the eastern horizon line has changed and that their view has been obstructed by the new expressway.

Because users of the new roadway would travel at a higher elevation, however, they may be able to see farther and would experience improved vistas.

Both Build Alternatives propose crossing the Madera Canal and the Lateral 6.2 canal by installing box culverts. During the Plans, Specifications, and Estimates phase of the project, a detailed hydrology and geological study would be completed and a decision, in consultation with the U.S. Bureau of Reclamation and the Madera Irrigation District, can be made on the type of structures to be used.

At Avenue 11, construction of an additional bridge for southbound traffic to the west of the existing bridge would cause a greater visual impact because it differs from the existing roadway. The engineered concrete above grade structures would obstruct views and would create a more urbanized look within the existing rural environment. Construction of the proposed structures would result in a less than significant visual impact.

Fencing and lighting of construction and staging areas would be visually noticeable to viewers for the duration of the project. Nighttime construction activities would involve the use of lighting equipment, which could cause glare, potentially affecting residents in the immediate vicinity. These changes in the visual environment are considered temporary.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are recommended to preserve the visual quality of the site and its surroundings in this segment of State Route 41:

- To comply with the Highway Design Manual and the Project Planning and Design Guide (PPDG 2010), Section 3 Design Program Responsibility - Landscape Architecture, if a slope design is steeper than a 4:1 ratio (h:v), the District Landscape Architect would prepare or approve an erosion control plan. If the slopes are 2:l (h:v) or steeper, Geotechnical Services would prepare a Geotechnical Design Report and the District Landscape Architect should prepare or approve an

erosion control plan. The District Landscape Architect should be involved early in the design phase to help make the determination on slope design. The Professional Engineer (PE) in collaboration with the District Landscape Architect would need to provide justification as to why the slopes cannot meet the 4:1 (h:v) or flatter slope design.

- Materials and planting compositions should be regionally appropriate and visually compatible with local indigenous plant communities or surrounding landscape planting. Plantings should be designed according to the perspective of the viewer.
- Contour grading and planting with consideration for the safety of maintenance workers and the public.
- Maximum recommended slopes for this project are 1:2 with transitions to 1:4 side slopes as soon as possible. The newly constructed slopes would be designed to aesthetically blend with the surrounding landscape, and be adequate for planting of trees, native shrubs, and grasses.
- Any new right-of-way fencing should keep with the existing rural fence. However, highway facility type (i.e., freeway or expressway) and adjacent zoning/land use would also factor into the type of fence that is selected.
- Any walls would be designed with aesthetic treatments to match treatments on other structures.
- If night construction is necessary, light spillage from portable sources would be minimized. At a minimum, the construction contractor would be required to minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights would be used. Portable lights would be operated at the lowest allowable wattage and height, and would be raised to a height no greater than 20 feet. All lights would be screened and directed downward toward work activities and away from the night sky, highway users and highway neighbors, to the maximum extent possible. The number of nighttime lights used would be minimized to the greatest extent possible.
- Minimization for visual impacts would be required for the new southbound bridge undercrossing at Avenue 11. Aesthetic enhancements could include: texture on the slope paving under the bridge abutments, texture on the bridge slope, contrasting surface treatment, and any retaining walls would be designed with aesthetic treatments to match treatments on other structures.

- Aesthetic treatments would enhance the positive visual effects of the project, generate public acceptance of the project, and would lessen any perceived adverse visual effects. However, the view would remain blocked by the new bridge.

2.1.10 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. 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 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 such 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, 2004, a Section 106 Programmatic Agreement between the Advisory Council, the Federal Highway Administration, State Historic Preservation Officer, and Caltrans went into effect for Caltrans' projects, both state and local, with the Federal Highway Administration's involvement. The Programmatic Agreement implements the Advisory Council'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).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix A for specific information about Section 4(f).

Historical resources are considered under the California Environmental Quality Act, as well as the California Public Resources Code Section 5024.1, which established the California Register of Historical Resources. The Public Resources Code Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

Affected Environment

Caltrans completed a Historic Property Survey Report (HPSR) for the project in December 2015 and a Finding of No Adverse Effect (FNAE) in May 2019. The Historic Property Survey Report summarized the Historical Resources Evaluation Report (HRER) and an Archaeological Survey Report (ASR) completed for the project.

The Archaeological Survey Report extended to the intersection of State Route 41 and State Route 145 (post mile 9.25), which is north of the proposed project. However, access to property along the east side State Route 41 north of the Madera Canal to State Route 145 was denied by the property owner.

Archaeology

The archaeological study area for the project is within the transition zone between the San Joaquin Valley to the west and the lower Sierra Nevada foothills to the east. Caltrans archaeologists walked the survey area, examined the documented ethnographic sites within or near the project corridor, and performed a non-invasive (no excavation) geo-archaeological investigation.

The geo-archaeological investigations included sensitivity modeling and extensive ground truthing (information provided by direct observation as opposed to inference) within the project area of potential effect. The investigations revealed that ancient and relict landforms make up a large proportion of the study area, and an expansive beveled pediment is capped by old fan deposits laid down prior to the Pleistocene (epoch) mountain-front entrenchment of the San Joaquin River. These types of landforms are unlikely to contain buried archaeological deposits.

No new prehistoric or historic-era archaeological resources were discovered within the area of potential effects (APE). However, as a result of the studies conducted for the project, mapping was updated to verify the locations of three previously recorded prehistoric archaeological sites and three historic sites within the Archaeological Survey Coverage Area, which covers a broader area than the Area of Potential Effects. In addition, two site records were updated during the 2015 inventory to include more precise graphic and location data. No new prehistoric or historic-era archaeological resources were recorded in the Archaeological Survey Coverage Area during the 2014/2015 inventory.

Architectural Resources

One historic-era property, the Madera Canal, was identified within the architectural area of potential effects. A Caltrans architectural historian evaluated the Madera Canal and its two associated features, the Lateral 6.2. Canal and Bridge Number 41-0030, for eligibility to the National Register of Historic Places. The Madera Canal is a component of the Central Valley Project (CVP) that runs from Friant Dam into Madera County, a distance of

about 36 miles. State Route 41 crosses the Madera Canal, sometimes called the Friant-Madera Canal, north of Avenue 15. The canal was designed and constructed between 1940 and 1944 as a bulk conveyance system to distribute irrigation water to individual farmers through a system of primary and secondary laterals.

The Lateral 6.2 canal is one of three primary lateral turnouts (6.2, 24.2, and 32.2) off the Madera Canal. The unlined canal is about 16 miles long with water being conveyed in a southwesterly direction mainly through agricultural lands and intersects with State Route 41 south of Avenue 14 (post mile 4.0). Both the Madera Canal and Lateral 6.2 canal are maintained by the Madera Irrigation District but are under the jurisdiction of the U.S. Bureau of Reclamation.

The portions of the Madera Canal and its contributor, the Lateral 6.2 canal, within the architectural area of potential effects were determined eligible for the National Register under Criterion A as a contributor/character-defining feature of the Central Valley Project and its role in the development of agriculture in the San Joaquin Valley after 1940.

Bridge Number 41-0030 is located on State Route 41 north of Avenue 15 and was evaluated in 2002 (Hobbs) as part of a separate highway project. The bridge was determined to be eligible to the National Register of Historic Places as a contributor to the Madera Canal and the Central Valley Project under Criteria A and C. However, the original materials (wood post and beam railing) were replaced with non-similar materials (non-perforated concrete railing), which was considered an adverse impact. A Caltrans architectural historian reevaluated Bridge Number 41-0030 after the 2002 modifications and determined that Bridge Number 41-0030 is no longer eligible individually or as a contributor under any applicable criterion due to change in the original materials and loss of historical integrity.

Environmental Consequences

Cultural Resources/Archaeology

No archaeological resources were identified within the area of potential effects. However, additional surveys would be required if project plans are changed to include areas that have not been previously surveyed, including the parcels where access was denied. Expansion of the area of potential effects for construction easements or utility relocation could result in supplemental studies.

If cultural materials or remains are encountered during construction, it is the policy of Caltrans that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the discovery.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities must cease in any area

or nearby area suspected to overlie remains, and the County Coroner contacted. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that the remains are those of a Native American, the coroner must contact the Native American Heritage Commission within 24 hours. Pursuant to Public Resources Code Section 5097.98, the Native American Heritage Commission would then identify a Most Likely Descendent. The District 6 Environmental Branch would be informed of the discovery immediately by personnel responsible for the exposure. The Native American Heritage Commission would facilitate discussions with the property owner, Caltrans, and the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Architectural Resources

Both Build Alternatives cannot avoid the historic property, the Madera Canal and its contributor, the Lateral 6.2 canal, because both canals flow in a westerly direction diagonally across the project corridor and intersect with State Route 41. However, construction activities at the Madera Canal will not occur until the construction of Phase 2.

Caltrans initiated consultation with the State Office of Historic Preservation by sending the Historic Property Survey Report and supporting technical studies with the Determination of Eligibility. The State Historic Preservation Officer concurred with Caltrans' Determinations of Eligibility on March 1, 2016 (see Appendix N).

Both Build Alternatives would cross the canals by installing box culverts. The Caltrans architectural historian has made a preliminary determination that both locations would have a "no adverse effect" on the integrity of the historic structure because the proposed crossings would not diminish the integrity of the structure as a contributor/character-defining feature of the Central Valley Project and would not change the canals' function as a bulk conveyance system distributing irrigation water to farmers.

In addition, project impacts to the canal would not significantly alter any character-defining features that qualify the property for inclusion in the National Register of Historic Places in a way that would diminish its integrity.

A Finding of No Adverse Effect Without Standard Conditions was prepared prior to the completion of the final environmental document. (Appendix O) Caltrans received concurrence with the Finding of No Adverse Effect from the State Historic Preservation Officer on July 10, 2019 (see Appendix Q).

Avoidance, Minimization, and/or Mitigation Measures

Cultural Resources/Archaeology/Architectural Resources

Caltrans consulted with the State Office of Historic Preservation regarding the Finding of Effect before the final environmental document. Concurrence for a Finding of No Adverse Effect Without Standard Conditions was obtained from the State Historic Preservation Officer (SHPO) on July 10, 2019. A Caltrans Principal Architectural Historian will review construction plans at 60 percent and 95 percent constructability and monitor construction activities at Madera Canal Lateral 6.2. Consultation with Native Americans and notifications of the project updates, revisions, and changes to the project are ongoing and would continue throughout the life of the proposed project.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water 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[1] ([1] *A point source is any discrete conveyance such as a pipe or a human-made ditch*) unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. 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 storm water 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 would 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. The Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water 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 Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard 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 (U.S. EPA Code of Federal Regulations 40 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 that 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[2] *([2] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall")* standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the 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., like groundwater and surface waters not considered waters of the U.S. Also, 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 Board Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the 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 Water 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/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. The 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 (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems. A Municipal Separate Storm Sewer System is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The State Water Resources Control Board has identified Caltrans as an owner/operator of a Municipal Separate Storm Sewer System under federal regulations. Caltrans' Municipal Separate Storm Sewer Systems permit covers all Caltrans 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 five years, and permit requirements remain active until a new permit has been adopted.

The Caltrans' Municipal Separate Storm Sewer Systems Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below).

2. Caltrans must implement a year-round program in all parts of the state to effectively control storm water and non-storm water discharges.

3. Caltrans' storm water discharges must meet water quality standards through 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, Caltrans developed the Statewide Storm Water Management Plan to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Storm Water Management Plan assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Storm Water Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water 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 Storm Water Management Plan to address storm water runoff.

Construction General Permit

The Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2 and 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 storm water runoff pH and turbidity (water cloudiness) 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 Storm Water Pollution Prevention Plan. In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan is necessary for projects with a Disturbed Soil Area less than one 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 would be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are the Clean Water Act Section 404 permits 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 benefiting water quality. Water 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 in January 7, 2016.

The project site lies within the San Joaquin Valley Floor/Berenda Creek Hydraulic Unit (545.30) and the Ahwahnee/Daulton Hydrologic Unit (539.20). The San Joaquin River runs about 2 miles south of the project limits, and Little Dry Creek and its tributaries are north of the project limits.

The main hydrologic features of the project study area are the Madera Canal (also known as the Friant-Madera Canal) that crosses the north portion of the study area and the Lateral 6.2 canal (also known as the Madera Lateral 6.2), which diverts from the Madera Canal south of Avenue 15, then extends southwest.

There are no 303(d) receiving water bodies within the project limits. The term “303(d) list” refers to the list of impaired and threatened waters, 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.

To comply with the requirements of the Construction General Permit (see Regulatory Setting), the project area risk level was determined as Risk Level 1, the lowest risk, for erosion and transporting sediment to receiving waters. The project soil erosion risk level was determined using the Individual Method—U.S. Environmental Protection Agency Rainfall Erosion Calculator and Individual Data per Caltrans Project Risk Level Determination Guidance, July 2010.

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

No total maximum daily loads (TMDLs) have been identified with any water bodies in the area. Total maximum daily loads is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

In addition, there are no known existing Treatment Best Management Practices (BMPs) within the project limits. The proposed project is located in a rural area and does not lie within an urban municipal separate storm sewer system (MS4) area.

Environmental Consequences

Alternative 2 proposes four detention basins, and Alternative 4 proposes five detention basins to accommodate storm water runoff generated by the newly constructed impervious surfaces added by the project.

The total Disturbed Soil Area was calculated by totaling the area of disturbed soil from the proposed right-of-way line to proposed right-of-way line, including those areas proposed for local road improvements and water detention basins. The total Disturbed Soil Area for Alternative 2 is approximately 370 acres, and the total Disturbed Soil Area for Alternative 4 is approximately 285 acres.

The existing impervious (solid) surface area is 40 acres. Alternative 2 would have a net new impervious surface area of 65 acres, and Alternative 4 would have a net new impervious surface area of 55 acres.

Dewatering and active treatment systems (ATS) are not anticipated because groundwater would not be affected by the project.

Construction

The project would not result in a substantial increase in sediment runoff. The proposed project would capture and detain storm water runoff within the Caltrans right-of-way; therefore, the project would not result in sediment loading to any receiving waters. No temporary detention basins are proposed. The use of the Best Management Practices included in the required Storm Water Pollution Prevention Plan (SWPPP) prevents any potentially significant short-term impacts during construction. A Storm Water Pollution Prevention Plan is required by the Regional Water Quality Control Board because more than one acre of land would be disturbed. The plan would incorporate applicable Temporary Construction Site Best Management Practices within the project limits, and would be developed by the contractor and submitted to the Caltrans Resident Engineer for review and acceptance before construction begins.

In general, construction activities have the potential to contribute sediment and silt associated with soil disturbance, and chemical pollutants associated with the construction materials that are brought onto the project site. Soil disturbance activities include earth-moving activities, such as excavation and trenching, soil compaction and moving, cut and fill activities, and grading. Disturbed soils are susceptible to high rates of erosion from wind and rain, resulting in sediment transport via storm water runoff from the project area. Chemical contaminants, such as oils, fuels, paints, solvents, nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported to downstream drainages and ultimately into collecting waterways contributing to the chemical degradation of water quality. Some pollutants can create turbidity in water bodies, which blocks light transmission and penetration,

reduces oxygen levels, affects the food chain, and creates change in water temperature.

Construction materials, waste handling, and the use of construction equipment could also result in storm water contamination. For example, although not part of the planned project, spills or leaks from heavy equipment and machinery can result in oil and grease contamination. The removal of waste materials during construction could also result in tracking of dust and debris. Staging areas can also be sources of pollutants because of the use of paints, solvents, cleaning agents, and metals during construction. Pesticide use, including herbicides, fungicides, and rodenticides, associated with site preparation is another potential source of storm water contamination. Larger pollutants, such as trash, debris, and organic matter could also be associated with construction activities. As such, the discharge of storm water may cause or threaten to cause violations of water quality objectives. These pollutants would occur in both storm water discharges and non-storm water discharges.

The following temporary Construction Site Best Management Practices would be incorporated into the project as part of the Storm Water Pollution Prevention Plan and would prevent any potentially significant short-term impact:

- 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 prior to any clearing or grading activities.

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

- A site-specific spill prevention plan shall be implemented for potential hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed 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.

After Construction

Long-term water quality impacts are expected as a result of the project due to the increased area of impervious surface. Detention basins are used to treat the storm water runoff from the roadway (impervious surface) after the construction is complete. Four and five detention basins are proposed for Alternatives 2 and 4, respectively. The drainage basins would be designed with sufficient capacity to detain two 10-year/24-hour storm events. Detention basins can be used to reduce peak storm runoff flow rates for drainage areas. The storage of storm water can reduce the frequency and extent of downstream flooding, soil erosion, and sedimentation. Detention basins can remove litter, settable solids, total suspended solids, particulate metals, and absorbed pollutants such as heavy metals, oil, and grease by capturing, temporarily detaining, and gradually releasing storm water runoff. Measures for avoiding or reducing potential storm water impacts would depend on which Build Alternative is chosen. The location of basins requires strategic planning due to the rolling terrain and the type of highway facility that is being proposed. Preliminary locations have been determined but may be revised after further design considerations.

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 Storm Water Pollution Prevention Plan. Those Best Management Practices during construction 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 prior to any clearing or grading activities.

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

- A site-specific spill prevention plan shall be implemented for potential hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed 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.

After Construction

All disturbed areas would be restored to preconstruction 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:

- 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.

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

- 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.

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

Affected Environment

Caltrans completed a Paleontological Identification Report (PIR) for the project in April 2015 and a Paleontological Evaluation Report (PER)/Preliminary Paleontological Mitigation Plan (PPMP) in November 2015. Based on the two reports, it was determined that paleontological resources were present throughout the length of the project limits that would potentially be affected by the project. Scientifically important paleontological resources have been discovered in Madera County and salvaged from the same type of geologic formations that underlie the project location. These paleontologically sensitive formations are widespread and found throughout the Central San Joaquin Valley, including Madera County.

Madera County is in the San Joaquin Valley, which is bounded by the low mountains of the Coast Ranges to the west, the San Emigdio and Tehachapi ranges to the south, and the foothills of the Sierra Nevada Mountains to the east. The county sits within the Great Valley geomorphic province of California, which is a flat to gently sloping alluvial plain that is about 50 to 60 miles wide and 400 miles long in the central part of California.

Much of the fluvial and alluvial continental deposits present through the San Joaquin Valley at the near surface and surface in the eastern side of the valley are of Pleistocene age. Within the project area, the geology is mapped as the Modesto, Riverbank, Turlock Lake, and North Merced Gravel unit of the Merced Formation, along with the Miocene Mehrten and Auberry Formations, and the Eocene Ione Formation. While no fossils from these formations have been catalogued within 1.5 miles of the project, a diverse array of late Irvintonian-age vertebrate fauna (wildlife) was discovered in the Turlock Lake Formation north of the City of Madera.

In nearby Merced County, the Modesto Formation has also produced numerous scientifically important vertebrate fossils. Together, these formations have provided valuable information related to stratigraphic correlation, relative geologic age determination, plant and animal diversity, and paleoclimatology. Fossils recovered from these formations include: Columbian mammoth, horse, camel, dire wolf, ground sloth, sabre tooth cat, bison, llama, rabbit, squirrel, kangaroo rat, pocket gopher, goose, quail, snake, and numerous additional specimens.

In Fresno County, the Riverbank Formation has produced fossils of horse. In Sacramento County, the Riverbank Formation has produced fossils of Harlans' ground sloth, dire wolf, coyote, Columbian mammoth, yesterday's

camel, ancient bison, antelope, deer, rabbit, pocket gopher, woodrat, squirrel, broad-footed mole, garter snake, and Sacramento blackfish.

In Stanislaus and Tuolumne counties, the Mehrten Formation has produced numerous vertebrate fossils including ground sloth, horse, rhinoceros, mastodon, camel, peccary, pronghorn, deer, dog, cat mustelids and raccoon, hare, and rodent. To date, no vertebrate fossils have been discovered in the Auberry and Ione Formations, as well as the North Merced Gravel unit of the Merced Formation.

Based on Caltrans guidelines, the Turlock Lake and Modesto Formations have been assigned a “High Potential (High Sensitivity)” to contain paleontological resources of scientific importance and ranked as “Moderate” in the Potential Fossil Yield Classification System (PFYC 3a). Although the Mehrten and Riverbank Formations have yielded vertebrate fossils in other geographic areas, typically classifying them as “High Potential” in the Caltrans tripartite scale, the formations within the project limits were classified as “Low Potential” because they had coarse-grained and gravelly textures that indicate high energy depositional environments that do not favor fossil preservation. The Auberry and Ione Formations and the North Merced Gravel unit of the Merced Formation were all assigned a “Low Potential” to contain paleontological resources on the Caltrans tripartite scale.

The Madera Canal and the Lateral 6.2 canal are owned by the U.S. Bureau of Reclamation. The project would construct new crossing structures (box culverts) and would be subject to 16 U.S. Code 431-433 (the “Antiquities Act”). In addition, although the project is currently locally funded, the project may receive federal funding in the future, making the project subject to 23 U.S. Code 1.9(a). During construction, if paleontological resources are discovered, the project would be subject to 23 U.S. Code 305.

Environmental Consequences

Both Alternative 2 and Alternative 4 would have an effect on the Turlock Lake and Modesto Formations, which underlie both Build Alternatives. Alternative 2 would acquire 278 acres for the project, which includes 71 acres of excavation for four water detention basins. Alternative 4 would acquire 262 acres for the project, which includes 88 acres of excavation for five water detention basins. All ground disturbance during general construction excavation activities and excavation associated with drainage conveyance and storm water detention/retention basins in the high-sensitivity Modesto and Turlock Lake Formations have the potential to affect fossils.

The No-Build Alternative would not result in construction of any of the proposed improvements and, therefore, would not directly or indirectly affect the Turlock Lake or Modesto Formation.

Avoidance, Minimization, and/or Mitigation Measures

The following mitigation measures are recommended to minimize potential impacts of the project:

- All open excavations more than 5 feet deep in native sediments of the Modesto and Turlock Lake Formations should be monitored full-time by a qualified paleontologist.
- During grading, sand interbeds within the Riverbank Formation should be monitored part-time by a qualified paleontologist. Sand interbeds are the sand layers interspersed among layers of other soil material, like silt or clay.
- During grading, the gravels of the Riverbank Formation, North Merced Gravel unit of the Merced Formation, Mehrten, Auberry, and Ione Formations should be spot checked by a qualified paleontologist.
- During grading, full-time monitoring of the Mehrten and Riverbank Formations may be required as determined by the Principal Paleontologist depending on conditions encountered.
- The Principal Paleontologist would meet the qualifications outlined under preparer qualifications in the Caltrans Standard Environmental Reference, Volume 1, Chapter 8, and would be responsible to implement the mitigation plan and maintain professional standards of work.
- All project personnel shall receive training by a qualified paleontologist before the start of work.
- Recovered fossils would be prepared to the point of identification and placed in an approved paleontological repository.

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 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 of 1992
- 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 ground 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 material are vital if hazardous material is found, disturbed, or generated during project construction.

Affected Environment

Caltrans completed an Initial Site Assessment for the project in August 2015, which included a site visit on August 4, 2015, as well as a review of regulatory databases. Caltrans completed an Initial Site Assessment-Project Description Change for the project in December 2015 to extend the study area south of Avenue 12 (post mile 1.5).

The database review resulted in identifying three existing and permitted gas stations within the project limits (post miles 1.5 to 7.6). Two gas stations—the AM/PM and the 41 Gas, Food, and Liquor—are in the Rolling Hills

subdivision, south of Avenue 11 on the frontage road west of the State Route 41 freeway. The 41 Gas, Food, and Liquor has had reported releases discovered during two separate tank removals. The cases were closed by the regulatory agencies in October 1987 and in October 2014. There have been no reported leaks, releases, or spills for the AM/PM. One gas station—a Chevron station—is within the Bonadelle Ranchos Number 9 subdivision at the southwest corner of State Route 41 and Avenue 15. No reports of leaks, releases, or spills are on file for this site.

The August 2015 site visit revealed several other businesses within the project limits, including an auto, boat, and recreation vehicles (RV) sales business, auto repair, and more.

Some of these businesses may also handle some hazardous materials/waste in small to medium quantities.

An aerially deposited lead study performed in 2001 for State Route 41 between Avenue 12 and State Route 145 (post miles 3.1 and 9.3) indicated lead was present. Total lead results ranged from 30 milligrams per kilogram to 202 milligrams per kilogram with an average of 21.25 milligrams per kilogram. Soluble lead levels ranged from 0.069 milligrams per liter to 6.5 milligrams per liter with an average of 3.53 milligrams per liter, less than the Soluble Threshold Limit Concentration of 5 milligrams per liter.

Lead levels for the remaining portion (post miles 1.5 to 3.1) would likely have similar results. High levels of lead have also been found in white and yellow striping/paint/pavement markings.

Environmental Consequences

Alternative 2 would not have a direct effect on the three permitted gas stations within the project limits. Alternative 2 would not acquire right-of-way from the AM/PM and the 41 Gas, Food, and Liquor south of Avenue 11 because the existing State Route 41 alignment would be used for the Alternative 2 alignment in this area. This alternative would not acquire right-of way from the Chevron gas station at Avenue 15 because the alignment of State Route 41 would be moved to the east in this area and away from the Chevron gas station.

Alternative 4 would not have a direct effect on the two gas stations south of Avenue 11 within the project limits. Alternative 4 would not acquire right-of-way from the AM/PM and the 41 Gas, Food, and Liquor because the existing State Route 41 alignment would be used for the Alternative 4 alignment in this area.

Alternative 4 (Phase 2) would require full acquisition of the Chevron gas station at Avenue 15 and may result in a potential use of a high-risk property for hazardous waste. Although Chevron has had no prior reported leaks,

releases, or spills, there is still a possibility that contamination has occurred, which cannot be determined until a Preliminary Site Investigation is conducted. A Preliminary Site Investigation would be completed before construction of Phase 2 to identify the lateral and vertical extent of petroleum hydrocarbon contamination, if any, on this property. A full site characterization cannot be made, however, until the tanks and piping are actually removed from the property. The removal of the underground storage tanks, piping, and any associated cleanup is the responsibility of the property owners and must be conducted pursuant to legal and regulatory requirements. Once regulatory site closure is provided or little to no contamination is found, the site would no longer be considered a high risk.

The other businesses within the project limits identified in the August 2015 site visit would also be acquired for Alternative 4 (Phase 2) and present a potential hazardous risk. However, this potential risk was determined to be a low impact to the proposed project due to the type of businesses and their size, which generally only handle small/medium quantities of hazardous materials/waste.

Currently, the Build Alternatives do not propose any changes to the Avenue 11 Undercrossing (Bridge #41-0083) or to the existing Madera Canal (Bridge #41-0039). However, if the design is changed and either bridge is modified, a bridge survey would be required to determine if asbestos-containing material and/or lead-based paint exists on the bridge before construction. A Preliminary Site Investigation would be required.

For both Build Alternatives, soil disturbance and some removal of the existing roadway would occur. However, depending on construction activities, if soil is excavated to a depth of 3 feet and handled as a whole population, aerially deposited lead levels would likely be non-hazardous according to current regulatory thresholds.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are recommended to minimize potential impacts of the project:

- A Preliminary Site Investigation and/or a Detailed Site Investigation will be conducted prior to the construction of Phase 2.
- The Chevron gas station owner or operator will remove all pumps, tanks, piping and appurtenances and will remove all identified contamination.
- If contamination is present that cannot be removed, ownership of any residual contamination will remain with the Chevron gas station owner or operator.

- Acquisition of any contaminated property will be conducted as required by Caltrans policies including policy PD-02.
- Caltrans Standard Special Provisions and Non-Standard Special Provisions pertaining to hazardous waste would be provided during the Plans, Specifications and Estimates phase of the project prior to construction.
- The appropriate special provision would be provided to address aerially deposited lead and lead found in white and yellow striping/paint/pavement markings.

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 (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$). In addition, national and state standards exist for lead, and state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H_2S), 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 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 (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has attainment or maintenance areas for all of these transportation-related “criteria pollutants” except sulfur dioxide, and also has a nonattainment area for lead (Pb); 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 Plan), 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 Clean Air Act and the Safety Improvement 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 Plan and Federal Transportation Improvement Programs are in conformity with the Safety Improvement Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Programs must be modified until conformity is attained. If the design concept, scope, and “open-to-traffic” schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and the Federal Transportation Improvement Programs, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and the U.S. Environmental Protection Act officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. Environmental Protection Agency and are then called "maintenance" areas. "Hot-spot" analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for purposes of the National Environmental Policy Act. Conformity does include some specific procedural and documentation standards for projects that require a "hot-spot" analysis. In general, projects must not cause the "hot-spot"-related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon monoxide or particulate matter violation is in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Affected Environment

Caltrans completed an Air Quality Report for the project in May 2016, with a second Air Quality Report completed in August 2019. The project limits used in the 2019 report and for air quality conformity concurrence began at post mile 1.5 and ended at post mile 7.6.

The project lies in rural southeastern Madera County, north of the Madera/Fresno County line in the San Joaquin Valley Air Basin. The San Joaquin Valley, almost 300 miles long, is bounded by the Tehachapi Mountains in the south and the San Joaquin Delta in the north, and the Sierra Nevada Mountain Range in the east and the Coast Ranges in the west. Total land area is 23,720 square miles.

The valley has hot, dry summers and cool winters. Precipitation is directly related to latitude and elevation, with the southern portion accumulating and average of less than 6 inches of rain per year. The rainy season is typically between November and April, with the average annual rainfall ranging from 8 inches in the southern part of the county to 18 inches in the northern part of the county. Snow is rare on the valley floor. Warm temperatures, prevailing winds and the location of the county within an enclosed valley all play a role in the air quality of the area.

The mountain ranges that border the air basin influence the wind speed and direction, affecting both the climate and the dispersion of air pollutants in the valley, where temperature inversions frequently occur. Inversions are more prevalent and of greater magnitude in late summer and fall. In addition, damp cool surface layers (fog) also form on average of 20 days in December and January because of a winter high-pressure cell. Due to a summer high-

pressure cell, winds speeds are generally highest during the spring and lowest in the fall and winter.

Madera County is in a state nonattainment area for the smallest particulate matter ($PM_{2.5}$), other particulate matter (PM_{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 ($PM_{2.5}$), and in attainment for other particulate matter (PM_{10}). Table 2.11 shows the federal and state ambient air quality standards. 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 ($PM_{2.5}$) and particulate matter (PM_{10}). Table 2.12 shows the state and federal criteria for air pollutant effects and their sources.

Table 2.11 Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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Table 2.12 State and Federal Criteria Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate 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 VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) 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 (PM_{10})	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 PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & 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 ($PM_{2.5}$)	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 $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$.	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 NOx, sulfur oxides (SOx), ammonia, and ROG.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	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 (VRP)	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 I" 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 (H_2S)	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.

Environmental Consequences

Regional Air Quality Conformity

The South Madera Expressway project is included in the Madera County Transportation Commission's Year 2018 Regional Transportation Plan/Sustainable Communities Strategy Draft Amendment No. 1, 2019 and the Year 2019 cost-constrained Federal Transportation Improvement Program.

This analysis found that the plan and, therefore, the individual projects contained in the plan, 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 (NAAQS).

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. EPA released an updated version of Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas. The guidance defines a project of air-quality concern as:

i. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

ii. Projects affecting intersections that are at Level-of-Service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

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

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

v. Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ and PM_{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 (PM_{10} emissions) and road dust.

It is estimated that the Average Annual Daily Traffic (AADT) count for 2057 is less than 210,000 vehicles at each roadway segment, and truck traffic would be less than 21,000 at each roadway segment. Table 2.13 shows the Average Annual Daily Traffic data provided by Caltrans traffic engineers for 2017, 2027, 2037, and 2057.

Table 2.13 Current and Future Traffic Conditions

Year	Roadway Segment	Annual Average Daily Traffic	Truck Volume (10 percent)
2018	Avenue 15	30,400	**3,040**
	Avenue 14 and 14½	21,730	2,173
	Avenue 12	44,000	4,400
2023	Avenue 15	37,700	3,770
	Avenue 14 and 14½	30,270	3,027
	Avenue 12	62,600	6,260
2037	Avenue 15	68,500	6,850
	Avenue 14 and 14½	59,350	5,935
	Avenue 12	117,500	11,750
2057	Avenue 15	121,000	12,100
	Avenue 14 and 14½	104,950	10,495
	Avenue 12	209,000	20,900

Source: Caltrans Air Quality Report, August 2019

$PM_{2.5}$ Hot-Spot Conformity Assessment

The project is in a nonattainment area for $PM_{2.5}$. Table 2.14 shows the violations of the federal standards for $PM_{2.5}$ registered over the last five years at the Madera monitoring station at 28261 Avenue 14 in Madera, the closest monitoring station to the project.

Table 2.14 Monitoring Station $PM_{2.5}$ Data

Standard Monitored	2013	2014	2015	2016	2017	2018
Days Greater than the 24-Hour Standard (Micrograms per cubic meter)	24	26	12.1	9	16.7	23.9
Maximum 24-hr concentration (Micrograms per cubic meter)	87.5	80.2	62.0	47.7	70.6	80.0

Source: Caltrans Air Quality Report, August 2019

PM_{10} Hot-Spot Conformity Assessment

The proposed project is in a nonattainment area for PM_{10}. The Madera monitoring station at 28261 Avenue 14, Madera, the closest monitoring station to the project, has registered the following violations (see Table 2.15) of the federal standard in the last five years.

Table 2.15 Monitoring Station PM_{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	--
Maximum 24-hr concentration (Micrograms per cubic meter	110.3	92.3	112.0	122.7	149.5	--

Source: Caltrans Air Quality Report, August 2019

Particulate Matter Analysis Conclusion

There is no reason to believe that this project will create a new violation or worsen an existing violation of the $PM_{2.5}$ and PM_{10} of the National Ambient Air Quality Standards (NAAQS)

The project was determined not to be a project of air quality concern. Concurrence was received from the Federal Highway Administration and the EPA in August 2019.

The Department of Transportation has completed this assessment and has determined that this project is not a "Project of Air Quality Concern."

The Environmental Protection Agency and the Federal Highway Administration concurred with Caltrans' determination in August 2019 (see Appendix M).

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.

Carbon Monoxide Analysis

The project is in attainment for the federal and state carbon monoxide standards. The Carbon Monoxide Protocol was developed for project-level conformity (hot-spot) analysis and was approved for use by the U.S. EPA in 1997. It provides qualitative and quantitative screening procedures, as well as quantitative (modeling) analysis methods to assess project-level carbon monoxide impacts. The qualitative screening step is designed to avoid the use of detailed modeling for projects that clearly cannot cause a violation, or worsen an existing violation, of the carbon monoxide standards. Although the protocol was designed to address federal standards, it has been recommended for use by several air pollution control districts in their CEQA analysis guidance documents and should also be valid for California standards because the key criterion (8-hour concentration) is similar: 9 ppm for the federal standard and 9 ppm for the state standard. Table 2.16 shows the Project-Level Carbon Monoxide Protocol questions used to make that determination for Alternative 2 and Alternative 4 in 2016. Table 2.17 shows the Project-Level Carbon Monoxide Protocol questions used to make that determination for the phasing of Alternative 4 in 2019.

Table 2.16 Summary of Project-Level Carbon Monoxide Analysis

Protocol Question	Alternative 2	Alternative 4
Does the project significantly increase the percentage of vehicles operating in *cold start mode?	No	No
Does the project improve traffic flow?	Yes, levels of service would improve	Yes, levels of service would improve
Does the project move traffic closer to receptors?	No	Yes
Is the project suspected of resulting in higher carbon monoxide (CO) concentrations than those existing within the region at the time attainment demonstration?	No	No
Does the project involve a signalized intersection at level of service E or F?	No	No
Does the project involve a signalized intersection worsening its level of service to E or F?	No, if built, level of service would improve	No, if built, level of service would improve
Are there any other reasons to believe the project may have adverse air quality impacts?	No	No

Table 2.17 Summary of Project-Level Carbon Monoxide Analysis for Alternative 4, Phased

Protocol Question	Alternative 4, Phased
3.1.1: Is the project exempt from all emissions analyses?	No. The project is not exempt because it does not fit any of the exemption categories identified in 40 CFR 93.126.
3.1.2: Is the project exempt from regional emissions analyses?	No. The proposed project does not align with any of the project types exempted from regional emissions analyses under 40 CFR 93.127 (proceed to 3.1.3).
3.1.3: Is the project locally defined as regionally significant?	Yes. The proposed project is considered a regionally significant transportation project, according to 40 CFR 93.101, because it is included in the modeling of the area's transportation network (proceed to 3.1.4).
3.1.4: Is the project in a federal attainment area?	Yes. In 1997, the SJVAB was designated as a maintenance area for carbon monoxide (CO) by the Environmental Protection Agency, and the Valley was compelled to adhere to a 20-year maintenance plan to decrease the levels of carbon monoxide to acceptable levels. This goal was achieved November 30, 2017.
3.1.9: Examine local impacts; Is the project in a CO nonattainment area?	No
3.1.9: Examine local impacts; Was the area redesignated as "attainment" after the 1990 Clean Air Act?	Yes

3.1.9: Examine local impacts; Has "continued attainment" been verified with the local Air District?	Yes
3.1.9: Examine local impacts; Does project worsen air quality?	No
Conclusion:	**Project satisfactory, no further analysis needed**

In regard to question 3 in Table 2.17 above, the results of the air quality analysis would not change because the distance between receptors and traffic would remain about the same. Currently, the distance between traffic and the existing businesses or receptors is about 80 feet. If Alternative 4 is selected as the preferred alternative, the businesses along the route would be relocated and the new alignment or traffic would be about 80 feet to 90 feet from the new receptors.

According to the California Almanac of Emissions and Air Quality (2008 edition), California has reduced carbon monoxide concentrations over the past 10 years. It is expected that improved motor vehicle emissions controls and less-polluting fuels would continue this downward trend.

Although there is a monitor station near the project located on Avenue 14, the monitoring for carbon monoxide was stopped statewide when attainment was achieved in California in 2012.

Mobile Source Air Toxics

Mobile source air toxics (MSATs) 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 from 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 the 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 mobile source air toxic effects, or

3- Quantitative analysis for projects with higher potential mobile source air toxic effects.

Caltrans determined 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 due to the effect of new 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, although the effect of speed changes on diesel particulate matter is not accounted for in the MOBILE 6.2 model.

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 41 is the major north-south interregional route through the area. Travel times are discussed further in Section 2.1.2, Growth. Table 2.18 summarizes the project's mobile source air toxics emissions in tons per year with and without the project.

Table 2.18 Summary of Project Mobile Source Air Toxics

Pollutant (tons per year)	Existing	No-Build Alternative			Build Alternatives		
		2017	2027	2037	2017	2027	2037
Diesel PM	0.0850	0.0760	0.0940	0.0132	0.0850	0.1000	0.0142
Formaldehyde	0.0300	0.0370	0.0390	0.0540	0.0350	0.0380	0.0520
Butadiene	0.0030	0.0030	0.0030	0.0040	0.0030	0.0030	0.0040
Benzene	0.0210	0.0210	0.0200	0.0270	0.0210	0.0210	0.0270
Acrolein	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Acetaldehyde	0.0150	0.0160	0.0170	0.0240	0.0150	0.0170	0.0230

For each Build Alternative in this environmental document, the amount of mobile source air toxics emitted would be proportional to the vehicle miles traveled assuming that other variables such as fleet mix are the same for each alternative. The vehicle miles traveled estimated for the Build Alternatives and No-Build Alternative do not differ substantially (see Table 2.9 and Table 2.10). The data summarized in Table 2.18 indicates that the mobile source air toxics emissions would decrease over time and the Build Alternative would have slightly less or the same estimated emissions as the No-Build Alternative. The extent to which these speed-related emissions decreases would offset vehicle miles traveled-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models. Because the estimated vehicle miles traveled under each of the alternatives under consideration are the same, it is expected there would be no appreciable difference in overall mobile source air toxics emissions among the various alternatives. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of the Environmental Protection Agency's national control programs that are

projected to reduce annual mobile source air toxics emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the Environmental Protection Agency-projected reductions is so great (even after accounting for vehicle miles traveled growth) that mobile source air toxics emissions in the study area are likely to be lower in the future in nearly all cases.

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 from 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 residences 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 (PM_{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 pertaining 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 10-5 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations. A construction impact analysis will be performed later as the project moves closer to construction. Monitoring and abatement requirements of Caltrans' Standard Specifications and Standard Special Provisions will 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 two tons of either PM_{10} and/or NO_X 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 that 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 toxics emissions; however, these impacts would be temporary. Project construction is expected to generate approximately 2,070 tons of CO2 during the 400 working days (less than the 264 working days per 1 year) duration.

In general, when project-level assessments render a decision to pursue construction emission minimization measures, there are a number of technologies and operational practices that contractors can use to help lower short-term mobile source air toxics. In addition, SAFETEA-LU has emphasized a host of diesel retrofit technologies in the law's Congestion Mitigation and Air Quality Improvement Program (CMAQ) provisions-technologies that are designed to lessen a number of mobile source air toxics.

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 (PM10 emissions) by eliminating the emission of road dust when vehicles pull off of the roadway.
- This 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 two tons of either PM_{10} and/or NO_X 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 that the California state average" or if emissions exceed the limits, the contractor can make the payment of fees paid to the San Joaquin Valley Air Pollution Control District.
- Caltrans Standard Specifications pertaining to dust control and dust palliative requirement 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.

The following additional measures may also be taken into consideration:

- 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.

- Reduce construction waste and maximize the use of recycled materials (reduces consumption of raw materials, reduces landfill waste, and encourages cost savings).
- Incorporate measures to reduce consumption of potable water.
- Measures listed in the applicable Environmental Impact Report prepared for the RTP/SCS that have been identified to reduce greenhouse gas emissions or to reduce vehicle miles traveled (VMT).
- Measures to improve energy efficiency.
- Measures to improve water efficiency (including but not limited to landscaping and building operations).
- Incorporation of Complete Streets components.
- Installation of solar to supply power to highway facility components or buildings.
- Installation of zero-emission vehicle (ZEV) infrastructure (e.g., electric vehicle charging stations).
- Incorporation of native plants and vegetation (replacing more vegetation than was removed) to the project design to increase carbon sequestration.
- Installation of urban planting/vegetation to reduce “heat island” effects.
- Inclusion of landscaping components such as mulch and compost application to improve carbon sequestration rates in soils and reduce organic waste.
- Incorporation of green infrastructure (planted areas) instead of gray (concrete) storm water facilities.
- Alternative selection that minimizes disturbance of undeveloped land.
- Design and installation of long-life pavement structures to minimize life-cycle costs. Consider future climate conditions in decisions. (e.g., areas that are expected to experience increased temperatures and extreme heat days may have different pavement needs than areas expecting more frequent freezing temperatures).
- Incorporation of permeable pavements to reduce urban heat islands. The void structure of pervious concrete acts as insulation and prevents the pavement from storing heat that would otherwise raise air temperatures (resulting in a greater use of air conditioning in nearby buildings).

Climate Change

Climate change is analyzed in Chapter 3.

Neither the U.S. Environmental Protection Agency nor Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on Federal Highway Administration’s climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process would aid decision-

making and improve efficiency at the program level, and would inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act chapter of this environmental document and may be used to inform the National Environmental Policy Act decision. The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours traveled.

2.2.5 Noise and Vibration

Regulatory Setting

The National Environmental Policy Act and the California Environmental Quality Act 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 the National Environmental Policy Act and the California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the Council on Environmental Quality dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section would focus on the National Environmental Policy Act 23 Code of Federal Regulations 772 noise analysis; see Chapter 3 of this document for further information on noise analysis under the California Environmental Quality Act.

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with the Federal Highway Administration (and the California Department of Transportation, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated 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 criterion for residences (67 decibels) is lower than the noise abatement criterion for commercial areas (72 decibels).

Table 2.19 lists the noise abatement criteria for use in the National Environmental Policy Act 23 Code of Federal Regulations 772 analysis. 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 a 12-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the noise abatement criteria.

Table 2.19 Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	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 warehousing.
G	No Noise Abatement Criteria—reporting only	Undeveloped lands that are not permitted.

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

Figure 2-5 shows the noise levels of common activities, so you can compare the actual and predicted highway noise levels discussed in this section with common activities.

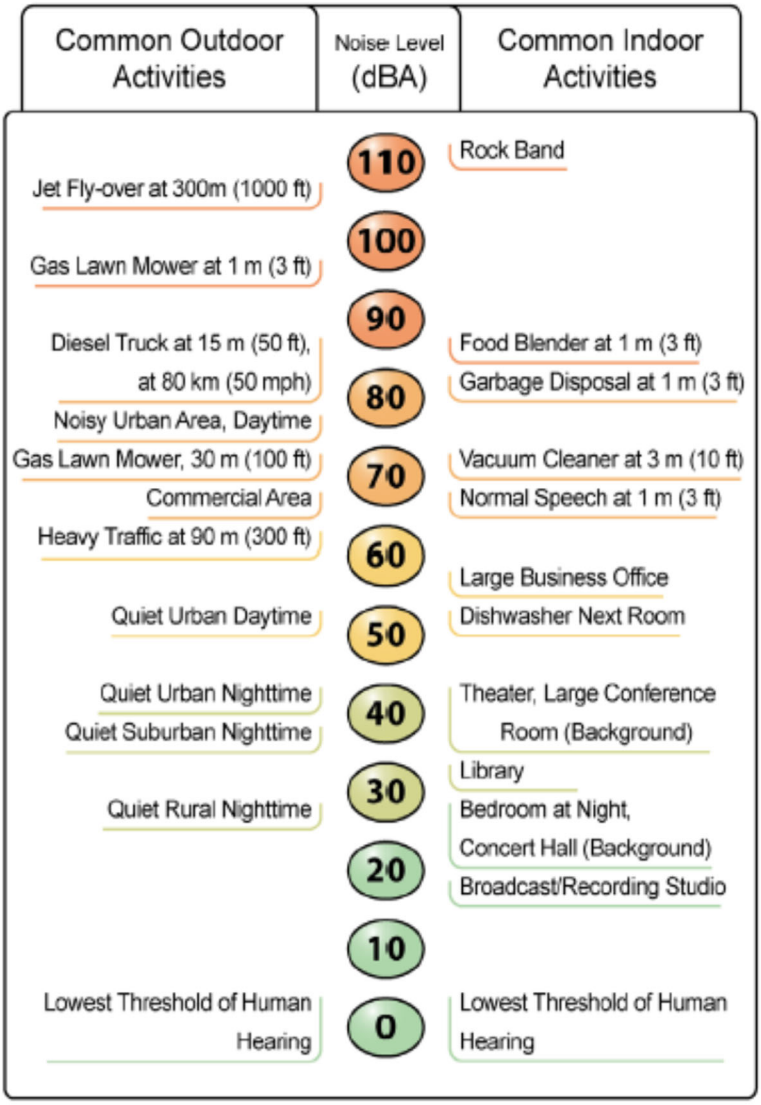


Figure 2-5 Noise Levels of Common Activities

The *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. To meet noise reduction design goals, an abatement measure must be acoustically feasible of reducing noise levels by 7 decibels and meet a design goal to reduce noise by 7 decibels for at least one receptor. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

If it is determined that the project would 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.

Affected Environment

Caltrans initially completed a Noise Study Report in October 2015, and later completed an updated Noise Study Report for the project in February 2019.

A site visit was done on September 27, 2018 to identify representative noise-sensitive receptor locations, noise measurement sites, and potential soundwall locations. Land uses near the proposed corridor alignments were found to be a mix of agricultural, commercial, and residential zones, with very sparse development and scattered residences. Roughly 80 percent of the project corridor is either open space grazing land, farm fields, or vacant land, except for two isolated subdivisions in the project corridor—Rolling Hills and Bonadelle Ranchos Number 9.

Rolling Hills is west of the existing State Route 41 freeway at the south end of the project. The subdivision is separated from the freeway by a two-lane frontage road that runs along the east edge of Rolling Hills from Avenue 10 to Avenue 11¼ and includes a variety of roadside businesses.

The Bonadelle Ranchos Number 9 subdivision is west of the existing State Route 41 at the north end of the project. The subdivision is bordered by the Lateral 6.2 canal on the south, Skyview Road on the west, Avenue 15 on the north, and the existing State Route 41 on the east. The eastern edge of Bonadelle Ranchos Number 9 consists of a commercial strip of businesses along the existing State Route 41 between Avenue 14 and Avenue 15. There are no public schools, institutional facilities, or community services such as, like a hospitals, within this subdivision, but a church sits west of State Route 41 on Avenue 14.

Noise measurement sites are locations where noise measurements are taken to determine existing noise levels and to verify or calibrate computer noise models. These sites are chosen as being representative of similar sensitive sites in the area. Locations that are expected to receive the greatest noise impacts, such as the first

row of houses from the noise source, are generally chosen. All measurement sites are selected so that there would be no unusual noises such as dogs, pool pumps, or children that could affect the measured levels. It is also desirable to choose sites that are free of major physical obstructions and contamination by other noise sources. Caltrans identified 32 receptors within the Bonadelle Ranchos Number 9 subdivision between Avenues 14 and 15 west of the existing State Route 41. No receptors were considered in Rolling Hills due to the distance from the existing freeway.

Short-term 1520-minute interval noise measurements were also taken at three locations. Noise measurements taken during off-peak hours were adjusted to peak-hour noise levels. These sites serve as acoustical representatives of all the noise-sensitive locations in the project study area. Table 2.20 shows the results for the three short-term noise measurements. The existing noise levels at these sites vary due to such factors as distances to existing roadways, the operation of various machinery and equipment, and other background noise sources.

Table 2.20 Short-Term Measurements and Modeling

Site Number	Date	Start Time	Average Speeds (Miles Per Hour)	Noise Levels		
				$L_{eq(h)}$ Decibels		Deviation Decibel
				Measured	Modeled	
ST1	9/27/18	10:30	65	51.0	50.7	0.3
ST2	9/27/18	11:00	65	52.6	51.8	0.8
ST3	9/27/18	11:25	65	55.1	54.0	1.1

Source: Caltrans Noise Study Report, February 2019

Noise measurements were also taken during the same period to evaluate existing background noise levels in the project vicinity. Background noise levels were obtained to determine the current noise environment and compare existing noise levels to future noise levels.

Table 2.21 shows the existing noise levels for the identified 32 receptors within the Bonadelle Ranchos Number 9 subdivision between Avenues 14 and 15 west of the existing State Route 41. The table includes the modeling locations and land use. A map of the noise receptors is provided in Appendix L.

Table 2.21 Existing Noise Levels

Site ID Number	Location or Address	Land Use	Existing Noise Level (decibels)	Measured or Modeled
ST-1	41437 Ave 14	Church	54.8	Measured
R-2	14238 Huntington Rd	Rural/Residential	48.2	Modeled
R-3	14248 Huntington Rd	Rural/Residential	48.4	Modeled
R-4	14276 Huntington Rd	Rural/Residential	48.5	Modeled
R-5	14304 Huntington Rd	Rural/Residential	48.8	Modeled
R-6	14362 Huntington Rd	Rural/Residential	49.2	Modeled
R-7	14418 Huntington Rd	Rural/Residential	49.3	Modeled
R-8	14446 Huntington Rd	Rural/Residential	49.3	Modeled
R-9	14474 Huntington Rd	Rural/Residential	49.3	Modeled
R-10	14367 Huntington Rd	Rural/Residential	53.3	Modeled
R-11	14567 Huntington Rd	Rural/Residential	54.1	Modeled
R-12	14605 Huntington Rd	Rural/Residential	52.6	Modeled
R-13	14681 Huntington Rd	Rural/Residential	53.6	Modeled
R-14	14823 Huntington Rd	Rural/Residential	53.8	Modeled
R-15	14861 Huntington Rd	Rural/Residential	53.8	Modeled
R-16	14558 Huntington Rd	Rural/Residential	49.0	Modeled
R-17	14586 Huntington Rd	Rural/Residential	49.1	Modeled
R-18	14614 Huntington Rd	Rural/Residential	49.2	Modeled
R-19	14644 Huntington Rd	Rural/Residential	49.1	Modeled
R-20	14672 Huntington Rd	Rural/Residential	49.2	Modeled
R-21	14700 Huntington Rd	Rural/Residential	49.2	Modeled
R-22	14728 Huntington Rd	Rural/Residential	49.2	Modeled
R-23	14746 Huntington Rd	Rural/Residential	49.2	Modeled
R-24	14772 Huntington Rd	Rural/Residential	49.3	Modeled

R-25	14802 Huntington Rd	Rural/Residential	49.3	Modeled
R-26	14830 Huntington Rd	Rural/Residential	49.2	Modeled
R-27	14858 Huntington Rd	Rural/Residential	49.2	Modeled
R-28	14916 Huntington Rd	Rural/Residential	49.2	Modeled
R-29	14944 Huntington Rd	Rural/Residential	49.2	Modeled
R-30	14976 Huntington Rd	Rural/Residential	49.2	Modeled
R-31	41404 Ave 14	Rural/Residential	51.2	Modeled
R-32	41380 Ave 14	Rural/Residential	48.5	Modeled

Environmental Consequences

The alignment of Alternative 2 (East Alignment) would move traffic to the east away from the identified receptors located in the Bonadelle Ranchos Number 9 subdivision. Based on the modeled analysis for Alternative 2, no increase in traffic noise levels are expected to result with the construction of this alternative.

Alternative 4 (Existing Alignment), which would be completed in two phases, would acquire the structures along the existing State Route 41 in the Bonadelle Ranchos Number 9 subdivision. Future traffic would be closer to the identified receptors located along Huntington Road and Avenue 14. The remainder of this section discusses the noise level impacts of Alternative 4 during both phases. Table 2.22 shows the modeling results for Alternative 4 Phase 1. Table 2.23 shows the modeling and barrier analysis results for Alternative 4 Phase 2. The tables provide future noise levels and include the modeling locations and land use. Traffic noise levels at sensitive receptors were estimated using the highway traffic noise model, TNM 2.5.

Table 2.22 Predicted Noise Levels (Alternative 4 Phase 1)

Receptor No.	Land Use	Existing Noise Levels $L_{eq(h)}$, dBA (2018)	Future Peak Hour Noise Levels, $L_{eq(h)}$, dBA[1]			
			Project "Build" Without Barrier $L_{eq(h)}$, dBA (2038)	Activity Category and NAC (dBA)	Impact Type (S, A/E or NONE)[4]	Noise Level Increase dB
ST-1(R1)	CH	55 [E]	56	B (67)	NONE	1
R2	SFR	48 [E]	51	B (67)	NONE	3
R3	SFR	48 [E]	51	B (67)	NONE	3

R4	SFR	49 [E]	51	B (67)	NONE	2
R5	SFR	49 [E]	51	B (67)	NONE	2
R6	SFR	49 [E]	51	B (67)	NONE	2
R7	SFR	49 [E]	51	B (67)	NONE	2
R8	SFR	49 [E]	51	B (67)	NONE	2
R9	SFR	49 [E]	51	B (67)	NONE	2
R10	SFR	54 [E]	55	B (67)	NONE	2
R11	SFR	54 [E]	55	B (67)	NONE	1
R12	SFR	53 [E]	54	B (67)	NONE	1
R13	SFR	54 [E]	55	B (67)	NONE	1
R14	SFR	54 [E]	55	B (67)	NONE	1
R15	SFR	54 [E]	55	B (67)	NONE	1
R16	SFR	49 [E]	51	B (67)	NONE	2
R17	SFR	49 [E]	51	B (67)	NONE	2
R18	SFR	49 [E]	51	B (67)	NONE	2
R19	SFR	49 [E]	51	B (67)	NONE	2
R20	SFR	49 [E]	51	B (67)	NONE	2
R21	SFR	49 [E]	51	B (67)	NONE	2
R22	SFR	49 [E]	51	B (67)	NONE	2
R23	SFR	49 [E]	51	B (67)	NONE	2
R24	SFR	49 [E]	51	B (67)	NONE	2
R25	SFR	49 [E]	51	B (67)	NONE	2
R26	SFR	49 [E]	51	B (67)	NONE	2
R27	SFR	49 [E]	51	B (67)	NONE	2
R28	SFR	49 [E]	51	B (67)	NONE	2
R29	SFR	49 [E]	51	B (67)	NONE	2

R30	SFR	49 E	51	B (67)	NONE	2
R31	SFR	51 E	51	B (67)	NONE	0
R32	SFR	49 E	49	B (67)	NONE	0

Notes:
$L_{eq(h)}$ are A-weighted, peak hour noise levels in decibels
E = Calculated using future "No-Build" and measured data
SFR = Single-family residence
CH = Church
S = Substantial increase (12dBA or more)
A/E = Approach or exceed NAC
R = Recommended height to meet feasibility requirements of Department's Noise Abatement Protocol
T = Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks

Source: Caltrans Noise Study Report, February 2019

Table 2.23 Predicted Noise Levels (Alternative 4 Phase 2)

Receptor Number	Land Use	Existing Noise Levels $L_{eq(h)}$, dBA (2017)	Future Peak Hour Noise Levels, $L_{eq(h)}$, dBA[1]									
			Design Year Noise Level W/O Project (2038)	Design Year Noise Level W/ Project (2038)	Activity Category and NAC (dBA)	Impact Type (S, A/E or NONE)[4]	Noise Prediction with Barrier and Barrier Insertion Loss (I.L.)					
							12ft		14ft		16ft	
							$L_{eq(h)}$	I.L.	$L_{eq(h)}$	I.L.	$L_{eq(h)}$	I.L.
ST-1(R1)	CH	55 E	56	71	B (67)	S	64 R, T	7	63	8	60	11
R2	SFR	48 E	51	61	B (67)	S	60 R, T	1	60	1	55	6
R3	SFR	48 E	51	61	B (67)	S	60 R, T	1	59	2	55	6
R4	SFR	49 E	51	61	B (67)	S	58 R, T	3	58	3	55	6
R5	SFR	49 E	51	61	B (67)	S	58 R, T	3	57	4	55	6
R6	SFR	49 E	51	61	B (67)	S	58 R, T	3	57	4	56	5
R7	SFR	49 E	51	61	B (67)	S	58 R, T	3	57	4	56	5
R8	SFR	49 E	51	61	B (67)	S	58 R, T	3	57	4	56	5
R9	SFR	49 E	51	61	B (67)	S	58 R, T	3	57	4	56	5
R10	SFR	54 E	55	69	B (67)	S	62 R, T	7	61	8	60	9
R11	SFR	54 E	55	70	B (67)	S	62 R, T	8	61	9	60	10
R12	SFR	53 E	54	67	B (67)	S	61 R, T	6	60	7	59	8
R13	SFR	54 E	55	69	B (67)	S	62 R, T	7	61	8	60	9
R14	SFR	54 E	55	69	B (67)	S	62 R, T	7	61	8	60	9
R15	SFR	54 E	55	69	B (67)	S	62 R, T	7	61	8	60	9

R16	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	56	5	56	5
R17	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	56	5	56	5
R18	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R19	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
5R20	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R21	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R22	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R23	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R24	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R25	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R26	SFR	49 [E]	51	61	B (67)	S	57 [R, T]	4	57	4	56	5
R27	SFR	49 [E]	51	61	B (67)	S	58 [R, T]	3	57	4	56	5
R28	SFR	49 [E]	51	61	B (67)	S	58 [R, T]	3	57	4	56	5
R29	SFR	49 [E]	51	61	B (67)	S	58 [R, T]	3	58	3	56	5
R30	SFR	49 [E]	51	61	B (67)	S	59 [R, T]	2	58	3	56	5
R31	SFR	51 [E]	51	65	B (67)	S	65 [R, T]	0	64	0	64	1
R32	SFR	49 [E]	49	60	B (67)	A/E	60 [R, T]	0	60	0	60	0

Notes:
$L_{eq(h)}$ are A-weighted, peak hour noise levels in decibels
E = Calculated using future "No-Build" and measured data
SFR = Single-family residence
CH = Church
S = Substantial increase (12dBA or more)
A/E = Approach or exceed NAC
R = Recommended height to meet feasibility requirements of Department's Noise Abatement Protocol
T = Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks

Source: Caltrans Noise Study Report, February 2019

Results of the noise analysis for Alternative 4 indicated that noise impacts are expected to occur at various sensitive receptors that are next to the proposed corridor, with their property abutting the roadway right-of-way line. These receptors would essentially be sharing the property line with the proposed future roadway right-of-way line.

Alternative 4 constructs a freeway south of Avenue 12 and an expressway north of Avenue 12. The new alignment would mostly use the existing highway corridor and right-of-way by constructing the expressway on the west side of the existing State Route 41 until transitioning back into the existing State Route 41 north of the Madera

Canal. Avenue 15 would be realigned to the north slightly to connect with the local road proposed for planned residential development.

Alternative 4 would move the alignment of State Route 41 to the west, north of the Lateral 6.2 canal, and relocates the commercial businesses along the existing State Route 41 between Avenue 14 and Avenue 15. In Phase 1, future noise levels would vary between 49 and 55 dBA for 31 single-family residences and 56 dBA for Madera Hills Bible Church. Phase 2 brings the edge of the traveled roadway as close as 70 feet from Madera Hills Bible Church, which would move traffic noise closer to the identified receivers, increasing noise levels:

- ST-1, the church, is 55 decibels, and the future noise level is estimated to be 71 decibels, an increase of 16 decibels.
- R10-R15 and R31 would experience future noise levels at 65-70 decibels, an increase of 14-16 decibels.
- All 24 remaining receivers would average 61 decibels, with all homes experiencing a 12-decibel increase, except for R32, which would experience an 11-decibel increase.

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 a 12-decibel or more increase) 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.

If it is determined that the project would 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.

Table 2.23 indicated that a 16-foot soundwall located on the shoulder of the roadway would be needed to reduce noise levels by the minimum required 5 decibels at locations where predicted noise levels would be approaching or exceeding Noise Abatement Criteria requirements.

Caltrans considered a soundwall (SW1) from Avenue 14 to Avenue 15. The 16-foot soundwall would benefit 16 single-family residences by reducing noise levels by 5 decibels. It would also benefit Madera Hills Bible Church and 6 other single-family residences by reducing noise levels by 8-10 decibels.

To meet noise reduction design goals, an abatement measure, such as a soundwall, must be acoustically feasible (capable) of reducing noise levels by 5 decibels and meet a design goal to reduce noise by 7 decibels for at least one receptor. In the analysis for the project, Madera Hills Bible Church and 31 single-family residences

would potentially benefit from the soundwall with noise reduction levels ranging between 5 and 10 decibels.

Construction Noise

Noise at future project construction sites would be intermittent, short-term, and of varying intensity. The degree of construction noise impacts may vary for different areas and depends on the nature and extent of construction activities. Table 2.24 shows the typical noise levels that may occur during construction. All construction noise would be temporary.

Table 2.24 Typical Construction Noise

Equipment	Maximum Noise Level at 50 feet (dBA)
Front End Loader	79
Dump Truck	76
Boring Jack Power Unit	83
Backhoe	78
Concrete Mixer Truck	79
Concrete Saw	90
Paver	77

Source: Construction Noise Handbook FHWA, 2006

Avoidance, Minimization, and/or Abatement Measures

No measures are required for the operation of Alternative 2 and Alternative 4 Phase 1.

Results of the abatement (soundwall) analysis indicated that a soundwall located on the shoulder of the roadway would be needed if Alternative 4 is selected as the preferred alternative to reduce noise levels by the minimum required 5 decibels at locations where predicted noise levels would be approaching or exceeding noise abatement criteria requirements (67 decibels).

A 16-foot soundwall (SW1) for Alternative 4 Phase 2 was determined feasible and would result in a 7-decibel noise reduction for receptors R1 and R10-R15 and a 5-decibel decrease for receptors R6-R9 and R16-R27. This wall configuration results in a total of 23 benefitted receptors.

Avenue 14 provides access to the residential development. Therefore, it is not feasible to extend the soundwall to shield receptors R31 and R32. Receptors R31 and R32 will experience future noise levels of 65 decibels (a 14-decibel increase compared to the

existing noise levels) and 60 decibels (an 11-decibel increase compared to existing noise levels), respectively.

The following measures are required to minimize noise and vibration disturbances at sensitive receptors during periods of construction for both Build Alternatives.

Equipment Noise Control

- Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement features, such as mufflers and engine enclosures, and also ensure that engine vibration isolators are intact and operational. Newer equipment would generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding, etc.).

- Use construction methods or equipment that would provide the lowest level of noise and ground vibration impact such as alternative low noise pile installation methods.

- Turn off idling equipment.

- Use and relocate temporary noise barriers, as needed, to protect sensitive receptors against excessive noise from construction activities. Noise barriers can be made of heavy plywood, or moveable insulated sound blankets.

Administrative Measures

- Ensure noise levels associated with construction activities are in compliance with applicable allowable limits set forth in noise ordinances of the County of Madera. Implement a construction noise and/or vibration monitoring program to limit the impacts.

- Limit construction activities to daytime hours, if possible. If nighttime construction is absolutely necessary, obtain the proper permits.

- Keep noise levels relatively uniform and avoid impulsive noises.

- Maintain good public relations with the community to minimize objections to the unavoidable construction impacts. Provide frequent activity updates of all construction activities.

A combination of techniques with equipment noise control and administrative measures can be selected to provide the most effective means to minimize effects of the construction activity impacts. Application of these measures would reduce construction-related noise impacts; however, a temporary increase in noise and vibration may still occur.

2.3 Biological Environment

Caltrans completed a Natural Environment Study for the proposed project in December 2015, with a revised version completed in 2019. Alternative 2 and Alternative 4 were studied in the initial Natural Environment Study, while the updated plan to construct Alternative 4 in two phases was studied in the Revised Natural Environment Study. Alternative 2, Alternative 4, and the phased construction of Alternative 4 will each be analyzed in this section.

The Action Area used for biological studies is defined as the area where both direct and indirect effects from the proposed project are expected to occur. The Action Area is composed of an approximate 125- to 250-foot-average-wide buffer that has been added to the outer edge of the project footprint; in some areas, the buffer width measures as little as 50 feet, while in other areas it measures over 1,000 feet. The Action Area consists of 1,040 acres. The landscape associated with the biological study area includes the existing and proposed Caltrans right-of-way, adjacent private property (agriculture, grazed grassland, and commercial property), Madera Canal, the Lateral 6.2 canal, and all identified watershed features.

Biological studies were conducted within the Action Area on various dates from November 8, 2004 through July 17, 2016. Access was not granted to all properties for the field surveys, as noted in the applicable communities' descriptions below.

In the discussion that follows, the Action Area is a larger area than the project corridor or project impact area. The *project corridor or project impact area* combines the right-of-way needed for both Build Alternatives under consideration and is larger than the area of impact, or impact area, for each Build Alternative. When determining temporary and permanent impacts for each Build Alternative, the area of impact or impact area includes the right-of-way needed for each alignment, plus the utility easements and detention basins associated with each alignment.

2.3.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed under Threatened and Endangered Species in Section 2.3.5. Wetlands and other waters are discussed in Section 2.3.2 as well as below.

Affected Environment

Caltrans completed a Natural Environment Study in December 2015, with a revised version completed in 2019. Biological surveys were conducted to assess natural communities within the Action Area. The Action Area used for biological studies is defined as the area where both direct and indirect effects from the proposed project are expected to occur. The Action Area is composed of an approximate 125- to 250-foot-average-wide buffer that has been added to the outer edge of the project footprint; in some areas, the buffer width measures as little as 50 feet, while in other areas it measures over 1,000 feet.

The biological study area contains four natural communities: northern hardpan vernal pool, northern claypan vernal pool, non-native grassland, and seasonal wetland, all of which provide habitat for plant and animal species of special concern. The northern hardpan and northern claypan natural communities overlap within the biological study area, and there is no exact delineation between the two natural communities.

Vernal pools are temporary pools of water that provide habitat for distinctive plants and animals. They are a unique type of temporary wetlands ecosystem that fills with rainwater during winter and spring, then disappear until the next wet season. Vernal pools are a type of seasonal wetland but not all seasonal wetlands are vernal pools.

Seasonal wetlands collect water in shallow depressions during the winter and early spring, then recede as temperatures rise. Soils within a seasonal wetland would remain moist through early spring, then dry up until the next rain. Wetlands are discussed in detail in Section 2.3.2 Wetlands and Other Waters.

Northern Hardpan Vernal Pool

Soils series data from the Natural Resources Conservation Service mapped Corning gravelly loam and Redding-Raynor complex north of Avenue 15, and San Joaquin sandy loams and Redding loams south of Avenue 15 and north of Avenue 204. These soils are associated with the formation of hardpan vernal pool habitat. Whitney and Rocklin sandy loam soils are mapped within the grassland areas along the southeast corner of Avenue 12. These soil types are associated with old, low terraces, containing a thin, iron-silica hardpan subsoil, and would support vernal pool habitat.

Claypan and hardpan soils are not mutually exclusive, and some soil series overlap, sometimes containing a deep hardpan layer overlain by a claypan layer. Surveys conducted for vernal pools included those occupied by hardpan and claypan soils. A total of 158 vernal pools, totaling approximately 4.99 acres were found in the Action Area.

Northern Claypan Vernal Pool

Soil series data from the Natural Resources Conservation Service mapped soils with a strong accumulation of clay in the Action Area. Soils mapped within grassland and agricultural areas throughout the Action Area contain claypan and would support northern claypan vernal pool communities. The Corning gravelly loam soil series has a loam surface soil with a claypan subsoil and is associated with grasslands and herbs.

The Redding-Raynor complex contains a claypan surface soil and a hardpan subsoil; it is mapped within the non-native grassland areas north of Avenue 15. Porterville clay soils are an extremely hard clay, derived from alluvium or fine-grained basic igneous rock, and are mapped in a small portion of the Action Area north of Avenue 15.

Claypan and hardpan soils are not mutually exclusive, and some soil series overlap, sometimes containing a deep hardpan layer overlain by a claypan layer. Surveys done for vernal pools confirmed the presence of hardpan and claypan soils. A total of 158 vernal pools, totaling approximately 4.99 acres were found in the Action Area.

Non-native Grassland

The Action Area contains 471.42 acres of non-native grasslands. Due to the changes in climate, land conversion, and human-made and natural fires, the original California grasslands have largely been replaced by non-native grasses, which vary in size depending on location. Undeveloped grasslands within the project area have been converted to grazed pastureland, lacking in woody vegetation but able to support a variety of grasses, herbs, and wildflowers that tend to bloom from late fall through spring. Soils are fine-textured clay, which are completely dry during the summer, and moist or saturated during the winter. However, the timing of the growing season in these types of grassland communities can vary dramatically from year to year within the same site. The areas northeast and northwest of Avenue 15 and southeast of Avenue 12 on State Route 41 contain non-native annual grasses.

Seasonal Wetland

The Action Area contains 30.42 acres of seasonal wetlands made up of 100 seasonal wetlands and 11 potential seasonal wetlands. In a seasonal wetland, water collects in shallow depressions during the winter and early spring, then recedes as temperatures rise. Soils within a seasonal wetland would remain moist through early spring, then dry up until the next rain. The on-site seasonal wetlands are supported nearly entirely by rainfall. Species adapted to the seasonal aspects of wetlands tend to dominate wetland vegetation and can survive many years of flooding or drought. Soils tend to have low dissolved salts from rain.

The following three other habitat types found in the biological study area do not have a “natural community” classification.

Residential/Commercial

Residential and commercial developments are present on the west side of the highway near Avenues 12 and 15. These areas contain plants that prosper at disturbed sites such as commercial business properties, graded parking areas, and cleared roadside shoulders. The hard-packed soils along State Route 41 and on undeveloped commercial and residential properties southeast of State Route 41 tend to support weedy vegetation interspersed along the roadside and adjacent areas. Ruderal species were identified in some seasonal wetlands and ditches in the project area. Included within these areas is landscaped and ornamental vegetation.

Eucalyptus Grove
A stand of non-native eucalyptus trees is at the southwest corner of the Lateral 6.2 canal and State Route 41 on an 8-acre parcel. This stand of trees is densely planted and has not yet reached maturity.

Agricultural Land
The Action Area contains several parcels of agricultural land. Crops east and west of State Route 41 between the Lateral 6.2 canal and Avenue 12 are actively cultivated. Agricultural areas include grape vineyards, cultivated oats, and olive and pistachio orchards.

Habitat Connectivity
Natural landscape blocks extend from Northern California along the west side of the Sierra Nevada Mountain Range south to the project study area. Within this range are regions that support a high diversity of endemic plant and animal species. The project study area contains mapped natural landscape blocks within the broad spectrum of habitat connectivity, but most land has been converted to agricultural uses, so the study area is not considered a high priority area for species habitat in terms of essential connectivity for endemic species.

The San Joaquin River is the nearest major riparian connection. It extends south from Millerton Lake and crosses State Route 41 south of Children's Boulevard, south of the project limits.

Environmental Consequences

Northern Hardpan Vernal Pool
The project would result in permanent and temporary impacts to both northern hardpan and northern claypan vernal pool communities. Hardpan and claypan soil communities often overlap, so these communities are defined by the vernal pools that fall within the dominant soil type. Table 2.25 shows the impacts of the Build Alternatives to northern hardpan and northern claypan vernal pool communities within each alternative alignment.

Table 2.25 Impacts to Northern Hardpan and Northern Claypan Vernal Pool Communities

Vernal Pool Communities	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Estimated Impacts	1.70 acres	2.15 acres	1.73 acres	0.42 acre
Acres of Permanent Impacts	1.19 acres	1.54 acres	1.22 acres	0.32 acre
Acres of Temporary Impacts	0.51 acre	0.61 acre	0.51 acre	0.10 acre

Source: Natural Environment Study, Caltrans, October 2019

Alternative 2 follows the existing State Route 41 alignment until it curves out to the east, just before the Lateral 6.2 canal, then continues north before meeting up with the existing State Route 41 alignment north of the Madera Canal. Permanent impacts to northern hardpan vernal pool communities include the grassland areas north of Avenue 15 and southeast of Avenue 12. Alternative 2 would divide this vernal pool complex.

Alternative 4 would use the existing State Route 41 alignment and acquire additional right-of-way throughout. Permanent impacts to northern hardpan vernal pool communities would include grassland areas north of Avenue 15 and southeast of Avenue 12, segmenting this vernal pool complex and resulting in habitat fragmentation within and around the vernal pools, and reduced habitat connectivity for the species that rely on them. Removal or disruption of these vernal pool complexes may permanently reduce hydrological flow of swale systems flowing in a southwest direction (low drainage pathways that often feed into vernal pools), which receive water from nearby higher elevation land contours. Indirect permanent impacts include the degradation of remaining portions of partially impacted pools, an increased opportunity for erosion, pollution from the runoff or roadway chemicals, and/or the introduction of invasive species.

Northern Claypan Vernal Pool

Alternative 2 would permanently impact the grassland north of Avenue 15 and southeast of Avenue 12, dividing this vernal pool complex. Surveys of the grassland northeast of Avenue 15 and south of the Madera Canal did not identify vernal pools. Surveys of grassland northeast of Madera Canal were limited to aerial surveys because the property owner denied access. Any vernal pools that are next to the new east alignment may face hydrological flow disturbance. Pools on the west side of the alignment may also experience a disruption in flow of downstream precipitation.

Alternative 4 would permanently impact the grassland areas north of Avenue 15 and southeast of Avenue 12, dividing this vernal pool complex and resulting in habitat fragmentation within and around the vernal pools, and a reduced habitat connectivity for the species that rely on them. Removal or disruption of these vernal pool complexes may permanently reduce hydrological flow of swale systems flowing southwest (low drainage pathways that often feed into vernal pools), which receive water from nearby higher elevation land contours. Indirect permanent impacts include the degradation of remaining portions of partially impacted pools, an increased opportunity for erosion, pollution from the runoff or roadway chemicals, and/or the introduction of invasive species.

Habitat Connectivity

The San Joaquin River, the only nearby riparian corridor that provides habitat connectivity, is outside of the Action Area and not expected to be impacted by the project. Reduced habitat connectivity within the vernal pool complexes would result from both alternatives.

Non-native Grassland
Alternative 2 would cause permanent impacts to 83.99 acres of non-native grassland and temporary impacts to 45.96 acres of grassland.

Alternative 4 would have permanent impacts to 104.67 acres of non-native grassland and temporary impacts to 54.34 acres of this habitat type.

Seasonal Wetland
Impacts to seasonal wetlands are discussed in Section 2.3.2. A wetland delineation report and Jurisdictional Determination request would be submitted to the U.S. Army Corps of Engineers for verification and mitigation requirements.

Construction
Industrial construction equipment associated with grading, excavation, and concrete paving (bulldozer, grader, excavator, loader, truck paver, pavement grinder) is expected to be used throughout project construction. Construction equipment used for excavation and grading would occur near sensitive areas such as wetlands and habitat for listed plant and animal species.

No effects to these adjacent environmentally sensitive areas are expected; however, to minimize risk, Caltrans policies will be implemented to ensure that any ground disturbance work would not impact adjacent areas. To prevent construction activity from occurring outside of the designated construction area during the initial process of ground disturbance, Environmentally Sensitive Area (ESA) fencing will be installed. In addition, prior to initial ground disturbance, preconstruction surveys would be conducted. Also, stockpiling of materials, including portable equipment, vehicles and supplies (e.g., chemicals), would be restricted to the designated staging areas.

Similarly, the use of construction equipment creates a potential risk of fluid spills and leaks, though no spills or leaks are anticipated. Caltrans policies require the construction contractor to develop an Emergency Spill Prevention Plan and cleanup protocol that would minimize the risk of any spill contaminating adjacent riparian areas.

Avoidance, Minimization, and/or Mitigation Measures

The following Caltrans policies would be implemented prior to and during construction:

- Work will be conducted outside the rainy season when flows are absent or low.
- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.
- Any portions of Northern Claypan Vernal Pools or other sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be

identified on the Construction Plans and included in the Plans, Specifications, and Estimates section of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.

- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.
- A qualified biologist would be present during initial ground disturbance, including during clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals), would be restricted to the designated construction staging areas.
- Best Management Practices (BMPs) will be included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.
    - Installation of measures to ensure that water quality is protected, both during and after construction.
    - Installation of measures to prevent long-term erosion occurring after construction is complete.
- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

Proposed Compensatory Mitigation for Impacts to Vernal Pool Communities

- Caltrans would submit a request to the U.S. Army Corps of Engineers for a Jurisdictional Determination. All wetlands determined to be jurisdictional by the

U.S. Army Corps of Engineers would be mitigated for by Caltrans pursuant to the Clean Water Act.

- Caltrans would coordinate with the California Department of Fish and Wildlife to develop a compensatory mitigation plan consistent with the U.S. Army Corps of Engineers and the Environmental Protection Agency's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 Code of Federal Regulations Parts 325 and 332 and 40 Code of Federal Regulations Part 230).
- Caltrans would apply appropriate compensatory ratios for the loss of habitat determined during coordination and consultation with U.S. Fish and Wildlife Service and in cooperation with the California Department of Fish and Wildlife. Based on formal consultation with the U.S. Fish and Wildlife Service, Caltrans plans to mitigate for permanent impacts at a 5:1 compensation ratio, indirect impacts will be compensated at a 1.75:1 ratio, and temporary impacts with be compensated for at a 1.1:1 ratio.
- Caltrans' preferred method of compensation for impacts would be to purchase credits at a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved mitigation bank, if one is available within the project service area prior to the start of construction. However, if a bank is not available in the project service area, then permittee-responsible mitigation would be completed.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, commonly known as the Clean Water Act (33 U.S. Code 1344), is the main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the

U.S. Army Corps of Engineers with oversight by the U.S. Environmental Protection Agency.

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

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. Environmental Protection Agency Section 404(b)(1) Guidelines (U.S. Environmental Protection Agency 40 Code of Federal Regulations Part 230), and whether permit approval is in the public interest. The 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 404 (b)(1) 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.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this order states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated mainly by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. The California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation,

whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. See the Water Quality section for more details.

Affected Environment

Wetlands and Other Waters of the U.S.

Caltrans completed a Natural Environment Study in December 2015, with a revised edition completed in 2019. After the Wetland Delineation Report was completed, a Jurisdictional Determination request was submitted to the U.S. Army Corps of Engineers for verification of the boundaries of the on-site wetlands and waters deemed jurisdictional by the U.S. Army Corps of Engineers in August 2015.

Due to the addition of detention basins after completion of the 2015 wetlands and other waters delineations, additional field work was completed by H.T. Harvey & Associates between March and July 2016. The updated results of the 2016 delineations of wetlands and other waters are expected to be submitted to the U.S. Army Corps of Engineers in 2020.

The Action Area contains a total of 39.86 acres of potential jurisdictional wetlands and other waters of the U.S. Caltrans would request a verification of these waters from the U.S. Army Corps of Engineers after the completion of the final environmental document. Access was not granted to all properties for the field surveys.

Canals

The project sits within the Middle San Joaquin-Lower Chowchilla hydrologic unit. Two canals—the Madera Canal and the Lateral 6.2 canal—are within the Action Area. The Madera Canal originates at Millerton Lake where water is carried northerly to the Chowchilla River. The Madera Canal crosses the northern portion of the Action Area and the existing State Route 41 north of Avenue 15. The Lateral 6.2 canal, which diverts from the Madera Canal northeast of the project, flows southwest through agricultural lands and crosses the existing State Route 41 south of Avenue 14.

Ephemeral Streams

Ephemeral streams are defined as water bodies that flow only briefly in an area during and after a period of rainfall. There are four ephemeral streams in the Action Area. The two largest ephemeral streams—Root Creek and Little Dry Creek—flow through the south and north portions of the Action Area, respectively. Root Creek and Little Dry Creek are non-navigable tributaries. Both of these waters are disconnected and

intermittent and provide intermittent flow to vernal pools, seasonal wetlands, and seasonal wetland swales during heavy rains, but do not provide sufficient flow to support permanent aquatic habitat or species that would rely on them. Two other unmapped ephemeral streams convey water north to south on the east side of State Route 41.

Root Creek originates in the foothills to the east and drains southwest crossing the existing State Route 41 south of Avenue 12 before ending in agricultural fields. It has a variable flow of water and provides seasonal hydrologic support to the on-site vernal pools, seasonal wetlands, and seasonal wetland swales, but does not connect to any permanent tributaries. It has been extensively modified by agricultural operations over the years, and a large portion of this creek has been turned into a canal and is absent of vegetation, while other portions in agricultural areas remain a swale.

Culverts

Seven culverts sit within the Action Area. Culvert 2 flows east-west and conveys water in the Madera Canal under the highway. Culvert 1 flows east-west and conveys water in the Madera Lateral 6.2 canal under the highway. Culverts 3 and 4 are the same feature and allow any surface water to flow between the east and west sides of the highway. Culverts 7 and 8 are the same feature and allow any surface water to flow between the east and west sides of the highway. Culverts 6 and 9 are on the west side of the highway, and Culvert 5 is on the east side of the highway.

Non-Wetland Channels

Eight non-wetland channels are within the Action Area. These non-wetland channels may convey surface water southwest from a series of wetland features, share a hydrological connection with a seasonal wetland, receive surface water runoff from the highway, and provide a hydrologic connection between a seasonal wetland swale and one of the roadside drainage basins. One channel appears to be a (relic) portion of a larger swale that stemmed off from a tributary to Root Creek. A non-wetland channel appears to be a portion of a larger ephemeral stream-ephemeral swale complex that connects with a tributary to Root Creek, and another non-wetland channel crosses through a tributary to Root Creek.

Drainage Basins

Five existing drainage basins sit within the Action Area. Four basins are along the east side of State Route 41; the other is on Avenue 12. These basins were constructed to support the surrounding agricultural land and support both ruderal vegetation and emergent vegetation when inundated during the winter and spring months. These basins may also provide marginal habitat for aquatic species, including the California tiger salamander and vernal pool fairy shrimp.

Ditches

Two road-associated ditches are within the Action Area.

Vernal Pools

Vernal pools are unique wetland ecosystems that support a diverse population of aquatic and terrestrial plants and animals. Vernal pools fill with water during the winter and spring, then become dry and disappear until the next season of rain. Over the course of these filling and drying cycles, at least 33 identified plant and animal species have been associated with vernal pools. The pools are classified according to the pools' physical features, influenced by soil type, geology, water chemistry, and topography. Vernal pool types identified within the project area are explained below.

Northern Claypan Vernal Pool

Based on the soils mapped by the Natural Resources Conservation Service, the vernal pools along State Route 41 north of Avenue 15 may be classified as Northern Claypan Vernal Pools. These mapped soils are composed of fine clay particles that sometimes contain saline or alkaline compounds, before being transported to the subsoil where they support the collection and filling of water in the pool.

Northern Hardpan Vernal Pool

Soils that support this vernal pool type occupy more than 25 percent of the soils in the Central Valley that are associated with this natural community type. Based on the soils mapped by the Natural Resources Conservation Service, the vernal pools along State Route 41 north of Avenue 15 may be classified as Northern Hardpan Vernal Pools.

Seasonal Wetland

One hundred seasonal wetlands and 11 potential seasonal wetlands were delineated throughout the Action Area. Seasonal wetlands are shallow depressions underlain with a soil layer impermeable to water. Water collects during the winter and early spring, then recedes as temperatures rise, but soils remain moist through early spring and then dry up until the next rains. Annual species often dominate seasonal wetlands and are able to survive many years of flooding or, in areas of longer drought, plant varieties containing a more diverse seed bank tend to flourish. Seasonal wetlands are supported nearly entirely by rainfall.

Seasonal Wetland Swales

Seventy-one seasonal wetland swales and six potential seasonal wetland swales are throughout the Action Area. Wetland swales are linear features formed in topographical depressions that do not exhibit an ordinary high-water mark. These features are similar to the seasonal wetlands, becoming inundated by winter rains, but only remaining ponded for short periods, whereas their soils may remain saturated into the growing season.

Seasonal Marsh

One seasonal marsh is in the Action Area. This feature is within a topographical depression that becomes inundated by winter rains and irrigation runoff. This feature may remain inundated and/or saturated for longer periods due to the hydrological support it receives from irrigation runoff, as well as runoff from adjacent developments.

Environmental Consequences

Wetlands and Other Waters of the U.S.

The 39.86 acres of potential jurisdictional wetlands and other waters of the U.S. within the Action Area include estimated impacts to wetlands northeast of the Madera Canal where study access was denied. These 39.86 acres have not yet been determined to be jurisdictional under coordination with the U.S. Army Corps of Engineers.

Table 2.26 shows the estimated permanent and temporary impacts for both Build Alternatives. Potential impacts to vernal pools are shown separately from potential impacts to wetlands. These numbers combine to result in 4.75 acres of permanent impacts to wetlands under Alternative 2 and 2.78 acres of permanent impacts to wetlands under Alternative 4, phased. The estimated impacts assume that the U.S. Army Corps of Engineers would consider the drainage basins to be jurisdictional during the verification process.

Table 2.26 Potential Impact to Wetlands and Waters of the U.S.

Hydrologic Resource	Impact Type	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Wetlands	Permanent	3.56	1.24	0.70	0.54
	Temporary	2.44	2.48	2.14	0.34
	Total	6.0	3.72	2.84	0.88
Vernal Pools	Permanent	1.19	1.54	1.22	0.32
	Temporary	0.51	0.61	0.51	0.10
	Total	1.70	2.15	1.73	0.42
Other Waters	Permanent	1.44	3.96	3.33	0.63
	Temporary	3.16	0.95	0.84	0.11
	Total	4.60	4.91	4.17	0.74

Sources: Caltrans Wetlands Delineation Report, July 2015, Vernal Pool Fairy Shrimp 2015 wet season surveys, Caltrans flyover data, and Revised Natural Environment Study 2019

Construction

Construction equipment associated with grading, excavation, and concrete paving (bulldozer, grader, excavator, loader, truck paver, pavement grinder) is expected to be used throughout the project construction period. Construction equipment used for excavation and grading would occur near sensitive areas such as wetlands and habitat for listed plant and animal species.

No effects to these adjacent environmentally sensitive areas are expected; however, to minimize risk, Caltrans policies would be implemented to ensure that any ground disturbance work would not impact adjacent areas. To prevent construction activity occurring outside of the designated construction area during the initial process of ground disturbance, Environmentally Sensitive Area (ESA) fencing will be installed. In addition, prior to the initial ground disturbance, preconstruction surveys would be conducted within the area of project impact and surrounding grounds. Areas that can be avoided during construction would be designated with orange mesh fencing as an

Environmentally Sensitive Area. Also, stockpiling of materials, including portable equipment, vehicles and supplies (e.g., chemicals), would be restricted to designated staging areas.

Use of construction equipment creates a potential risk of accidental fluid spills and leaks. Caltrans policies require the construction contractor to develop an Emergency Spill Prevention Plan and cleanup protocol that would minimize the risk of any spill contaminating nearby riparian areas.

Least Environmentally Damaging Practicable Alternative
Alternative 4 has been determined to be the least environmentally damaging practicable alternative. Alternative 4 will permanently impact 2.78 acres of wetlands compared to 4.75 acres of permanent impacts for Alternative 2. In addition, Alternative 4 will have less permanent impacts to critical habitat for threatened and endangered species.

Avoidance, Minimization, and/or Mitigation Measures

Best Management Practices would be included so the smallest practical footprint would be in place to minimize temporary, indirect, and permanent impacts to waters of the U.S.

If the waters within the project area are determined to be jurisdictional, Caltrans would obtain permits from the U.S. Army Corps of Engineers (404 Permit), California Regional Water Quality Control Board (401 Certification) and California Department of Fish and Wildlife (Streambed Alteration Agreement). These permits would identify measures to address impacts to all jurisdictional waters. All proposed permits are listed in Section 1.7 “Permits and Approvals Needed” of this report.

The following Caltrans policies would be implemented to avoid and minimize potential impacts from construction:

- Work will be conducted outside the rainy season when flows are absent or low.
- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.
- Any portions of Northern Claypan Vernal Pools or other sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be identified on the Construction Plans and included in the Plans, Specifications, and Estimates section of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.

- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.
- A qualified biologist would be present during initial ground disturbance, including during clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals) would be restricted to the designated construction staging areas.
- Best Management Practices (BMPs) were included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.
    - Installation of measures to ensure that water quality is protected, both during and after construction.
    - Installation of measures to prevent long-term erosion occurring after construction is complete.
- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

Proposed Compensatory Mitigation for Impacts to Wetlands and Other Waters of the U.S.

- Caltrans would submit a request to the U.S. Army Corps of Engineers for a Jurisdictional Determination. All wetlands determined to be jurisdictional by the U.S. Army Corps of Engineers would be mitigated for by Caltrans pursuant to the Clean Water Act.
- Caltrans would coordinate with the California Department of Fish and Wildlife to develop a compensatory mitigation plan consistent with the U.S. Army Corps of Engineers and the Environmental Protection Agency's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 Code of

Federal Regulations Parts 325 and 332 and 40 Code of Federal Regulations Part 230).

- Caltrans would apply appropriate compensatory ratios for the loss of habitat determined during coordination and consultation with the U.S. Fish and Wildlife Service and in cooperation with the California Department of Fish and Wildlife. Based on formal consultation with the U.S. Fish and Wildlife Service, Caltrans plans to mitigate for permanent impacts at a 5:1 compensation ratio, indirect impacts will be compensated at a 1.75:1 ratio, and temporary impacts with be compensated for at a 1.1:1 ratio.
- Caltrans' preferred method of compensation for impacts would be to purchase credits at a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved mitigation bank, if one is available within the project service area prior to the start of construction. However, if a bank is not available within the project service area, then permittee-responsible mitigation would be completed.

Wetlands Only Practicable Alternative Finding

This section is pursuant to Executive Order 11990, Protection of Wetlands.

Alternatives

When compared to the other proposed viable build alternative, Alternative 4 would impact the least amount of wetlands within the project area, approximately 2.78 acres of permanent impacts compared to 4.75 acres of permanent impact for Alternative 2. See Table 2.26 above for a summary of impacts to wetlands under each alternative. Potential impacts to vernal pools are shown separately from potential impacts to wetlands, however these numbers combine to result in the total permanent impacts to wetlands for each Alternative. No impacts to wetlands would occur under the No-Build Alternative, but that alternative does not meet the purpose and need of the project.

Measures to Minimize Harm

Alternative 4 was designed to minimize impacts to wetlands within the project footprint. Best Management Practices and avoidance and minimization measures will be implemented for the protection of wetlands. See the Avoidance, Minimization, and Mitigation section above.

Finding

Based on the above considerations, it was determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

2.3.3 Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant species.

"Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. See Section 2.3.5 Threatened and Endangered Species in this document for more information about these species.

This section of the document discusses all other special-status plant species, including the California Department of Fish and Wildlife species of special concern, the U.S. Fish and Wildlife Service candidate species, and the California Native Plant Society rare and endangered plants.

Regulatory requirements for the Federal Endangered Species Act can be found at 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. Regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code Sections 1900-1913 and the California Environmental Quality Act, California Public Resources Code, Sections 2100-21177.

Affected Environment

A Natural Environment Study for the project was completed in December 2015, with a Revised Natural Environment Study completed in October 2019. A Botanical Report was completed in August 2015. Field surveys, literature reviews, and database searches were conducted to identify special-status species and biological resources that may require further evaluation. Caltrans conducted floristic surveys using the California Department of Fish and Wildlife "Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities," dated November 24, 2009. Focused botanical surveys were conducted for target species during the 2015 blooming season. Access was not granted to all properties for the completion of field surveys. Attempts to locate reference sites were made, but many locations were either on private property, prohibitively distant, or unable to be found.

In biology, reference sites or reference populations are groups of individuals belonging to the same species that live in the same region at the same time. When special-status plants are known to occur in the type(s) of habitat present in the project area, the biologists would try to observe reference sites (nearby accessible occurrences of the plants) to determine whether those species are identifiable at the time of the

survey and to obtain a visual image of the target species, associated habitat, and associated natural community.

The database query included the Sacramento U.S. Fish and Wildlife Service, Information for Planning and Conservation (IPaC) online system, the California Natural Diversity Database (CNDDB), and the California Native Plant Society Electronic Inventory of Rare and Endangered Plants.

The database query resulted in a find of 19 special-status plant species that may be present within the biological study area for the project, but only 15 were determined to have a potential to occur within the proposed project impact area. Five of the 19 special-status plant species are federally or state threatened and endangered, and are discussed in Section 2.3.5 Threatened and Endangered Species. The remaining 10 plant species are discussed in this section.

Caper-fruited Tropidocarpum

The caper-fruited tropidocarpum (*Tropidocarpum capparideum*) is an annual herb of the mustard family (Brassicaceae) and is a California Native Plant Society 1B.1 plant. This species is found in alkaline soils on low hills and in valleys in the northwestern portion of the San Joaquin Valley and the outer south Coast Ranges. This spoon-shaped flower is yellow, with occasionally a hint of purple.

This species was not observed during the 2015 botanical surveys, and a reference population was not visited. The only documented occurrence of this species in proximity to the Action Area is in a non-specific area that refers to the City of Fresno and is dated 1930. There are no documented occurrences of this species in Madera County, and the next closest is at Fort Hunter Liggett in Monterey County.

Therefore, because there are no known recent occurrences for this species in Fresno or Madera counties, and no known documented occurrences of this species within 5 miles of the study area, this species is not expected to occur on the project site.

Dwarf Downingia

The dwarf downingia (*Downingia pusilla*) is a California endangered annual herb and a member of the bellflower family (Campanulaceae) and is a California Native Plant Society 2B.2 plant. The species is found within vernal pool habitat, within the northern San Joaquin Valley, north to the Sacramento Delta and along the Coast Ranges. The species has been found on alluvial fans, basin rims, high terraces and sediments with acidic soils. The plant has small white-to-pale-blue flowers measuring 0.9 to 0.16 inch, and its stem grows about 4 to 15 inches.

No reference populations of this species were visited. Protocol-level botanical survey site visits were completed in 2015, and the dwarf downingia was not observed in the Action Area. There is only one documented occurrence of this species in Fresno County dated in 1979 along Auberry Road. There are no documented occurrences of the dwarf downingia in Madera County, and the next closest is in Merced County.

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is a California rare plant throughout its range and a member of the water-plantain family (Alismataceae). It is a California Native Plant Society 1B.2 plant. This species occupies freshwater marsh habitats associated with the shallow margins of small lakes, ponds and sluggish waters of sloughs, slow creeks, rivers, canals, and ditches throughout the Central Valley. It ranges from Kern County to Shasta County, but has been extirpated (eliminated) through much of its range in the Central Valley. This emergent species produces linear elongate leaves that measure 5.5 to 9.8 inches long and a branched whorl of white flowers, less than a half-inch in size, from May through October. Limited data exists on the biology or ecology of the species but, based on currently known biology for the species, it is likely to occur in areas that contain permanent water features.

Protocol-level botanical survey site visits were completed in 2015, and Sanford's arrowhead was not identified in the Action Area. Reference populations of this species were observed in early-stage development and in full bloom in May and June at Antelope Station Park and on Roseville Road in the Sacramento Valley, respectively. However, no local reference populations were visited near the Action Area.

The closest documented reference population of Sanford's arrowhead was approximately 3.5 miles south of the Action Area. The last observation of the species at that site was in 1953. The site was surveyed again in 1980, but no Sanford's arrowhead plants were found. In 2017, 13 new occurrences of Sanford's arrowhead were documented east of Sanger, Parlier, and Reedley, but of these 13, the closest is approximately 23 or more miles southeast of the Action Area.

Shining Navarretia

The shining navarretia (*Navarretia nigelliformis* ssp. radians) is an annual member of the phlox family (Polemoniaceae) and is a California Native Plant Society 1B.2 plant. Distribution of this species is around the Central Coast plains and eastern Merced County, with populations tending to form scattered small colonies of fewer than 50 plants. This species is known to occur in vernal pools and clay depressions. The shining navarretia has semi-erect branched stems that extend out 3.5 to 12 inches long, with small clustered groups of yellow-spotted flowers that bloom between May and July.

No reference population was visited for this species. Protocol-level botanical survey site visits were completed in 2015, and the shining navarretia was not observed in the Action Area. However, another species of *Navarretia*, *N. pubescens*, was identified in the Action Area in non-native grassland habitat north of Avenue 15.

There are several documented occurrences of this species in Fresno and Madera counties. However, all occurrences (four) within the vicinity of the Action Area, are dated 1927, 1938, 1943, and 1952. The remaining occurrences (six), which are dated 1957, 1967, 2003, 2016, and two occurrences from 2019, are all located in the Diablo Range, between approximately 68 to 90 miles southwest of the Action Area.

Spiny-sepaled Button Celery

The spiny-sepaled button celery (*Eryngium spinosepalum*) is an annual or perennial member of the carrot family (Apiaceae) and is a California Native Plant Society 1B.2 plant. This species inhabits mostly vernal pools and vernal pool complexes in the San Joaquin Valley and adjacent foothills, though it can also be found in vernal pools, wetlands, and wetland-riparian areas. This species grows in northern hardpan and claypan vernal pools, roadside ditches, depressions, and swales in annual grassland, often associated with upland grasses and oak woodland. It can be described as stout, with branching stems reaching 11 to 30 inches tall, with tiny white petals that form narrow oval tapered-shape ends.

The species was identified within the Action Area during the 2015 botanical surveys and wetland delineation surveys. There is habitat for this species in the on-site vernal pools, seasonal wetlands, and seasonal wetland swales.

Brassy Bryum

The brassy bryum (*Bryum chryseum*) is a newly reported species of bryophyte moss that belongs to the Bryaceaea family. Brassy bryum is ranked 4.3 on the California Native Plant Society rare and endangered plant inventory. This species is native to California and grows in openings in cismontane woodlands, valley and foothill grasslands, and chaparral habitats. The first occurrence of this species was documented in the Mayacamas Range of eastern Mendocino County. Another observation was documented approximately 7.75 air miles northwest of the Action Area.

No reference population of this species was visited. Protocol-level botanical survey site visits were completed in 2015, and this species was not identified in the Action Area during the 2015 surveys. There may be suitable habitat for it in the 471.42 acres of non-native grassland habitat, mainly located north of Avenue 15 and south of Avenue 12, on the east side of the highway. Therefore, there is a potential for this species to be present in the Action Area.

Ewan's Larkspur

Ewan's larkspur (*Delphinium hansenii* ssp. *ewanianum*) is a California Native Plant Society 4.2 plant of limited distribution. It is a member of the buttercup family (Ranunculaceae). Ewan's larkspur is a single erect stem that can grow up to 51 inches and produces violet-purple to maroon flowers that bloom between March and May. Distribution information for the species is limited; occurrences have noted the species in soils that are composed of sedimentary or igneous rock and on Mima mounds, a type of soil formation (small hills a few feet high) associated with northern hardpan soils.

No reference populations of this species were visited. Protocol-level botanical survey site visits were completed in 2015, and Ewan's larkspur was not observed in the Action Area. There are approximately 10 documented occurrences of the species in the vicinity of the Action Area, but most are dated in the 1930s (five occurrences), with others dated 1955, 1959, 1969, 2003, and 2019. One occurrence from 1932 was

observed about 1.5 miles north of the Action Area; the 2003 occurrence was observed about 16 miles northeast of the City of Madera and east of Road 209; the 2019 occurrence was observed north of Hildreth Road, 15 or more miles north of the Action Area. Ewan's larkspur is not expected to be present within the Action Area.

Hoover's Calycadenia

Hoover's calycadenia (*Calycadenia hooveri*) is a California Native Plant Society 1B.3 California rare plant. It is a member of the tarweed tribe in the sunflower family (Asteraceae). This species inhabits rocky outcrops composed mostly of Ione sandstone, found in the northeastern San Joaquin Valley and Sierra Nevada foothill annual grasslands and woodlands. The species, first identified in 1975, displays distinctive features that include an erect stem that grows up to 23 inches with several slender spreading branchlets and delicate white-rayed flowers.

A reference population was not visited for this species. Protocol-level botanical survey site visits were completed in 2015, and Hoover's calycadenia was not observed in the Action Area. There are only two documented occurrences of this species within the vicinity of the Action Area. The closest observation is dated 2007 and is about 1.5 miles east where it was found growing in cracks in thin soils on rocky outcrops. The second occurrence within Madera County is dated 1976 and is more than 16 miles northwest of the Action Area near the town of Daulton, where it was also found growing on rocky outcrops. However, this species is not expected to occur within the project footprint because there are no areas with potentially suitable rocky outcrops present.

Hoover's Cryptantha

Hoover's cryptantha (*Cryptantha hooveri*) is an annual herbaceous member of the forget-me-not family (Boraginaceae) and is endemic to California. This species is assumed "extirpated," or eliminated completely, in California and rare or extinct elsewhere. It grows in valley and foothill grassland and inland dune habitats with coarse sandy soils.

Surveys for Hoover's cryptantha were completed during the 2015 bloom period, but this species was not identified. Only two occurrences within Madera County are documented, dated 1935 and 1939. No existing reference populations of this species are known.

California Satintail

The California satintail (*Imperata brevifolia*) is a California Native Plant Society 2B.1 plant. It is a native perennial rhizomatous herb and member of the grass family. The species is typically found in moist habitats, such as chaparral, coastal scrub, meadows, stream banks, and floodplains. Its current range extends from Imperial to Butte counties. The California satintail has an erect stem with flat, blade-like leaves that extend about 6 to 20 inches. It blooms dense white-silky hair-like flowers between September and May.

No reference population was visited for this species. Protocol-level botanical survey site visits were completed in 2015, and California satintail was not observed in the Action Area. There are three documented occurrences of this species in Fresno County, but none of them is recent. The closest documented occurrence was about 5 miles south of the Action Area and dated 1893. The second was about 33 miles southeast of the Action Area and dated 1933. The third was about 24 miles southeast of the Action Area and dated 1970. There are no other documented occurrences of this species within Fresno County, and none have been reported in Madera County.

Environmental Consequences

The spiny-sepaled button celery was identified during the wetland delineation surveys in May 2015. No caper-fruited tropidocarpum, dwarf downingia, Sanford's arrowhead, shining navarretia, brassy bryum, Ewan's larkspur, Hoover's calycadenia, Hoover's cryptantha, or California satintail was identified within the Action Area during the 2015 botanical surveys.

Based on the existing affected environment, the project is not expected to have an effect on potentially suitable habitat for Sanford's arrowhead and brassy bryum. The caper-fruited tropidocarpum, dwarf downingia, shining navarretia, Ewan's larkspur, Hoover's calycadenia, Hoover's cryptantha, and California satintail are not expected to be present within the project impact area.

Sanford's Arrowhead

Though the likelihood of this special-status species occurring on-site is low, there is potentially suitable habitat for Sanford's arrowhead within the impact area for Alternative 2. Therefore, Alternative 2 has the potential to permanently affect 1.15 acres and temporarily affect 0.68 acre of potentially suitable habitat.

There is potentially suitable habitat for the Sanford's arrowhead within the impact area for Alternative 4. Therefore, Alternative 4 completed in two phases has the potential to permanently affect 3.2 acres and temporarily affect 0.1 acre of potentially suitable habitat.

Spiny-sepaled Button Celery

This special-status species was identified on-site. Within the impact area for Alternative 2, there is potentially suitable habitat for the spiny-sepaled button celery. Therefore, Alternative 2 has the potential to permanently affect 4.75 acres and temporarily affect 2.95 acres of potentially suitable habitat.

There is potentially suitable habitat for the spiny-sepaled button celery. Therefore, construction of Alternative 4 in two phases has the potential to permanently affect 2.78 acres and temporarily affect 3.10 acres of potentially suitable habitat.

Brassy Bryum

Though the likelihood of this special-status species occurring on-site is low, there is potential suitable habitat for the brassy bryum within the impact area for Alternative 2.

Therefore, Alternative 2 has the potential to permanently affect 80.66 acres and temporarily affect 42.49 acres of potentially suitable habitat.

There is potentially suitable habitat for the brassy bryum. Therefore, construction of Alternative 4 in two phases has the potential to permanently affect 104.67 acres and temporarily affect 54.34 acres of potentially suitable habitat.

Avoidance, Minimization, and/or Mitigation Measures

The spiny-sepaled button celery was identified within the project impact area. Potentially suitable habitat for Sanford's arrowhead and brassy bryum were also identified in the project impact area. The following measures would be implemented to ensure that no effects occur to these special-status species:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans right-of-way once Caltrans biologists are able to access all properties within the Action Area. If these species are observed, they would be avoided and protected with an Environmentally Sensitive Area if possible. If avoidance is not possible, additional impact minimization measures may be implemented, which could include the collection and stockpiling of the top 4-6 inches of soil for re-application once construction is complete, with the goal of preserving this species spores within the soil.
- Work will be conducted outside the rainy season when flows are absent or low.
- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.
- Any portions of sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be identified on the Construction Plans and included in the Plans, Specifications, and Estimates section of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.

- A qualified biologist would be present during initial ground disturbance, including during clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals), would be restricted to the designated construction staging areas.
- Best Management Practices (BMPs) were included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.
    - Installation of measures to ensure that water quality is protected, both during and after construction.
    - Installation of measures to prevent long-term erosion occurring after construction is complete.
- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

2.3.4 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5. All other special-status animal species are discussed here, including the California Department of Fish and Wildlife fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration's Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Section 3503 of the California Fish and Game Code prohibits the killing of birds and the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Typical violations include the destruction of active bird and raptor nests as a result of tree removal and the failure of nesting attempts (i.e., loss of eggs or young) as a result of the disturbance of nesting pairs caused by nearby human activity.

Section 3513 prohibits any take or possession of birds that are designated by the Migratory Bird Treaty Act as migratory nongame birds, except as allowed by federal rules and regulations pursuant to the Migratory Bird Treaty Act.

Affected Environment

A Natural Environment Study for the project was completed in December 2015, and a Revised Natural Environment Study was completed in 2019. Caltrans conducted field surveys from December 2014 to July 2016 and completed database searches to identify special-status species and biological resources that may require further evaluation. The database query included the Sacramento U.S. Fish and Wildlife Service, Information for Planning and Conservation (IPaC) online system and the California Natural Diversity Database (CNDDB). Not all access was granted to properties for field surveys.

Caltrans biologists determined that 13 animal species could be affected by the proposed Build Alternatives. Of the 13 animal species identified, six animal species are federally or state threatened and endangered, and are discussed in Section 2.3.5 Threatened and Endangered Species. The remaining seven animal species and their habitats within the project corridor are discussed in this section.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a California species of special concern. It is the only owl in North America that nests in underground burrows, inhabiting old rodent burrows (typically that of the California ground squirrel), but are capable of digging their own. Their natural habitat consists of open dry annual or perennial grasslands, deserts, or open scrublands with low vegetation, soils suitable for digging, and a suitable prey base of burrowing rodents, small reptiles, and insects. Burrowing owls may occur in some agricultural areas, ruderal grassy fields, vacant lots and pastures if the vegetation is suitable and there are usable burrows and foraging habitat near.

The burrowing owl was not seen in the project study area during the project surveys. The nearest California Natural Diversity Database observation was recorded in 2000 at Madera Pools within the project limits. Potential breeding habitat for the burrowing owl exists within non-native grassland north of Avenue 15 and south of Avenue 12, but the species prefers wide open habitat with minimal disturbance. Because the intersections at Avenue 15 and Avenue 12 are highly traveled, have high noise disturbance and human presence, they would not provide suitable breeding habitat for the species. However, marginal foraging habitat may be present within the grasslands and any recently disked oat fields.

Pallid Bat and Western Mastiff Bat

The pallid bat (*Anrozous pallidus*) is a California species of special concern and a member of the Vespertilionidae family. It is most common in open dry habitats with rocky areas and day roosts in caves, crevices, mines, and sometimes hollow trees where it is protected from high temperatures, though a nearby water source is necessary. Pallid bats have been known to inhabit highway bridge structures, especially those near agricultural fields.

The western mastiff bat (*Eumops perotis*) is a California species of special concern and a member of the Molossidae family. It resides in the southeastern San Joaquin Valley and the Coast Ranges in habitats ranging from conifer woodlands to annual and perennial grasslands or urban environments where open, semi-arid habitats occur. The species also roosts in bridge highway structures and in crevices of cliff faces, high buildings, trees, and tunnels.

An unidentified population of bat species was seen roosting within the cement structure of the Lateral 6.2 canal in May 2015. No other bat species were seen in the rest of the project area. The nearest observed California Natural Diversity Database record of the pallid bat was found in 1979 about 12.5 miles northeast of the study area, near the San Joaquin Experimental Range. The nearest observed California Natural Diversity Database record of the western mastiff bat was found within 2 miles of the project study area in 1994, just off State Route 145.

Foraging habitat for these bat species is in open areas, while roosting habitat can include buildings, rocks, caves, bridges and trees. The canals and eucalyptus trees near the Madera Lateral 6.2 canal may serve as marginal habitat, and the non-native grasslands, cultivated oat fields, orchards, and vineyards may provide suitable foraging habitat.

Western Spadefoot Toad

The western spadefoot toad (*Spea hammondii*) is a California species of special concern. This small nocturnal toad is highly terrestrial, entering water only to breed. It inhabits a variety of habitats, but requires temporary rain pools or vernal pools for breeding. It was historically distributed throughout the Central Valley, Coast Ranges, and coastal lowlands from San Francisco Bay southward to Mexico at elevations of 3,000 feet.

During the focused plant and animal surveys conducted prior to the completion of the Natural Environment Study in December 2015, no western spadefoot toads were found within the Action Area. However, the species was later found within the Action Area during surveys conducted for the vernal pool fairy shrimp in March and April 2016. In addition, there are approximately 50 occurrences of this species, ranging in date from 1992 to 2018, within an approximate 10-mile radius of the Action Area.

The Action Area contains suitable upland burrowing habitat for this species in the non-native grasslands north of Avenue 15 and southeast of Avenue 12, cultivated oat fields, and along the western fringe of the Madera Pools Mitigation Bank site. All suitable habitat contains interspersed aquatic resources, and most are likely to provide suitable breeding habitat during years of average rainfall.

American Badger

The American badger (*Taxidea taxus*), a California species of special concern, is uncommon, but can be found throughout most of the state, except for the northern north coast area. The badger is most abundant in drier open stages of most shrub, forest, and herbaceous habitats. American badgers dig burrows in friable (crumbly) soils for cover and frequently use old burrows. Most habitat for the American badger has been converted to urban and agricultural development, especially within the San Joaquin Valley.

No American badgers were found in the Action Area during the 2015 surveys. In 2017, one of the project biologists observed a dead badger on State Route 41 at the intersection with Bellview Road, about 3-4 miles north of the Action Area. The nearest recorded California Natural Diversity Database occurrence of an American badger was approximately 4 air miles west of the Action Area and dated 2017.

Non-native grassland areas north of Avenue 15 and southeast of Avenue 12 may contain potentially suitable denning habitat for the American badger. However, due to the presence of heavy traffic on the highway and proximity to human presence, these areas are not expected to be suitable for denning. Potentially suitable foraging habitat is likely to be present in the non-native grassland areas because there is a large population of ground squirrels.

Northern Harrier

The northern harrier (*Circus hudsonius),* a California species of special concern, occupies a variety of open habitats including grasslands, wetlands, marshlands, swamplands, riparian scrub, coastal scrub, old pastures, and cultivates sites. While most of California is considered non-breeding territory for northern harriers, birds along the coast and in the Central Valley are frequently year-round residents.

One northern harrier was seen in the Action Area during the project surveys. However, there are no documented occurrences of this species in Madera County. The nearest observation was made in Panoche Hills in Fresno County in 2001.

Potentially suitable foraging and nesting habitat is present in non-native grasslands north of Avenue 15 and southeast of Avenue 12 and cultivated oat fields.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*), a California species of special concern, occurs in broadleaved upland forest, savannah, pinyon-juniper woodland, Joshua tree, riparian woodland, desert oasis, Mojavean desert scrub, Sonoran desert scrub, and desert wash habitats. However, loggerhead shrikes prefer open habitat for hunting and perch on barbed wire fences, fence posts, power lines, or any other suitable elevated location where they can scan the ground for prey. They are year-round residents throughout much of their range, including within the Central Valley.

Loggerhead shrikes were seen in the Action Area during the project surveys. However, there are no documented occurrences of this species in Madera County. The nearest documented observation was between Huron and Kettleman City in Fresno County in 2001.

Potentially suitable nesting habitat may be present in the eucalyptus trees north of the Friant-Madera canal and south of the Madera Lateral 6.2 canal. Foraging habitat is also present in the Action Area in non-native grasslands north of Avenue 15 and southeast of Avenue 12, the western fringe of the Madera Pools Mitigation Bank site, and cultivated oat fields.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) is a treaty with Canada, Mexico and Japan that makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. According to Sections 3503 and 3513 of the California Fish and Game Code, the killing of birds and the destruction of any nest, egg, or nestling are prohibited.

Some of the avian species seen in the Action Area include the western meadowlark (*Sturnella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*), western kingbird (*Tyrannus verticalis*), Brewer's blackbird (*Euphagus cyanocephalus*), red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and cliff swallow (*Petrochelidon pyrrhonota*).

Environmental Consequences

About 1,040 acres of land within the Action Area were studied for potential impacts to species discussed in this section.

Burrowing Owl

No direct impacts to burrowing owls are expected from the project. Each Build Alternative would also implement Caltrans Standard Special Provisions, which require a "Worker Environmental Awareness Training" for worksite personnel. The incorporation of these measures in the construction contract would further ensure that

impacts to the species are avoided. However, each Build Alternative has the potential to convert potentially suitable foraging habitat, which would directly affect the species.

Alternative 2 has the potential to permanently affect 143.47 acres and temporarily affect 71.93 acres of potentially suitable breeding and foraging habitat for the burrowing owl.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable breeding and foraging habitat for the burrowing owl.

Pallid Bat and Western Mastiff Bat

An unidentified species of bat was observed in the Action Area in 2015. It may have been the pallid bat. Therefore, there is a potential for individual pallid bats to be directly impacted by becoming injured or killed because of the project. Permanent and temporary loss of potentially suitable roosting and foraging habitat could also occur.

Alternative 2 has the potential to permanently affect 200.81 acres and temporarily affect 79.51 acres of potentially suitable foraging and roosting habitat for bat species.

The phased construction of Alternative 4 has the potential to permanently affect 199.13 acres and temporarily affect 74.80 acres of potentially suitable foraging and roosting habitat for bat species.

Western Spadefoot Toad

Each Build Alternative would also implement Caltrans Standard Special Provisions, which require a “Worker Environmental Awareness Training” for worksite personnel, preconstruction surveys, and use of biological monitoring. Implementation of these measures would ensure that impacts to individuals are minimized. However, each Build Alternative would convert potentially suitable breeding and foraging habitat and could directly impact individual western spadefoot toads.

Alternative 2 has the potential to permanently affect 143.47 acres and temporarily affect 71.93 acres of potentially suitable breeding habitat and habitat within the wetland areas for the western spadefoot toad.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable foraging and roosting habitat for the western spadefoot toad.

American Badger

No direct impacts to individual American badgers are expected. However, the project would permanently and temporarily impact potentially suitable habitat, which would affect this species.

Alternative 2 has the potential to permanently affect 83.99 acres and temporarily affect 45.96 acres of potentially suitable habitat for the American badger.

The phased construction of Alternative 4 has the potential to permanently affect 104.67 acres and temporarily affect 54.34 acres of potentially suitable habitat for the American badger.

Northern Harrier

Each Build Alternative would implement Caltrans Standard Special Provisions, which require awareness training for worksite personnel, preconstruction surveys, protective buffers for active nests, and the use of biological monitoring. Implementation of these measures would ensure that impacts to individuals are minimized. However, each Build Alternative would convert potentially suitable nesting and foraging habitat.

Alternative 2 has the potential to permanently affect 143.47 acres and temporarily affect 71.93 acres of potentially suitable nesting and foraging habitat within the wetland areas for the northern harrier.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable nesting and foraging habitat for the northern harrier.

Loggerhead Shrike

Each Build Alternative would implement Caltrans Standard Special Provisions, which require awareness training for worksite personnel, preconstruction surveys, protective buffers for active nests, and the use of biological monitoring. Implementation of these measures would ensure that impacts to individuals are minimized. However, each Build Alternative would convert potentially suitable nesting and foraging habitat.

Alternative 2 has the potential to permanently affect 144.41 acres and temporarily affect 71.93 acres of potentially suitable nesting and foraging habitat for the loggerhead shrike.

The phased construction of Alternative 4 has the potential to permanently affect 176.62 acres and temporarily affect 72.31 acres of potentially suitable nesting and foraging habitat for the loggerhead shrike.

Migratory Birds

It is anticipated that 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.

Avoidance, Minimization, and/or Mitigation Measures

The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters would be implemented to further avoid and minimize impacts to potential habitat for the burrowing owl, western spadefoot toad, pallid bat, western mastiff bat, American badger, and migratory birds. In addition, the following are Standard Special Provisions that would ensure that impacts to species are avoided:

Burrowing Owl

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat would also benefit this species.

Pallid Bat and Western Mastiff Bat

- A qualified biologist shall conduct visual and acoustic bat surveys to determine if bats are currently using the Action Area and to determine if additional avoidance and minimization measures are needed. Additional avoidance and minimization measures may include but are not limited to the installation of bat exclusion measures in areas used for roosting. Any exclusion measures would be implemented in coordination with the California Department of Fish and Wildlife.

No compensatory mitigation is proposed; however, if feasible, roosting habitat may be included in the structure that will be constructed over the Lateral 6.2 canal. In addition, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit these species. In addition, due to requirements for the reduction of greenhouse gases, all trees removed to construct the project must be mitigated. Although the locations and replacement species have not been determined at this time, this too is expected to benefit these species by replacing habitat.

Western Spadefoot Toad

- Pre-construction surveys for this species would occur during the breeding season prior to construction, at the time when spadefoots are observed emerging in nearby areas of suitable habitat. Any spadefoots observed in the project footprint may be relocated to areas of suitable habitat beyond the project footprint, to minimize impacts to any on-site individuals. Any relocation efforts would be conducted in coordination with the California Department of Fish and Wildlife.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to California tiger salamander habitat would also benefit this species.

American Badger

- Prior to construction, surveys would be completed in areas of potentially suitable habitat to confirm that no badgers are using the Action Area for denning. If any dens that resemble those of the badger are observed, Caltrans would coordinate additional avoidance and minimization measures with the California Department of Fish and Wildlife.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat would also benefit this species.

Northern Harrier

- Preconstruction migratory nesting bird surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.
- If any nesting pairs of northern harriers are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds. Measures may include but are not limited to:
    - The establishment of a protective Environmentally Sensitive Area (ESA) and a 500-foot "no-walk" buffer.
    - A biological monitor would be present during construction activities that occur in close proximity to the nest.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat would also benefit this species.

Loggerhead Shrike

- Preconstruction migratory nesting bird surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.
- If any nesting pairs of loggerhead shrike are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds. Measures may include but are not limited to:
    - The establishment of a protective Environmentally Sensitive Area (ESA) and a 500-foot "no-walk" buffer.
    - A biological monitor would be present during construction activities that occur in close proximity to the nest.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat would also benefit this species.

Migratory Birds

- Clearing and grubbing will be completed outside of the nesting season, unless otherwise deemed unfeasible, to avoid unnecessary impacts to migratory birds.
- A qualified biologist would conduct preconstruction surveys for migratory birds should construction begin within the nesting season (February 1 through September 30), or prior to any clearing and grubbing during the nesting season.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any clearing,

grubbing, or ground-breaking activities to review the importance of avoiding impacts to nesting migratory birds observed on the project.

- Any nests discovered during the migratory bird clearance surveys will be Environmentally Sensitive Area (ESA) protected, with an appropriate "no-work" buffer, to protect young birds until they are able to fledge from the nest.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The main 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, 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, a Letter of Concurrence and/or documentation of a No Effect finding. 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 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 Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The 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 the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

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

Affected Environment

A Natural Environment Study was completed for the project in December 2015, and a Revised Natural Environment Study was completed for the project in 2019. On November 5, 2014, Caltrans biologists initiated informal consultation with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and U.S. Army Corps of Engineers to discuss the proposed project and its potential effects on sensitive species and resources. Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service on December 14, 2018. The U.S. Fish and Wildlife Service issued a Biological Opinion for the project on August 29, 2019. For details regarding consultation to date with the above agencies, see Section 4.2 Consultation with Responsible/Coordinating Agencies/Interested Parties.

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 September 18, 2014 (see Appendix F), and has been updated regularly throughout the project studies. Caltrans Federal Endangered Species Act Determinations are listed in Appendix J. Based on in-office research (California Native Plant Society, the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service) and field surveys, Caltrans biologists determined that there were potentially six animal species and five plant species listed as federally or state threatened or endangered that may be affected by the proposed project. Of these 11 species, only three—Swainson's hawk, vernal pool fairy shrimp, and San Joaquin Valley orcutt grass—have been observed during biological surveys to date; however, because potentially suitable habitat for six more species may be present within the project footprint, they could also be present.

Animal Species

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, where it spends most of its life underground in ground squirrel or gopher burrows. It emerges after rainfall and uses vernal pools for breeding.

The Action Area contains U.S. Fish and Wildlife-designated critical habitat along the east side of the State Route 41 corridor and extending south (see map in Appendix I). The central population of California tiger salamanders requires standing bodies of fresh water, including natural and human-made ponds, vernal pools, and other ephemeral or permanent water bodies that typically support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall. These salamanders require upland habitats adjacent and accessible to and from breeding ponds that contain small mammal burrows or other underground habitat that California tiger salamanders depend on for food, shelter, and protection from the elements and predation. They also require accessible upland dispersal habitat between occupied locations that allow for movement between such sites.

Designated critical habitat for the California tiger salamander overlaps with the southern portion of the Action Area on the east side of State Route 41 in non-native grasslands and cultivated oat fields. Also, there are drainage basins within designated critical habitat on the east side of State Route 41 and south of the Madera Pools Mitigation Bank site. Caltrans expects at least some of the aquatic features in the on-site portions of designated critical habitat to provide suitable breeding habitat for California tiger salamanders. Although not all aquatic features are expected to hold water for a long enough duration to support breeding, they are expected to offer temporary aquatic habitat for salamanders.

Designated critical habitat in non-native grasslands and cultivated oat fields with small mammal burrows provide upland area for California tiger salamanders to use for shelter, feeding, and protection from predators and extreme temperatures. Therefore, the on-site aquatic and upland areas within designated critical habitat for California tiger salamanders are expected to contain the necessary physical and biological features to support the species.

No California tiger salamanders were observed during biological surveys conducted in 2015. However, 26 California tiger salamander occurrences have been documented within an approximate 5-mile buffer of the Action Area. Fifteen of these occurrences were recently documented within the past 17 years. Five of the recent occurrences took place within 1 mile of the Action Area, with one documented occurrence within the Action Area on the west side of State Route 41. Aquatic larval surveys were conducted in March 2016, and 16 aquatic larvae were found in the Action Area. Another aquatic larva was found during a subsequent survey in April 2016.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is a federally threatened freshwater crustacean found in vernal pools or vernal pool-like habitats within California and southern Oregon. Vernal pool habitat includes a range of pool types, from small clear sandstone rock pools to large murky alkaline grassland valley pools, but the species tends to prefer smaller pools with clear cool water. The species can co-occur with other vernal pool crustaceans and vernal pool plant species, but it rarely occurs in the same pools as other fairy shrimp species, often identified as the least numbered crustacean in the pond.

The northern portion of the project contains U.S. Fish and Wildlife-designated critical habitat for the vernal pool fairy shrimp (see map in Appendix I). The vernal pool fairy shrimp requires topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of flowing surface water in the swales connecting pools. These pools include depressional features including isolated vernal pools, with underlying restrictive soil layers that continuously hold water for a minimum of 18 days. As these features are inundated on a seasonal basis, they do not promote the development of wetland vegetation habitats typical of permanently flooded wetlands. The vernal pool fairy shrimp also require sources of food and structure within the pools consisting of organic and inorganic materials.

Surveys for the species conducted during the 2004/2005 wet season (conducted for a separate project), the 2015 dry season, and the 2015/2016 wet season identified federally listed vernal pool fairy shrimp in the Action Area. A total of 75 aquatic features were included in the surveys. However, based on project changes, only 61 of the 75 aquatic features are within the current extent of the Action Area. Sixteen of the aquatic features contained vernal pool fairy shrimp and, of those, 13 are located within the Action Area. Twenty-two of the aquatic features were not sampled due to being within designated critical habitat. Also, 55 of the aquatic features contain suitable habitat for vernal pool fairy shrimp.

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is a federally endangered and state threatened species. The species is one of the smallest canid species in North America, measuring about 31 inches long and about 12 inches tall. This species' range extends across most of the San Joaquin Valley from southern Kern County up to Alameda and Contra Costa counties, and the west side of San Joaquin County up to the east side of Stanislaus County as well as some valleys of the Coast Ranges in Monterey, San Benito, Santa Clara, San Luis Obispo and Santa Barbara counties. The largest population occurs in western Kern County, eastern San Luis Obispo County and the greater Bakersfield area.

The San Joaquin kit fox has proven to be a resilient species with habitat ranging from historical grasslands and shrublands to more disturbed areas such as oil fields, grazed pastures, fallow lands near irrigated row crops, orchards, vineyards, and some urban environments.

The closest dated occurrence of a San Joaquin kit fox to the Action Area was recorded as a roadside death in 1993, along State Route 99 south of the Herndon Avenue exit and 10 miles southwest of the Action Area.

Based on the most recent survey and documented occurrence data, San Joaquin kit foxes are considered to be extirpated from eastern Madera County. Although the species is also assumed to be extirpated from the western portion of the county, it is possible that during years of favorable conditions it may provide a link between core

and satellite populations that remain along the western edge of the Central and Sacramento valleys.

Focused surveys for the San Joaquin kit fox were not completed in the Action Area, and no observations of this species' dens, scat, or tracks were made during any of the biological surveys. Although San Joaquin kit foxes are not expected to occur within or close to the Action Area, the non-native grasslands may provide potentially suitable habitat for the species.

Swainson's Hawk

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 California 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. It soars at various heights in search of prey, catching insects and bats in flight, or walks on the ground to catch invertebrate prey.

A Swainson's hawk pair was identified during the 2015 nesting season in a eucalyptus tree on the north side of the Madera Canal. The nearest California Natural Diversity Database occurrence recorded for the Swainson's hawk was identified just northwest of the Madera Canal crossing.

The Action Area contains potentially suitable nesting habitat for Swainson's hawks within some of the trees that occur, such as the eucalyptus tree north of the Friant-Madera Canal, or possibly within the grove of eucalyptus trees south of the Lateral 6.2 canal on the west side of the highway, or within the orchard trees north and south of Avenue 12 on the west side of the highway. Most of the Action Area would provide suitable foraging habitat for this species. For example, non-native grasslands north of Avenue 15 and south of Avenue 12 contain a suitable rodent population, and the cultivated oat fields on the west and east sides of the highway across from and south of the Madera Pools Mitigation Bank site likely do as well.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is listed as a state threatened species and a California Species of Special Concern. Its abundance is greatest in the foothills surrounding the Central Valley of California, though breeding populations can be found in regions of Oregon, Washington and Nevada. The species is a permanent resident of California, but migrates during breeding season, usually mid-March through early August, and some during winter.

Ideal foraging conditions for the tricolored blackbird include agricultural areas that are shallow flood-irrigated, mowed, or grazed fields such as rice, alfalfa, irrigated pastures, cut grain fields below 6 inches, as well as annual grasslands, cattle feedlots, and dairies. These blackbirds also forage in remnant native habitats, including wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders.

Tricolored blackbirds were not seen within the Action Area during the 2015 surveys. The nearest recorded California Natural Diversity Database observation of the tricolored blackbird was in 2005 along State Route 145 and west of State Route 41.

There is no suitable breeding habitat for the species within the Action Area, but there may be suitable foraging habitat within the non-native grasslands, vernal pools, seasonal wetlands and swales, and cultivated oat fields.

Crotch Bumble Bee
The Crotch bumble bee (*Bombus crotchii*) is a state candidate endangered species. This species occurs mostly within California, with historical abundance in the Central Valley. It occurs in open grassland and scrub habitats and typically nests underground in abandoned rodent burrows, but can also nest above ground. Bees that nest above ground require undisturbed areas with nesting resources such as grass, hay, downed wood, or brush piles to provide shelter. Crotch bumble bees feed on nectar and pollen from a wide range of flowers such as milkweed, lupine, burclover, scorpionweed, dusty maiden, and sage, as well as commercial crops.

Focused surveys for the Crotch bumble bee were not conducted for the proposed project. The closest documented occurrence of a Crotch bumble bee to the Action Area was recorded about 2.5 miles south of the project along State Route 41 in 1899. There were two other occurrences 8 miles and 10 miles away from the Action Area in 1953 and 1982, respectively.

There may be potentially suitable habitat for this species in the Action Area. Suitable habitat includes non-native grasslands north of Avenue 15 and southeast of Avenue 12, which contain numerous ground squirrel burrows and some preferred plant life this species is known to pollinate.

Plant Species

Hartweg's Golden Sunburst
Hartweg's golden sunburst (*Pseudobahia bahiifolia*) is a federally endangered and state-endangered annual herb. It is a member of the sunflower family (Asteraceae) and is an endemic, native only to California within the Sierra Nevada foothills and eastern San Joaquin Valley. The species occurs almost entirely on non-native grasslands and mostly on soils that form Mima mounds (small hills a few feet high) at elevations between 50 to 460 feet.

Potentially suitable habitat for this species may be present north of Avenue 11 and southeast of the Avenue 12 intersection within non-native grasslands underlain by Rocklin soils. Mima mounds were not identified within these non-native grassland areas or any other areas within the Action Area.

Focused surveys were carried out during the 2015 bloom period, but Hartweg's golden sunburst was not identified. In 2010, the nearest population of the species was presumed present about 6 miles northeast of the project area near Millerton Lake State Recreation Area, but the site was not visited for a reference population.

Hairy Orcutt Grass

Hairy orcutt grass (*Orcuttia pilosa*) is a federally endangered and state-endangered annual grass. It is a member of the grass (Poaceae) family, endemic to California's vernal pool system, with populations in northeastern Sacramento Valley and the southern Sierra Nevada foothills. The species occurs in northern claypan and northern hardpan vernal pools but, similar to other vernal pool plant species, population size varies greatly depending on precipitation and weather conditions.

Designated critical habitat for this species is present throughout the north and south portions of the Action Area, but a large portion of its habitat has already been converted to agricultural land or is planned for future development (see map in Appendix I). Hairy orcutt grass requires topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of flowing surface water in the depressional features, providing for dispersal and promoting hydroperiods of adequate length in the pools. Hairy orcutt grass also requires depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.

Focused botanical surveys during the 2015 bloom period did not identify hairy orcutt grass within the Action Area. Nearby occurrences of the species were recorded in 2010 at the Madera Pools Mitigation Bank site, but no reference plants were found during the 2015 bloom period.

San Joaquin Valley Orcutt Grass

San Joaquin Valley orcutt grass (*Orcuttia inaequalis*) is a federally threatened and state-endangered member of the grass (Poaceae) family, restricted in distribution to the southern Sierra foothills vernal pool region. Designated critical habitat is present within the project study area, which has been determined to contain the physical and biological features for San Joaquin Valley orcutt grass survival (see map in Appendix I). Communities that support this species include northern claypan, northern hardpan, and northern basalt flow vernal pools.

Designated critical habitat is present within the southern, central, and northern portions of the Action Area. Hairy orcutt grass requires mounds and swales and depressions within surrounding uplands that have flowing surface water in the depressional features, providing for dispersal and promoting hydroperiods of adequate length in the pools. Hairy orcutt grass also requires depressional features including isolated vernal pools with underlying soil layers that become inundated during winter rains and are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species. Because these features receive water on a seasonal basis, they do not develop the wetland vegetation habitats typical of permanently flooded emergent wetlands.

Focused botanical surveys conducted during the 2015 bloom period did not identify San Joaquin Valley orcutt grass within the Action Area. However, this species was observed blooming on the adjacent Madera Pools Mitigation Bank site in 2015 when the site was visited for use as a reference population. It was also seen in the Action Area as an incidental species in May 2016.

Succulent (Fleshy) Owl's Clover

The succulent (fleshy) owl's clover (*Castilleja campestris* ssp*. succulenta*) is a federally threatened and state-endangered annual plant. It is a hemiparisitic (obtains nourishment from roots of other nearby plants) member of the snapdragon family (Scrophulariaceae). It occurs in the Sierra foothills vernal pool region on northern claypan and northern hardpan vernal pool soils, where it co-occurs with several native vernal pool plant species.

Focused botanical surveys conducted during the 2015 bloom period did not find the succulent owl's clover within the Action Area. The nearest population of the species occurs at the Madera Pools Mitigation Bank site, though a reference population was not observed at the Madera Pools Mitigation Bank site during the 2015 bloom period. Two additional occurrences of this species have been documented within 3 miles of the project site.

Designated critical habitat for the species is present within several portions of the Action Area (see map in Appendix I). Grassland areas north of Avenue 15 and southeast of Avenue 12 contain hardpan and claypan soils with vernal pools and wetlands that provide habitat for the species. Most land between Avenue 12 and Avenue 15 has been converted to agricultural use or commercial space and does not provide habitat for the species.

Grassland areas north of Avenue 15 and south of Avenue 12 are currently used as pastureland for grazing, which could result in too much disturbance for this species, depending on the grazing regime that is followed. In addition, the substantial presence of non-native species of grasses and forbs may also reduce the potential for this species to occur in the Action Area.

California Jewelflower

The California jewelflower (*Caulanthus californicus*) is a federally endangered and state-endangered annual herb and a member of the mustard family (Brassicaceae). It is common only to California's non-native grasslands, upper Sonoran subshrub scrub, cismontane juniper woodland or scrub communities in the San Joaquin Valley and requires soils that are sub-alkaline or sandy loam.

The Action Area south of Avenue 15 has potentially suitable soils for the California jewelflower, but a large portion of this land has been converted to agriculture or roadway. Potentially suitable soils also exist in the non-native grasslands on the southeast corner of Avenue 12, but the land is being used as pastureland for grazing, and weedy species of grasses and forbs are prominent. Therefore, the California jewelflower is not expected to be present in the Action Area.

Focused botanical surveys during the 2015 bloom period did not identify the California jewelflower within the Action Area. According to the California Natural Diversity Database, the most recent extant population is more than 80 miles southwest of the Action Area; therefore, no reference population was visited.

Environmental Consequences

Animal Species

California Tiger Salamander

Table 2.27 shows the acreage of impact expected from each Build Alternative. The impact areas for each Build Alternative include the proposed right-of-way for the alignment, including utility easements and detention basins.

Table 2.27 Impacts to California Tiger Salamander

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total area of aquatic and upland habitat	866.37 acres	866.37 acres	866.37 acres	866.37 acres
AQUATIC BREEDING IMPACTS (Non-Critical Habitat)				
Permanent	0.0 acre	3.71 acres	3.71 acres	0.0 acre
Temporary	0.0 acre	0.23 acre	0.23 acre	0.0 acre
TEMPORARY AQUATIC IMPACTS (Non-Critical)				
Permanent	4.14 acres	2.16 acres	1.09 acres	1.07 acres
Temporary	0.53 acre	0.79 acre	0.27 acre	0.52 acre
UPLAND IMPACTS (Non-Critical Habitat)				
Permanent	155.50 acres	149.19 acres	89.21 acres	59.98 acres
Temporary	46.83 acres	45.17 acres	27.88 acres	17.29 acres
AQUATIC BREEDING IMPACTS (Critical Habitat)				
Permanent	1.21 acres	0.0 acre	0.0 acre	0.0 acre
Temporary	2.55 acres	0.0 acre	0.0 acre	0.0 acre
TEMPORARY AQUATIC IMPACTS (Critical Habitat)				
Permanent	0.34 acre	0.38 acre	0.38 acre	0.0 acre
Temporary	2.41 acres	2.37 acres	2.37 acres	0.0 acre
UPLAND IMPACTS (Critical Habitat)				
Permanent	38.28 acres	40.06 acres	40.06 acres	0.0 acre
Temporary	27.19 acres	26.36 acres	26.36 acres	0.0 acre

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Some of the on-site vernal pools and hydrologic features within the Action Area are expected to provide suitable breeding habitat for California tiger salamanders. Likewise, other on-site vernal pools, seasonal wetlands and swales, and seasonal marsh habitat were initially thought to provide suitable breeding habitat during years of above-average rainfall; however, based on surveys conducted at the Madera Pools Mitigation Bank site in 2019, Caltrans determined these other hydrologic features provide only temporary aquatic habitat for salamanders moving between aquatic breeding ponds and upland sites. Due to the presence of ground squirrel and other

small mammal burrows, the on-site non-native grassland habitat, undeveloped residential and commercial lots, and agricultural areas consisting of vineyard, pistachio, and olive orchard, and cultivated oat fields are expected to provide suitable upland habitat.

Within the impact area for Alternative 2 are about 866.37 acres of potentially suitable habitat for the California tiger salamander. Alternative 2 would permanently affect 39.83 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 159.64 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat. Temporary impacts would include 32.15 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 47.35 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat.

Within the impact area for Alternative 4 are about 866.37 acres of potentially suitable habitat for the California tiger salamander. The phased construction of Alternative 4 would permanently affect 40.44 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 155.06 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat. Temporary impacts would include 28.73 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 46.19 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat.

Both Build Alternatives may also have indirect impacts to the California tiger salamander, which result when permanent or temporary impacts occur to at least half of an entire aquatic feature, making the remaining portion of the feature vulnerable to degradation over time.

Both Build Alternatives are expected to have permanent and temporary impacts to habitat for the California tiger salamander, and it is possible that individual California tiger salamanders could become injured or killed during construction of the project, which would meet the definition of take according to the California Endangered Species Act (see Section 2.3.5 Threatened and Endangered Species, Regulatory Setting). Therefore, due to the combined loss of both critical and non-California tiger salamander habitat and the potential for take of individual animals, Caltrans has determined the proposed project's preferred alternative (Alternative 4, Phased) May Affect, and is Likely to Adversely Affect this species.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination in regard to the preferred alternative (Alternative 4, Phased) on August 29, 2019.

Vernal Pool Fairy Shrimp

Table 2.28 shows the acreage of impact expected from each Build Alternative.

Table 2.28 Impacts to Vernal Pool Fairy Shrimp Habitat

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2

Total area of pools to be impacted	34.15 acres	34.15 acres	34.15 acres	34.15 acres
IMPACTS (Non-Critical Habitat)				
Permanent	2.32 acres	3.82 acres	2.76 acres	0.27 acre
Temporary	2.73 acres	2.98 acre	2.49 acres	0.05 acre
IMPACTS (Critical Habitat)				
Permanent	2.93 acres	0.79 acre	0.11 acre	0.68 acre
Temporary	0.45 acre	0.44 acre	0.21 acre	0.23 acre

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Vernal pool fairy shrimp habitat includes seasonal wetlands, seasonal wetland swales and vernal pools that would be directly and indirectly affected by each alignment. Designated critical habitat is determined by the U.S. Fish and Wildlife Service. The area that does not contain designated critical habitat is considered non-critical habitat.

There are about 34.15 acres of suitable habitat for the vernal pool fairy shrimp within the Action Area. Alternative 2 has the potential to permanently affect 2.93 acres of critical habitat and 2.32 acres of non-critical habitat for the vernal pool fairy shrimp. Temporary impacts would include 0.45 acre of critical habitat and 2.73 acres of non-critical habitat.

There are about 34.15 acres of suitable habitat for the vernal pool fairy shrimp within the Action Area. Phased construction of Alternative 4 has the potential to permanently affect 0.79 acre of critical habitat, and 3.82 acres of non-critical habitat. Temporary impacts would include 0.44 acre of critical habitat and 2.98 acres of non-critical habitat.

Both Build Alternatives may have indirect impacts to vernal pool fairy shrimp, which result when permanent or temporary impacts occur to at least half of an entire aquatic feature, making the remaining portion of the feature vulnerable to degradation over time.

Both Build Alternatives are expected to have permanent and temporary impacts to habitat for the vernal pool fairy shrimp, and it is possible that individual fairy shrimp could become injured or killed during construction of the project, which would meet the definition of take according to the California Endangered Species Act (see Section 2.3.5 Threatened and Endangered Species, Regulatory Setting). Therefore, due to the combined loss of both critical and non-critical vernal pool fairy shrimp habitat and the potential for take of individual animals, Caltrans has determined the proposed project's preferred alternative (Alternative 4, Phased) May Affect, and is Likely to Adversely Affect this species.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination regarding the preferred alternative (Alternative 4, Phased) on August 29, 2019.

San Joaquin Kit Fox
Table 2.29 shows the acreage of impact expected from each Build Alternative.

Table 2.29 Impacts to Potentially Suitable San Joaquin Kit Fox Habitat

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Acres of Potential Habitat	601.47 acres	601.47 acres	601.47 acres	601.47 acres
Acres of Permanent Impacts	137.62 acres	172.38 acres	110.7 acres	61.7 acres
Acres of Temporary Impacts	70.14 acres	71.29 acres	53.4 acres	17.9 acres

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Within the Action Area for the project corridor are about 601.47 acres of potentially suitable denning and foraging habitat for the San Joaquin kit fox. The Action Area contains open grassland areas mostly east of the existing State Route 41, north of Avenue 15 and southeast of Avenue 12.

Alternative 2 has the potential to permanently affect 137.62 acres and temporarily affect 70.14 acres of suitable breeding and foraging habitat for the San Joaquin kit fox.

The phased construction of Alternative 4 has the potential to permanently affect 172.38 acres and temporarily affect 71.29 acres of suitable breeding and foraging habitat for the San Joaquin kit fox.

Though no kit foxes were found during the 2015 surveys, both Build Alternatives would have permanent and temporary impacts to potentially suitable habitat. Therefore, due to lack of recent occurrences of the San Joaquin kit fox within the Action Area, the proposed project's preferred alternative (Alternative 4, Phased) May Affect, but is Not Likely to Adversely Affect the San Joaquin kit fox.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination regarding the preferred alternative (Alternative 4, Phased) on August 29, 2019.

Swainson's Hawk
Within the Action Area for the project corridor are about 730.66 acres of potentially suitable foraging habitat, and marginal nesting habitat, for the Swainson's hawk. Table 2.30 shows the acreage of impact expected from each Build Alternative.

Table 2.30 Impacts to Potentially Suitable Swainson's Hawk Habitat

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2

Total Acres of Potential Habitat	730.66 acres	730.66 acres	730.66 acres	730.66 acres
Acres of Permanent Impacts	149.46 acres	178.45 acres	114.73 acres	63.72 acres
Acres of Temporary Impacts	71.93 acres	72.31 acres	54.76 acres	17.55 acres

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Alternative 2 has the potential to permanently affect 149.46 acres and temporarily affect 71.93 acres of suitable foraging habitat and marginal nesting habitat for the Swainson's hawk.

The phased construction of Alternative 4 has the potential to permanently affect 178.45 acres and temporarily affect 72.31 acres of suitable foraging habitat and marginal nesting habitat for the Swainson's hawk.

Caltrans will be implementing its Standard Special Provisions. Implementation of these measures will ensure that project impacts will be prevented. Both Build Alternatives would have permanent and temporary impacts to potential foraging habitat within the grassland and oat fields, and to the marginal nesting habitat along the edges of the orchard and eucalyptus grove.

Tricolored Blackbird

Table 2.31 shows the acreage of impact expected from each Build Alternative.

Table 2.31 Impacts to Potentially Suitable Tricolored Blackbird Habitat

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Acres of Potential Habitat	656.64 acres	656.64 acres	656.64 acres	656.64 acres
Acres of Permanent Impacts	149.47 acres	172.99 acres	112.78 acres	60.21 acres
Acres of Temporary Impacts	71.93 acres	72.31 acres	54.76 acres	17.55 acres

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Within the Action Area for the project corridor are about 656.64 acres of potentially suitable foraging habitat for the tricolored blackbird.

Alternative 2 has the potential to permanently affect 149.47 acres and temporarily affect 71.93 acres of potentially suitable foraging habitat for the tricolored blackbird.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable foraging habitat for the tricolored blackbird.

Although no tricolored blackbirds were found within the biological study area, if the species should occur, the implementation of Caltrans Standard Special Provisions will

ensure that the potential impacts will be prevented. Both Build Alternatives would have permanent and temporary impacts to potentially suitable foraging habitat.

Crotch Bumble Bee
Table 2.32 shows the acreage of impact to potentially suitable habitat from each Build Alternative.

Table 2.32 Impacts to Potentially Suitable Habitat for Crotch Bumble Bee

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Acres of Potential Habitat	471.42 acres	471.42 acres	471.42 acres	471.42 acres
Acres of Permanent Impacts	83.99 acres	104.67 acres	47.06 acres	57.61 acres
Acres of Temporary Impacts	45.96 acres	54.34 acres	38.0 acres	16.34 acres

Within the Action Area are about 471.42 acres of potentially suitable habitat for the Crotch bumble bee.

Alternative 2 has the potential to permanently affect 82.99 acres and temporarily affect 45.96 acres of potentially suitable habitat for the Crotch bumble bee.

The phased construction of Alternative 4 has the potential to permanently affect 104.67 acres and temporarily affect 54.34 acres of potentially suitable habitat for the Crotch bumble bee.

If Crotch bumble bees are present on the project site, there is a potential for individuals to be directly impacted by construction-associated ground-disturbing activities, which could lead to mortality for individual bees or a colony. If habitat conditions are suitable for this species, the species would be further impacted by the loss and fragmentation of available habitat in the project area. If the species should occur, the implementation of Caltrans Standard Special Provisions will ensure that the potential impacts will be minimized.

Plant Species

Only one listed species—San Joaquin Valley Orcutt grass—was found in the Action Area. However, designated critical habitat present within the Action Area suggests that some of the species may be present during a year of normal precipitation. Caltrans initiated coordination with the California Department of Fish and Wildlife in November 2014 regarding the potential for take of state-listed species (see Appendix G). Coordination will continue when an incidental take permit is obtained for the project, prior to Ready to List (RTL) of the project.

California Jewel Flower

Based on the existing affected environment, the project is not expected to have an effect on the California jewel flower because the species is not expected to be present within the project impact area due to disturbance and a lack of recent occurrences near the study area.

Hartweg's Golden Sunburst
Hartweg's golden sunburst was not found within the Action Area during the 2015 botanical surveys. However, the existing environment within the Action Area suggests there is potentially suitable habitat for Hartweg's golden sunburst to be present because the project site contains non-native grasslands underlain by Rocklin soils.

Preconstruction surveys would be completed during the appropriate blooming period the season prior to groundbreaking to ensure that impacts to individual plants do not occur.

Though currently not expected, if this species were to occur on-site, both Build Alternatives could have permanent and temporary impacts to Hartweg's golden sunburst. In this case, Caltrans would then coordinate with the U.S. Fish and Wildlife Service and obtain an Incidental Take Permit (ITP) from the California Department of Fish and Wildlife to address any adverse effects to the species and propose additional forms of impact minimization efforts. Therefore, the proposed project's preferred alternative (Alternative 4, Phased) May Affect, but is Not Likely to Adversely Affect Hartweg's golden sunburst.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination regarding the preferred alternative (Alternative 4, Phased) on August 29, 2019.

Hairy Orcutt Grass
Though hairy orcutt grass was not found within the Action Area during the 2015 botanical surveys, based on the designated critical habitat, seasonal wetlands, and vernal pools within the non-native grassland areas, there is potential for hairy orcutt grass to occur. Table 2.33 shows the acreage of impact expected from each Build Alternative.

Table 2.33 Impacts to Potentially Suitable Hairy Orcutt Grass Habitat

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Acres of Potential Habitat	30.81 acres	30.81 acres	30.81 acres	30.81 acres
IMPACTS (Non-Critical Habitat)				
Permanent	0.59 acre	0.45 acre	0.13 acre	0.32 acre
Temporary	0.17 acre	0.10 acre	0.0 acre	0.10 acre
IMPACTS (Critical Habitat)				

Permanent	4.21 acres	2.59 acres	1.84 acres	0.75 acre
Temporary	2.79 acres	2.72 acres	2.49 acres	0.23 acre

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Alternative 2 has the potential to permanently affect 4.21 acres of critical potentially suitable habitat and 0.59 acre of non-critical potentially suitable habitat, as well as temporarily affect 2.79 acres of critical potentially suitable habitat and 0.17 acre of non-critical potentially suitable habitat for hairy orcutt grass.

Phased construction of Alternative 4 may affect, but is not likely to adversely affect the hairy orcutt grass. Alternative 4 has the potential to permanently affect 2.59 acres of critical potentially suitable habitat and 0.45 acre of non-critical potentially suitable habitat, as well as temporarily affect 2.72 acres of critical potentially suitable habitat and 0.10 acre of non-critical potentially suitable habitat for hairy orcutt grass.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination regarding the preferred alternative (Alternative 4, Phased) on August 29, 2019.

As a Caltrans policy, preconstruction surveys will be completed throughout the new Caltrans right-of-way once Caltrans biologists can access all properties within the Action Area. If hairy orcutt grass is found, it would be avoided and protected with an Environmentally Sensitive Area if possible. In cases where avoidance is not possible, Caltrans would initiate formal consultation with the U.S. Fish and Wildlife Service, obtain an Incidental Take Permit from the California Department of Fish and Wildlife to address any adverse effects to the species, and propose additional forms of impact minimization efforts.

San Joaquin Valley Orcutt Grass

San Joaquin Valley orcutt grass was found within the Action Area as an incidental species during surveys conducted in 2016. Based on the designated critical habitat, seasonal wetlands, and vernal pools within the non-native grassland areas, there is potential for San Joaquin orcutt grass to occur. Table 2.34 shows the acreage of impact expected from each Build Alternative.

Table 2.34 Impacts to San Joaquin Valley Orcutt Grass

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Acres of Potential Habitat	30.81 acres	30.81 acres	30.81 acres	30.81 acres
IMPACTS (Non-Critical Habitat)				
Permanent	0.59 acre	0.45 acre	0.13 acre	0.32 acre
Temporary	0.17 acre	0.10 acre	0.0 acre	0.10 acre
IMPACTS (Critical Habitat)				

Permanent	4.21 acres	2.59 acres	1.84 acres	0.75 acre
Temporary	2.79 acres	2.72 acres	2.49 acres	0.23 acre

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Alternative 2 has the potential to permanently affect 4.21 acres of critical potentially suitable habitat and 0.59 acre of non-critical potentially suitable habitat, as well as temporarily affect 2.79 acres of critical potentially suitable habitat and 0.17 acre of non-critical potentially suitable habitat for San Joaquin Valley orcutt grass.

The phased construction of Alternative 4 may affect, but is not likely to adversely affect the San Joaquin Valley orcutt grass. Alternative 4 has the potential to permanently affect 2.59 acres of critical potentially suitable habitat and 0.45 acre of non-critical potentially suitable habitat, as well as temporarily affect 2.72 acres of critical potentially suitable habitat and 0.10 acre of non-critical potentially suitable habitat for San Joaquin Valley orcutt grass.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination regarding the preferred alternative (Alternative 4, Phased) on August 29, 2019.

As a Caltrans policy, preconstruction surveys will be completed throughout the new Caltrans right-of-way once Caltrans biologists can access all properties within the Action Area. If San Joaquin Valley orcutt grass is found, it would be avoided and protected with an Environmentally Sensitive Area if possible. In cases where avoidance is not possible, Caltrans would initiate formal consultation with the U.S. Fish and Wildlife Service and obtain an Incidental Take Permit from the California Department of Fish and Wildlife to address any adverse effects to the species, and propose additional forms of impact minimization efforts.

Succulent (Fleshy) Owl's-Clover

Though the succulent (fleshy) owl's-clover was not found within the Action Area during the 2015 botanical surveys, based on the presence of designated critical habitat, seasonal wetlands, and vernal pools within the non-native grassland areas, there is potential for the succulent (fleshy) owl's clover to be present within grassland areas north of Avenue 15 and southeast of Avenue 12. Table 2.35 shows the acreage of impact expected from each Build Alternative.

Table 2.35 Impacts to Succulent (Fleshy) Owl's Clover

Impact Category	Alternative 2	Alternative 4	Alternative 4 Phase 1	Alternative 4 Phase 2
Total Acres of Potential Habitat	30.81 acres	30.81 acres	30.81 acres	30.81 acres
IMPACTS (Non-Critical Habitat)				
Permanent	0.27 acre	0.54 acre	0.19 acre	0.35 acre
Temporary	0.05 acre	0.13 acre	0.03 acre	0.10 acre

IMPACTS (Critical Habitat)				
Permanent	4.53 acres	2.50 acres	1.78 acres	0.72 acre
Temporary	2.90 acres	2.70 acres	2.47 acres	0.23 acre

Source: Caltrans Natural Environment Study 2015, Caltrans Revised Natural Environment Study 2019

Alternative 2 has the potential to permanently affect 4.53 acres of critical potentially suitable habitat and 0.27 acre of non-critical potentially suitable habitat, as well as temporarily affect 2.90 acres of critical potentially suitable habitat and 0.05 acre of non-critical potentially suitable habitat (vernal pools) for the succulent (fleshy) owl's-clover.

The phased construction of Alternative 4 has the potential to permanently affect 2.50 acres of critical potentially suitable habitat and 0.54 acre of non-critical potentially suitable habitat, as well as temporarily affect 2.70 acres of critical potentially suitable habitat and 0.13 acre of the non-critical potentially suitable habitat (vernal pools) for the succulent (fleshy) owl's clover.

If this species occurs on-site, both Build Alternatives would have permanent and temporary impacts to the succulent (fleshy) owl's clover. Therefore, the proposed project's preferred alternative (Alternative 4, Phased) may affect, but is not likely to adversely affect the succulent (fleshy) owl's clover.

Caltrans initiated formal consultation with the U.S. Fish and Wildlife Service in December 2018 and received a Biological Opinion in support of this determination regarding the preferred alternative (Alternative 4, Phased) on August 29, 2019.

As a Caltrans policy, preconstruction surveys will be completed throughout the new Caltrans right-of-way once Caltrans biologists can access all properties within the Action Area. If succulent (fleshy) owl's clover is found, it would be avoided and protected with an Environmentally Sensitive Area if possible. In cases where avoidance is not possible, Caltrans would initiate formal consultation with the U.S. Fish and Wildlife Service and obtain an Incidental Take Permit from the California Department of Fish and Wildlife to address any adverse effects to the species, and propose additional forms of impact minimization efforts.

Avoidance, Minimization, and/or Mitigation Measures

A Biological Assessment was prepared, and Section 7 formal consultation was initiated with the U.S. Fish and Wildlife Service in December 2018 for potential effects to federally listed species. The Biological Opinion was issued by the U.S. Fish and Wildlife Service on August 29, 2019 and is included in this final document (see Appendix J). Caltrans began coordination with the California Department of Fish and Wildlife in November 2014 about the potential for take of state listed species (see Appendix G) and will enter coordination with them again when Caltrans obtains an Incidental Take Permit (ITP) for the project.

Animal Species

California Tiger Salamander

The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the California tiger salamander, along with the following:

- The dual-purpose Environmentally Sensitive Area fencing to be installed will also serve to exclude California tiger salamanders and shall be additionally applied to off-site areas adjacent to the project footprint that contain suitable upland grassland habitat or aquatic features that may be used by this species.
- Prior to construction and after the installation of the Environmentally Sensitive Area fencing, potentially suitable burrows will be hand-excavated by a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved biologist. Any California tiger salamanders that are discovered will be relocated to a suitable upland burrow outside of the project footprint, based on prior coordination and approval from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.
- If a 70% or greater chance of rainfall is predicted within 24 hours of a project activity, a qualified biologist shall survey the project site, for the presence of migrating California tiger salamanders, prior to the start of construction each day that rain is forecasted.
- No project work that could impact migrating California tiger salamanders shall occur during or within 48 hours following significant rain events, defined as ¼-inch or more of rain in a 24-hour period.
- For work conducted during the California tiger salamander migration season (November 1–May 31), a qualified biologist will survey active work areas (including access roads) in the morning, following measurable precipitation that measures less than ¼-inch. Construction may not begin until a biologist has confirmed that no California tiger salamanders are in the work area.
- Basins and/or trenches greater than 6 inches deep will be required to be covered or have an escape ramp present. These will be checked daily for trapped California tiger salamanders and other wildlife. Before they are filled in, the basins and/or trenches will be inspected thoroughly for trapped wildlife.
- Any pipes or culverts stored on-site must be capped to prevent entry by a California tiger salamander. Pipes must be inspected before installation to ensure that California tiger salamanders have not taken cover inside. If any California tiger salamanders are found in pipes or culverts, the assigned Caltrans biologist will be notified.
- Vehicle travel will be limited to established roadways unless otherwise designated. Any travel beyond the paved highway shall adhere to a 20-mile-per-hour daytime speed limit and 10-mile-per-hour nighttime speed limit.

Proposed Compensatory Mitigation for Impacts to California tiger salamander:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase, Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, temporary impacts will be compensated for at a 1.1:1 ratio and impacts to temporary aquatic habitat will be compensated for at a 0.5:1 ratio.

Vernal Pool Fairy Shrimp
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the vernal pool fairy shrimp.

Proposed Mitigation Measures for Impacts to Vernal Pool Fairy Shrimp:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase, Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, and temporary impacts will be compensated for at a 1.1:1 ratio.

San Joaquin Kit Fox
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the San Joaquin kit fox, as well as the following:

- Pre-construction surveys would be completed no more than 30 days prior to the start of construction to ensure no San Joaquin kit foxes are in or adjacent to the project area.

- If any San Joaquin kit foxes are observed during the course of project activities, they would be allowed to leave the area unharmed and on their own volition and Caltrans would notify the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine additional measures to protect the species.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grasslands, vernal pools, wetlands, and other waters will also benefit this species.

Swainson's Hawk
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the Swainson's hawk, as well as the following:

- Pre-construction Swainson's hawk surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.

- If any nesting pairs are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds, which may include but is not limited to: the establishment of a protective Environmentally Sensitive Area and a 500-foot "no-work" buffer and having a biological monitor present during construction activities that occur in close proximity to the nest.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit this species. In addition, due to requirements for the reduction of greenhouse gases, all trees removed to construct the project must be mitigated. Although the locations and replacement species have not been determined at this time, this too is expected to benefit this species by replacing habitat.

Tricolored Blackbird
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the tricolored blackbird.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to non-native grasslands, vernal pools, and wetlands will also benefit this species.

Crotch Bumble Bee
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the crotch bumble bee, as well as the following:

- Preconstruction surveys will be completed by qualified biologists to determine if Crotch bumble bees occur on the project site. If any individual Crotch bumble bees are observed during the survey, then a more extensive survey(s) would be conducted to determine if the species is nesting within the Action Area.

- A 50-foot "no-work" buffer would be established to protect any known nests that can be avoided during construction of the project. If any nests are discovered that cannot be avoided, coordination with the California Department of Fish and Wildlife may be necessary.

Proposed Mitigation Measures for Impacts to Crotch Bumble Bee:

- No compensatory mitigation is proposed. However, based on the results of the preconstruction survey and the listing status of the Crotch bumble bee prior to construction, Caltrans may need to coordinate with the California Department of Fish and Wildlife to obtain a 2081 Incidental Take Permit, which could include the need for compensatory mitigation, though the mitigation that will be completed to compensate for impacts to upland habitat for the California tiger salamander would likely also benefit this species.

Plant Species

Hartweg's Golden Sunburst, Hairy Orcutt Grass, San Joaquin Valley Orcutt Grass, Succulent Owl's Clover

Though none of these plant species was found during the 2015 surveys, San Joaquin Valley orcutt grass was incidentally observed in the Action Area in 2016. The existing environment within the Action Area suggests there is potential for the Hartweg's golden sunburst, hairy orcutt grass, and succulent owl's clover to occur. The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for these species, as well as the following:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans right-of-way once Caltrans biologists can access all properties within the Action Area.

- If any of these species are observed, they would be avoided and protected with an Environmentally Sensitive Area, if possible. In cases where avoidance is not possible, Caltrans would initiate formal consultation with the U.S. Fish and Wildlife Service and obtain an Incidental Take Permit from the California Department of Fish and Wildlife to address any adverse effects to the species and propose additional forms of impact minimization efforts, which may include, but would not be limited to the following:

    - The collection and stockpiling of the top 4-6 inches of soil (during construction) and re-application in areas of suitable habitat (once construction is complete) with the goal of preserving this species' seeds in the on-site soils.

    - Transplanting individual plants to a suitable location outside of the project impact area.

    - Seed collection.

Proposed Mitigation Measures for Impacts to San Joaquin Valley orcutt grass and hairy orcutt grass:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase, Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, and temporary impacts will be compensated for at a 1.1:1 ratio. Tables 2.33 and 2.34 outline the permanent, indirect, and temporary impact areas, compensation ratios, and mitigation areas that will be used to compensate for impacts to these species for Phases 1 and 2 of the project.

California Jewelflower

If this species is found on-site and cannot be entirely avoided, Caltrans would coordinate with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to determine additional minimization and/or mitigation measures.

2.3.6 Invasive Species

Regulatory Setting

On February 3, 1999, President Bill Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council, to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

Affected Environment

The biological study area was evaluated for the presence of invasive plant species based on the California Invasive Plant Control (CIPC) list.

The following invasive plant species were identified within the biological study area:

- *Avena barbata* – slender wild oat
- *Avena fatua* – wild oat
- *Brassica nigra* – black mustard
- *Bromus diandrus* – ripgut brome
- *Bromus hordeaceus* – soft brome
- *Bromus madritensis* ssp. *rubens* – red brome
- *Carduus pycnocephalus* – Italian thistle
- *Centaurea solstitialis* – yellow star-thistle

- *Cynodon dactylon* – Bermuda grass
- *Dactylis glomerate* – orchard grass
- *Erodium cicutarium* – redstem filaree
- *Eucalyptus globulus* – Tasmanian blue gum
- *Festuca myuros* – rattail sixweeks grass
- *Festuca perennis* – Italian rye grass
- *Ficus carica* – edible fig
- *Hirschfeldia incana* – Mediterranean, short-pod mustard
- *Hordeum marinum* ssp. *gussoneanum* – Mediterranean barley
- *Hordeum marinum* ssp. *murinum* – wall barley
- *Hordeum marinum* – foxtail barley
- *Hypochaeris glabra* – smooth cat's-ear
- *Hypochaeris radicata* – hairy cat's-ear
- *Lythrum hyssopifolium* – hyssop loosestrife
- *Medicago polymorpha* – California bur clover
- *Olea europaea* – olive
- *Poa pratensis* – Kentucky bluegrass
- *Polypogon monspeliensis* – annual rabbit-foot grass
- *Raphanus sativus* – radish
- *Rumex crispus* – curly dock
- *Salsola tragus* – Russian thistle
- *Silybum marianum* – milk thistle
- *Tribulus terrestris* – puncture vine
- *Trifolium hirtum* – rose clover
- *Washingtonia robusta* – Washington fan palm

Environmental Consequences

In compliance with the executive order on invasive species (Executive Order 13112) and guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as invasive. In areas of particular sensitivity, extra precautions would be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are required to mitigate impacts to invasive species. The following policies would be implemented to ensure that the spread of invasive species will not occur:

- All areas disturbed by project construction will be re-seeded with native species suitable for the project location.

- A non-standard special provision will be included in the construction contract that requires construction equipment and vehicles be cleaned prior to entering and exiting the project.

Additional specifications to prevent the spread of, or eradicate, invasive species may be included in the construction contract.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences, such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under the California Environmental Quality Act can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act (NEPA), can be found in 40 Code of Federal Regulations (CFR) Section 1508.7 of the CEQ Regulations.

Affected Environment

Cumulative impacts identified for the Madera 41 South Expressway project are those impacts that result from past, present, and reasonably foreseeable future actions occurring in the project area.

Past, Current, and Reasonably Foreseeable Projects

The list of reasonably foreseeable, current, and past projects includes highway projects and approved development. It is based on projects adjacent to and near the project that were identified by Madera County and Caltrans (District 6). Table 2.36 shows past projects, projects under construction, and reasonably foreseeable future projects considered for the cumulative impacts analysis. The cumulative impact study area is shown in Figure 2.6.

Table 2.36 Past and Future Caltrans Projects and Approved Development

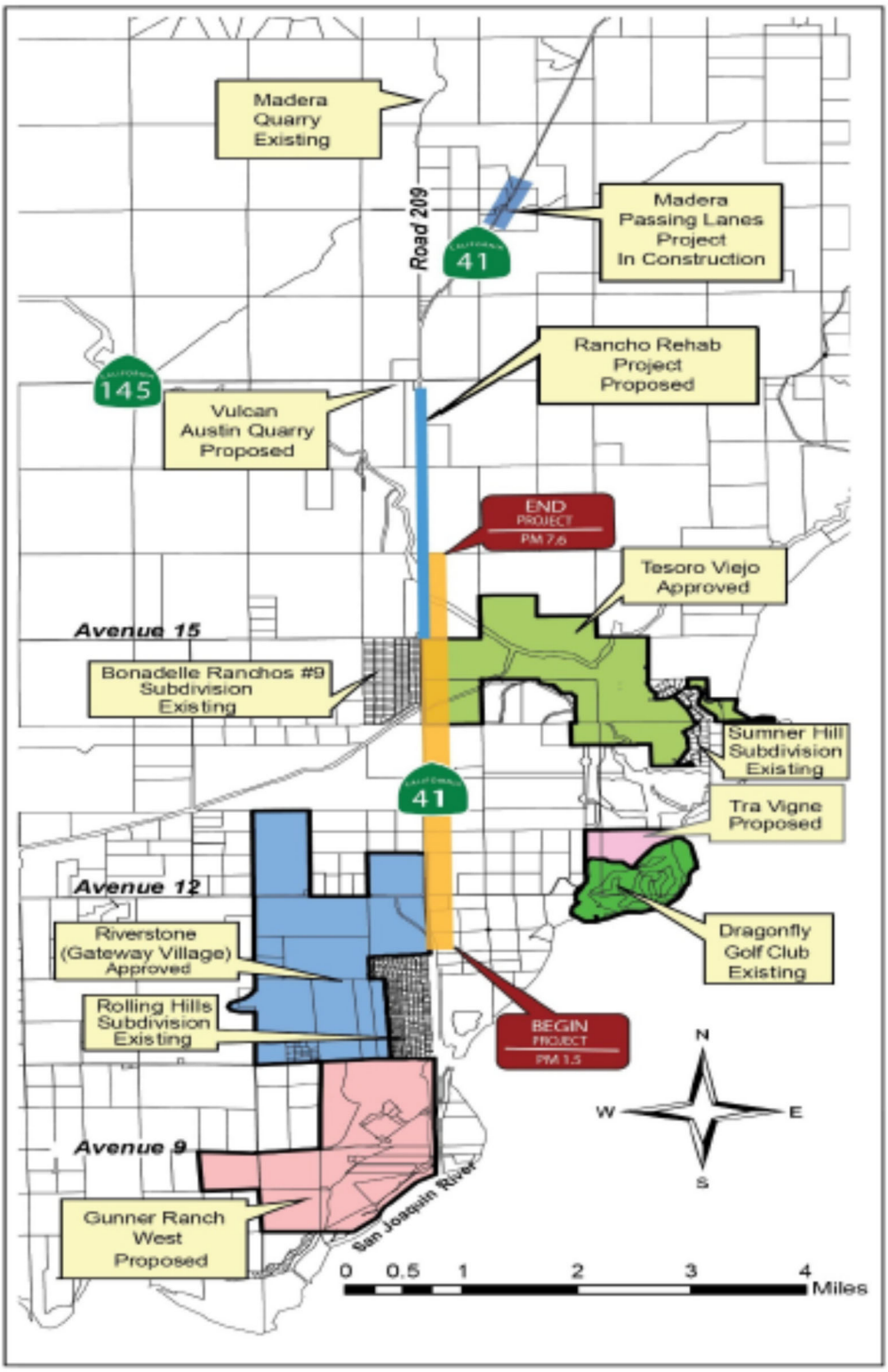
Project Name	Location	Description	Impacts	Status
Madera 41 South Expressway	Post mile 1.5 to 7.6	Proposes extending freeway north and transitioning into a four-lane expressway at Avenue 12 on new and existing alignment	Visual, habitat for special-status species, paleontological resources and cultural resources	Final Environmental Document
Ranchos Rehab Project	Post miles 7.6 to north of State Route 145	Proposes widening to four-lane expressway on new and existing alignment	Visual, habitat for special-status species, paleontological resources and cultural resources	Draft Environmental Document
Madera 41 Passing Lanes	Post miles 11.7 to 13.6	Construct passing lanes	Visual, habitat for special-status species, paleontological resources and cultural resources	Construction complete
Road Maintenance Projects	Various locations along the highway corridor	Limited to paved roadway, pavement rehabilitation, lane striping, and safety features, such as rumble strips	Minimum impacts within the existing state right-of-way	Proposed as funding becomes available
Riverstone/ Gateway Village	West of State Routh 41 north/ south of Avenue 12	Proposes 6,568 dwellings on 1,973 acres, light industrial uses, 148 acres of open space, and four elementary schools	Visual, habitat for special-status species, paleontological resources and cultural resources	Construction began in Winter 2015
Tesoro Viejo	East of State Route 41 between Avenue 12 and the Madera Canal	Proposes 5,200 residential units, commercial space, light industrial, open space and parks, schools, a sewage treatment and water treatment facility, and community park/storm water retention basin	Visual, habitat for special-status species, paleontological resources and cultural resources	Construction began in Fall 2017
Gunner Ranch West	West of State Route 41 north/south of Avenue 10	2,840 residential units, commercial space, hospital-related services, medical offices, a government center, open space, parks, hospital electrical substation, and a 62-acre wastewater treatment plant	Visual, habitat for special-status species, paleontological resources and cultural resources	No construction date
Tra Vigne Subdivision	North of Avenue 12, 2.5 miles east of State Route 41	Includes 432 residential lots, open space, and a wastewater treatment plant	Visual, habitat for special-status species, paleontological resources and cultural resources	Pending approval from the County of Madera
Bonadelle Ranchos Number 9	West of State Route 41 between Avenues 14 and 15	Includes 1- and 2-acre residential units, commercial lots, and a church	Visual, habitat for special-status species, paleontological resources and cultural resources	Existing

Project Name	Location	Description	Impacts	Status
Rolling Hills	West of State Route 41 between Avenues 11 and 12	299 housing units, commercial units, fire station	Visual, habitat for special-status species, paleontological resources and cultural resources	Built
Madera Quarry	North of State Route 145 and 2 miles west of State Route 41	Mines and processes, aggregate material and transports offsite	Visual, habitat for special-status species, paleontological resources and cultural resources	Opened August 2015
Vulcan Materials Austin Quarry	South of State Route 145, west of State Route 41	Mines and processes, aggregate material and, transports offsite	Visual, habitat for special-status species, paleontological resources and cultural resources	Approved by Madera County Summer 2016

The O'Neals Area Plan was not included in the cumulative impact study because this plan confines development mostly within the existing subdivisions and primarily maintains cattle grazing as the main land use. The plan area is very large and extends into the foothill area of O'Neals. The existing State Route 41 is the eastern border for this area plan south of State 145 to Avenue 14. Bondadelle Ranchos Number 9 and the Bonadelle Ranchos, located several miles west of the project area on Avenue 15, are located within the boundaries of the O'Neals Area Plan.

The Rio Mesa Area Plan, as a whole, is much larger and extends away from the project corridor; therefore, it was not included in the cumulative impact study area. However, the development projects within the Rio Mesa Area Plan that have been approved (Tesoro Viejo) or are nearing approval (Tra Vigne) by the County of Madera were included because the likelihood of their construction in the near future is high.

There are no other reasonably foreseeable developments within the project corridor at this time.



Source: Based on Madera County Planning Department Town Hall Meeting, Madera Ranchos, May 14, 2013

Figure 2-6 Cumulative Impact Study Area

Environmental Consequences

This section discusses the direct and indirect impacts to each resource that could occur as a result of the Madera South 41 Expressway project when combined with other projects listed above. The discussion includes the resources that the project would have a significant impact on and the resources in poor or declining health, or at risk, even if the project impacts are relatively small or less than significant. These resources include: land use, growth, farmland, community character and cohesion, visual resources, cultural resources, paleontology, noise, and biological resources. The affected environment for each of these resources is discussed in their respective sections of this document in Chapter 2.

Land Use – The geographic boundaries for this cumulative impact is the project corridor between the San Joaquin River and State Route 145, and the surrounding areas approved for planned development.

The project corridor (the existing State Route 41 and adjacent area) lies in southeast Madera County, 3 miles north of the Fresno/Madera County line, about 15 miles east of the City of Madera, and immediately north of the San Joaquin River. Most of the gently rolling terrain surrounding the existing State Route 41 is designated as rural agriculture or rural commercial (Madera County General Plan). Based on the map of farmland in Figure 2-4, roughly 80 percent of the project corridor is currently either open space grazing land, farm fields, or vacant land. The remaining 20 percent of the project corridor includes two subdivisions—Rolling Hills and Bonadelle Ranchos Number 9. Within these two subdivisions, the land is built up and includes commercial and industrial uses, residential areas, and a church. 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 Station Number 9 (CAL Fire station), which is on Avenue 11 in Rolling Hills about 3 blocks west of the freeway.

Development proposals have been planned for more than 30 years in this area of Madera County. Multiple plans and policies govern land use decisions in the project area. In the recent past, three major developments have been approved that potentially would build up to 18,000 homes in and around the project area, converting approximately 4,500 acres to urban uses. Most of the land is currently used for agriculture. The amount of land the project would convert ranges from 260 acres to 278 acres. Depending on the Build Alternative, some of the converted land is currently used for commercial businesses but most land is used for agriculture.

Two of these approved developments—Tesoro Viejo and Riverstone—would contribute future traffic to the segment of State Route 41 within the project limits. The third approved development—Gunner Ranch West—is south and southwest of the project limits and is also expected to contribute traffic to this freeway segment of State Route 41. All development is under the jurisdiction of Madera County.

The project proposes to construct an expressway for to meet the needs of planned growth adjacent to and surrounding the project area. The expressway is expected to improve commuter time (slightly) by adding a travel lane and reducing the number of access points (local roads and driveways) within the project limits. At-grade intersections (and later freeway interchanges) would be constructed at the existing intersections of Avenue 12 and Avenue 15 only. After construction of the expressway, access from local roads would be limited to right turns only. When the freeway is constructed, all access from local roads would be eliminated. Therefore, the project could influence decisions related to land use because access onto the expressway and eventually the freeway would be limited.

Indirectly, the project could result in changes to existing land use patterns and surrounding land uses as a result of the future freeway to support the planned growth projected to occur within the project area.

Growth – The geographic boundaries for this cumulative impact are the San Joaquin River on the south and east, Road 39 on the west, and State Route 145 on the north. These boundaries were drawn to include the Gunner Ranch West approved development on the south, the Riverstone approved development on the west, and the proposed and approved developments within the Rio Mesa Area Plan east and north of the existing State Route 41.

Growth pressure in this area of Madera County intensified in the 1990s. Caltrans' Route 41 Improvement Project Tier I Environmental Impact Statement/ Environmental Impact Report (1995) stated, "Recently, pressures for residential development in south central Madera County have increased rapidly." Among the key factors identified were "…spillover demand from the northward expansion of the Fresno-Clovis Metropolitan Area real estate market"; the construction of the new Valley Children's Hospital facility near Avenue 10; and "large-scale land assembly and pre-development planning activity in the Rio Mesa Area of south central Madera County…"

Development pressure spurred the preparation of the O'Neals Area Plan (approved in 1980) and was a factor causing the revision of the Madera County General Plan in 1995 and the adoption of the Rio Mesa Area Plan that same year. Two additional area plans were adopted later, the Gunner Ranch West Area Plan in 1994 and the Gateway Village Area Plan in 2002.

Of these proposals, developments that have been approved by Madera County adjacent to and within the project footprint are Tesoro Viejo (within the Rio Mesa Area Plan area), and Riverstone (within the Gateway Village Area Plan). The Gunner Ranch West development, which is south of the project limits, has also been approved by Madera County.

The lack of adequate infrastructure in the project vicinity (including the existing two-lane rural highway) has not deterred development proposals in the area. So far, the rate of growth and land use change in the project vicinity has been very slow.

Construction of the expressway is not expected to cause growth, but the project may have some effect on the rate that already planned land use change occurs in the project vicinity by building a transportation facility that would provide adequate capacity for the projected residential population.

It is unlikely that the expressway would stimulate new growth in the area because most of the project vicinity falls within the approved growth areas, and the rate of growth and land use change in the vicinity of the project is driven by the County's approvals of planned developments.

Farmland – The geographic boundaries for this cumulative impact are by the San Joaquin River on the south and east, Road 39 on the west, and State Route 145 on the north.

Within the project corridor, the two subdivisions—Rolling Hills and Bonadelle Ranchos Number 9—are designated as Urban and Built-Up Land. About half of the project corridor is designated as Grazing Land, most of it located north of Avenue 15 and between Avenues 13 and 14 on both sides of State Route 41, and east of State Route 41 south of Avenue 12. In the area of the Caltrans environmental mitigation parcel, known as Madera Pools, the area is designated as Farmland of Local Importance.

The three major developments that have been approved potentially would convert about 4,500 acres to urban uses. Alternative 2 would convert about 223 acres currently zoned for agricultural use, including 53 acres that are designated as prime or unique farmland and 2 acres designated as statewide or locally important farmland. Alternative 4 would convert about 230 acres currently zoned for agricultural use, including 59 acres that are designated as prime or unique farmland, and 3 acres designated as statewide or locally important farmland.

According to the California Department of Conservation, the total farmland acreage in Madera County as of 2014 was 759,317 acres. Of this acreage, 369,375 acres are classified as Important Farmland and 389,942 acres are classified as Grazing Land. The amount of farmland converted for the expressway and ultimately a freeway (223 acres to 230 acres) represents less than 0.1 percent of the total classified as Important Farmland in Madera County.

Farmland conversion in Madera County over the last 30 years (1982-2014) resulted in a loss of 34,775 acres (4.4 percent of the farmland) to urban and built-up land and to other land uses such as low-density rural residential development, mining areas, vacant areas and nonagricultural vegetation.

Community Character and Cohesion – The geographic boundaries of this cumulative impact are the boundaries of the Bonadelle Ranchos Number 9 subdivision.

Bonadelle Ranchos Number 9 subdivision is near the north end of the project bordered by the Lateral 6.2 canal on the south, parcels on Skyview Road on the west, Avenue 15 on the north, and the existing State Route 41 on the east. Growth within the subdivision is limited to the existing boundaries and current vacancies.

This small subdivision consists of about 182 parcels, ranging from 1 acre to 2 acres. There are no public parks, public meeting areas, or community or activity centers within the subdivision. One church sits on Avenue 14 west of the existing State Route 41. There are no banks or grocery stores but approximately 40 1-acre parcels are zoned for commercial use. Currently, there are 26 commercial properties, mostly retail or sales, along the west side of the existing State Route.

Community cohesion is often defined as a sense of “belonging” to a neighborhood or an attachment to neighbors, groups, and institutions as a result of continued association over time. The residents of this subdivision appear to have a high level of cohesion given the high percentage of owner-occupied homes (90.3 percent); most of the businesses are less than 8-15 years old and appear to have a lower level of cohesion.

Alternative 2 would not change the neighborhood, community, or community character of the Bonadelle Ranchos Number 9 subdivision because the neighborhood would retain its rural setting, and the proposed project would not divide the community. However, Alternative 2 would limit access onto or off of the proposed expressway to the Avenue 15 at-grade intersection, which would eliminate direct access to the businesses.

Alternative 4 would limit access onto or off of the proposed expressway to the Avenue 15 at-grade intersection. In addition, this alternative would bring traffic closer to the neighborhood because the alignment would acquire the parcels sitting along the west side of the existing State Route 41 and force the 26 businesses to relocate. This alternative may increase the noise level, but it is not expected to change the overall neighborhood, community or community character because the neighborhood would retain its rural setting, and the project would not divide the community.

The project and the planned development would, however, cumulatively have a direct effect on the rural character and cohesion of the subdivision. In the future, the distinction of being an isolated rural community would be absorbed into a much larger neighborhood with all the features of a small town.

Visual – The geographic boundaries for this impact are the views east and west of State Route 41 within the highway corridor from just north of the San Joaquin River (the county line) to a couple of miles north of State Route 145.

Currently, after State Route 41 crosses the San Joaquin River, highway travelers have an unobstructed view of the Sierra Nevada foothills and mountains, open space, and farmland to the east as they pass through the project corridor. The western view is briefly obstructed by the subdivisions, but travelers can sometimes see the Coastal Range in the distance.

The expressway project may contribute to a cumulative impact on visual resources depending on whether you are a highway traveler or a resident of the area. For the highway traveler, an elevated highway can provide a clearer view, which can be

pleasant. For the residents of the subdivisions, the view to the east may be obstructed by the highway facility and vehicles, although the Sierra Nevada foothills would be seen in the far distance. With the addition of housing and commercial development approved, the cumulative effect would change the area from a rural open space environment to a more urban and crowded environment.

Cultural Resources – The geographic boundary for this cumulative impact is the Archaeological Survey Coverage area within the highway corridor from just north of the San Joaquin River (the county line) to a couple of miles north of State Route 145. The Archaeological Survey Coverage Area covers a broader area than the Area of Potential Effects of this expressway project. Though the Area of Potential Effects did not analyze cultural resources as a district, the expressway project may contribute to a cumulative impact on archaeological resources within the larger Archaeological Survey Coverage Area, which includes a records search area that encompasses the area surrounding the project corridor.

North of the project are recorded archaeological sites that potentially would be affected by any improvements to State Route 41. The resource study area has documented ethnographic sites and/or villages adjacent to or near State Route 41, but not all sites are recorded. Usually, a development activity triggers a need for a survey or study. Therefore, the approved developments adjacent to the highway project and this expressway project may encounter unrecorded sites during construction.

No new prehistoric or historic-era archaeological resources were recorded in the Archaeological Survey Coverage Area during the 2014/2015 inventory. But, as a result of the studies conducted for the project, mapping was updated and the locations of three previously recorded prehistoric archaeological sites and three historic sites within the Archaeological Survey Coverage (and Records Search) area were verified. In addition, two site records were updated during the 2015 inventory to include more precise graphic and location data.

Paleontology – The geographic boundary for this impact included the study area used in the November 2015 Paleontological Evaluation Report for this project.

The expressway project would contribute to a cumulative impact on paleontological resources. Based on the studies conducted for the expressway project, it was determined that paleontological resources were present throughout the length of the project limits that would potentially be affected by the project. Scientifically important paleontological resources have been discovered in Madera County and salvaged from the same geologic formations that underlie the project location, the Modesto and Turlock Lake Formations.

Both Build Alternatives would have an effect on the Turlock Lake and Modesto Formations due to the proposed ground disturbance and excavations for the proposed water detention basins. Several of the approved developments propose water treatment facilities, detention basins, or storm water facilities that would require major ground disturbance and excavation.

Noise – The geographic boundary for this impact included the study area used in the October 2015 Noise Study Report for this project.

The expressway project would contribute to a cumulative impact on noise levels, but only if Alternative 4 is selected as the preferred alternative. Alternative 4 would move the expressway closer to receptors, and modeled sound abatement would include a soundwall.

Combined with the noise of daily school activities, bus stops, light industrial facilities, added vehicles, truck traffic, and new neighborhoods planned and under construction, it would be expected that the noise level would increase and the area would change into a busy urban environment.

Biological Resources – Threatened and Endangered Species – The geographic boundary for this impact included the Action Area used in the May 2016 Natural Environment Study for this project and the Action Area used in the 2019 Revised Natural Environment Study.

The expressway project would contribute to cumulative impacts on critical habitat for threatened and endangered species. It would additionally impact wetland and vernal pool habitats. The State Route 41 corridor from Avenue 12 to Avenue 15, for the most part, has been converted to agricultural land, limiting the habitat available for vernal pool and native upland plants to disperse seed and repopulate. In 2005, the area was designated as Critical Habitat for vernal pools and the California tiger salamander. In 2006, the California Federal Register designated grassland areas and adjacent lands as Critical Habitat for three vernal pool plant species, the San Joaquin Valley orcutt grass, hairy orcutt grass, and succulent owl's clover, and a crustacean, the vernal pool fairy shrimp.

Hydrological connectivity provides the ability of water to flow into or out of wetlands or to inundate adjacent upland areas. Alteration of the existing State Route 41 may result in permanent changes to the natural hydrological flow patterns that determine filling, inundation, and saturation as well as the drying of vernal pools and wetland swales in areas adjacent to the existing and proposed alignments. This may disturb the aquatic life cycle patterns of endemic vernal pool plant species and reduce the fertility of the population.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required for land use, growth, or farmland.

Both Build Alternatives would have an effect on scenic resources with the construction of the Avenue 11 undercrossing bridge. The project's contribution to this impact would be minimized by using aesthetic enhancements to provide visual consistency to the corridor. Aesthetic enhancements would include: Aesthetic enhancements on the structure and texture on the slope paving under the bridge abutments, areas beyond the gore would use a contrasting surface treatment and any retaining walls would be designed with aesthetic treatments to match treatments on other structures. Aesthetic

treatments would enhance the positive visual effects of the project, generate public acceptance of the project, and lessen any perceived adverse visual effects.

See Section 2.1.7 Visual/Aesthetics, Avoidance, Minimization, and/or Mitigation Measures for further discussion.

Both Build Alternatives have the potential to encounter unrecorded archaeological sites and cultural resources during construction. No mitigation is required at this time but if sites are discovered, it is the policy of Caltrans that work stop in the area until a qualified archaeologist can evaluate the nature and significance of the discovery. See Section 2.1.8 Cultural Resources, Avoidance, Minimization, and/or Mitigation Measures for further discussion.

Both Build Alternatives would have an effect on paleontological resources. The project's contribution to this cumulative impact would be mitigated with development of a mitigation plan, which would include construction monitoring and recovery of fossils if discovered. See Section 2.2.2 Paleontology, Avoidance, Minimization, and/or Mitigation Measures for further discussion.

Alternative 4 may have an effect on noise levels if selected as the preferred alternative, and a soundwall would be recommended to minimize these effects. See Section 2.2.5 Noise and Vibrations, and/or Mitigation Measures for further discussion.

Both Build Alternatives would affect threatened and endangered species. Proposed mitigation measures such as preconstruction surveys, monitoring during construction, and monetary compensation determined in consultation with the jurisdictional agencies are further discussed in Section 2.3.5 Threatened and Endangered Species.

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance under the California Environmental Quality Act

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 and the California Environmental Quality Act. The Federal Highway Administration's responsibility for environmental review, consultation, and any other action required in accordance with the National Environmental Policy Act and other applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S. Code 327. Caltrans is the lead agency under the National Environmental Policy Act and California Environmental Quality Act.

One of the main differences between the National Environmental Policy Act and the California Environmental Quality Act is the way significance is determined. Under the National Environmental Policy Act, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, would be required. The National Environmental Policy Act requires that an Environmental Impact Statement be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under the California Environmental Quality Act may not be of sufficient magnitude to be determined significant under the National Environmental Policy Act. Under the National Environmental Policy Act, 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. The National Environmental Policy Act does not require that a determination of significant impacts be stated in the environmental documents.

The California Environmental Quality Act, 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 California Environmental Quality Act 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 the National Environmental Policy Act that parallel the findings of mandatory significance of the California Environmental Quality Act. This chapter discusses the effects of this project and the California Environmental Quality Act significance.

3.2 Discussion of Significant Impacts

"Significant effect" on the environment means substantial or potential substantial adverse changes in any of the physical conditions within the area affected by the project, including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. A social or economic change by itself is not considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant. A definitive statewide meaning for the term "significant effect" is not possible because environmental effects caused by a project vary with the setting.

Effects of the Proposed Project
This section of the document discusses the effects of the proposed project and provides the required California Environmental Quality Act determinations.

California Environmental Quality Act Guidelines (Section 15126.6(e)(2) require that an environmentally superior alternative be identified among the alternatives considered. Generally, the environmentally superior alternative is defined as the alternative that results in the least adverse environmental impacts to the project site and the surrounding areas. If the environmentally superior alternative is determined to be the No-Build Alternative, the environmental document must identify an environmentally superior alternative among the other alternatives considered.

The environmentally superior alternative for this project would be the No-Build Alternative because it best avoids impacts as compared to the Build Alternatives. However, the No-Build Alternative does not meet the purpose and need of the project and would make no improvements to State Route 41, keeping the facility in its existing condition.

Table 3.1 compares the impacts of both Build Alternatives for the determination of the environmentally superior alternative. Impacts in bold text indicate the greater or larger impacts.

Table 3.1 Environmentally Superior Alternative

Criteria	Alternative2	Alternative 4,
HUMAN ENVIRONMENT		
FARMLAND: • Total (agriculturally zoned)	223 acres	**230 acres**
• Prime and Unique	53 acres	**59 acres**
• Williamson Act	4.9 acres	**27.8 acres**
COMMUNITY CHARACTER and COHESION	Would not disrupt existing community character and cohesion	**Disrupts existing businesses along west side of State Route 41 between Avenues 14 and 15**
RELOCATIONS: Business Displacements	0	**26**
PHYSICAL ENVIRONMENT		
WATER QUALITY/ STORM WATER RUNOFF: • Basins	4	**5**
• Excavation (basin)	71 acres	**88 acres**
• Disturbed soil area	**370 acres**	285 acres
• Impervious (solid) surface area	**65 acres**	55 acres
HAZARDOUS WASTE or MATERIALS	No further investigation recommended	**Further investigation needed due to gas station acquisition**
NOISE and VIBRATION	No noise abatement is recommended as there would be no increase in traffic noise levels	**Noise abatement is recommended**
BIOLOGICAL ENVIRONMENT		
NATURAL COMMUNITIES (Impacts)	Vernal Pool Communities: Permanent = 1.19 acres Temporary = 0.51 acre	**Vernal Pool Communities:** **Permanent = 1.54 acres** **Temporary = 0.61 acre**
WETLANDS (Impacts)	**Wetlands:** **Permanent = 3.56 acres** **Temporary = 2.44 acres**	Wetlands: Permanent = 1.24 acres Temporary = 2.48 acres
OTHER WATERS of the U.S. (Estimated Impacts)	Waters: Permanent = 1.44 acres Temporary = 3.16 acres	**Waters:** **Permanent = 3.96 acres** **Temporary = 0.95 acre**
PLANT SPECIES (Impacts to habitat)		
	Sanford's arrowhead habitat impacts: Permanent = 1.15 acres Temporary = 0.68 acre	**Sanford's arrowhead habitat impacts:** **Permanent = 3.19 acres** **Temporary = 0.08 acre**

Criteria	Alternative2	Alternative 4,
	Spiny-sepaled button celery habitat impacts: **Permanent = 4.75 acres** **Temporary = 2.95 acres**	Spiny-sepaled button celery habitat impacts: Permanent = 2.78 acres Temporary = 3.10 acres
	Brassy bryum habitat impacts: Permanent = 80.66 acres Temporary = 42.49 acres	**Brassy bryum habitat impacts:** **Permanent = 104.67 acres** **Temporary = 54.34 acres**
ANIMAL SPECIES (Impacts to habitat)	Burrowing owl habitat impacts: Permanent = 143.47 acres Temporary = 71.93 acres	**Burrowing owl habitat impacts:** **Permanent = 172.99 acres** **Temporary = 72.31 acres**
	Bat species habitat impacts: **Permanent = 200.81 acres** **Temporary = 79.51 acres**	Bat species habitat impacts: Permanent = 199.13 acres Temporary = 74.80 acres
	Western spadefoot toad habitat impacts: Permanent = 143.47 acres Temporary = 71.93 acres	**Western spadefoot toad habitat impacts:** **Permanent = 172.99 acres** **Temporary = 72.31 acres**
	American badger habitat: Permanent = 83.99 acres Temporary = 45.96 acres	**American badger habitat:** **Permanent = 104.67 acres** **Temporary = 54.34 acres**
	Northern Harrier: Permanent = 143.47 acres Temporary = 71.93 acres	**Northern Harrier:** **Permanent = 172.99 acres** **Temporary = 72.31 acres**
	Loggerhead Shrike: Permanent = 144.41 acres Temporary = 71.93 acres	**Loggerhead Shrike:** **Permanent = 176.62 acres** **Temporary = 72.31 acres**
THREATENED and ENDANGERED SPECIES (Impacts to habitat)	ANIMALS	
	California tiger salamander **Critical Breeding habitat impacts:** **Permanent = 1.21 acres** **Temporary = 2.55 acres** **Non-Critical Breeding habitat impacts:** **Permanent = 0.0 acre** **Temporary = 0.0 acre** **Critical Temporary Aquatic habitat impacts:** **Permanent = 0.34 acres** **Temporary = 2.41 acres** **Non-Critical Temporary Aquatic habitat impacts:** **Permanent = 4.14 acres** **Temporary = 0.53 acre** **Critical Upland habitat impacts:** **Permanent = 38.28 acres** **Temporary = 27.19 acres** **Non-Critical Upland habitat impacts:** **Permanent = 155.50 acres** **Temporary = 46.83 acres**	California tiger salamander **Critical Breeding** habitat impacts: Permanent = 0.0 acre Temporary = 0.0 acre **Non-Critical Breeding** habitat impacts: Permanent = 3.71 acres Temporary = 0.23 acre **Critical Temporary Aquatic** habitat impacts: Permanent = 0.38 acre Temporary = 2.37 acres **Non-Critical Temporary Aquatic** habitat impacts: Permanent = 2.16 acres Temporary = 0.79 acre **Critical Upland** habitat impacts: Permanent = 40.06 acres Temporary = 26.36 acres **Non-Critical Upland** habitat impacts: Permanent = 149.19 acres Temporary = 45.17 acres

Criteria	Alternative2	Alternative 4,
	Vernal pool fairy shrimp **Critical habitat impacts:** **Permanent = 2.93 acres** **Temporary = 0.45 acre** **Non-Critical habitat impacts:** **Permanent = 2.32 acres** **Temporary = 2.73 acre**	Vernal pool fairy shrimp **Critical** habitat impacts: Permanent = 0.79 acre Temporary = 0.44 acre **Non-Critical** habitat impacts: Permanent = 3.82 acres Temporary = 2.98 acres
	San Joaquin kit fox habitat impacts: Permanent = 137.62 acres Temporary = 70.14 acres	**San Joaquin kit fox habitat impacts:** **Permanent = 172.38 acres** **Temporary = 71.29 acres**
	Swainson's hawk habitat impacts: Permanent = 149.46 acres Temporary = 71.93 acres	**Swainson's hawk habitat impacts:** **Permanent = 178.45 acres** **Temporary = 72.31 acres**
	Tricolored blackbird habitat impacts: Permanent = 149.47 acres Temporary =71.93 acres	**Tricolored blackbird habitat impacts:** **Permanent = 172.99 acres** **Temporary = 72.31 acres**
	Crotch bumble bee habitat: Permanent impacts = 83.99 acres Temporary Impacts = 45.96 acres	**Crotch bumble bee habitat:** **Permanent impacts = 104.67 acres** **Temporary Impacts =54.34 acres**
	PLANTS	
	Hairy orcutt grass and San Joaquin Valley orcutt grass: **Critical habitat impacts:** **Permanent = 4.21 acres** **Temporary = 2.79 acres** **Non-Critical habitat impacts:** **Permanent = 0.59 acre** **Temporary = 0.17 acre**	Hairy orcutt grass and San Joaquin Valley orcutt grass **Critical** habitat impacts: Permanent = 2.59 acres Temporary = 2.72 acres **Non-Critical** habitat impacts: Permanent = 0.45 acre Temporary = 0.10 acre
	Hartweg's golden sunburst habitat impacts: Permanent = 27.40 acre Temporary = 22.38 acre	**Hartweg's golden sunburst habitat impacts:** **Permanent = 28.86 acres** **Temporary = 21.49 acres**
	Succulent owl's clover **Critical habitat impacts:** **Permanent = 4.53 acres** **Temporary = 2.90 acres** **Non-Critical habitat impacts:** **Permanent = 0.27 acre** **Temporary = 0.05 acre**	Succulent owl's clover **Critical** habitat impacts: Permanent = 2.50 acres Temporary = 2.70 acres **Non-Critical** habitat impacts: Permanent = 0.54 acre Temporary = 0.13 acre

Each Build Alternative meets the purpose and need of the project. Overall Alternative 4 is the environmentally superior alternative.

Alternative 2 results in fewer impacts to the human and physical environments than Alternative 4. Alternative 4 acquires slightly more farmland

and affects more Williamson Act property than Alternative 2. Alternative 4 displaces 26 businesses including a gas station with a potential for hazardous waste, and has the potential to excavate 17 more acres for one more water detention basin in an area sensitive for paleontological resources than Alternative 2. Alternative 4 also requires noise abatement because it moves traffic closer to receptors, including a church.

In regard to the biological environment, however, preliminary wetland delineations determined that Alternative 2 would have more impacts to natural communities and wetlands than Alternative 4. Alternative 2 would convert more non-critical aquatic habitat, and critical and non-critical upland habitat of the California tiger salamander, and would convert more critical habitat of the vernal pool fairy shrimp, but would have less adverse environmental impacts to waters of the U.S. than Alternative 4.

No Effects
Refer to the beginning of Chapter 2 for these environmental issues that were considered but, as part of the scoping and environmental analysis done for the project, had no adverse impacts or “no effects” identified:

- Coastal Zone
- Wild and Scenic Rivers
- Parks and Recreation Facilities
- Timberlands
- Environmental Justice
- Hydrology/Floodplain
- Geology/Soils/Seismic/Topography
- Energy
- Biological Resources
    - caper-fruited tropidocarpum, Hoover’s calycadenia, California satintail, dwarf downingia, shining navarretia, and Ewan’s larkspur

3.2.1 Less than Significant Effects of the Proposed Project

Caltrans determined that the proposed project would have a “less than significant impact” on all environmental resources identified within the project corridor except for those discussed in the next section. Refer to Chapter 2 for a discussion of the affected environment, environmental consequences, and measures that further minimize impacts to the following environmental resources within the project corridor:

- Land Use/Existing and Future Land Use – The project would be consistent with the overall policies of the Madera County General Plan, though the County of Madera would need to amend its General Plan to show the new future freeway alignment before construction of the project.

- Growth – Though the project would slightly improve travel times within the project limits, the time savings would not be substantial enough to attract additional growth. The project is not expected to cause any new growth that has not already been planned or approved by the County of Madera.

- Farmland – The amount of farmland potentially converted as a result of the project would be minimal in comparison to the amount of Farmland in Madera County. Also, under the Farmland Protection Policy Act, if the farmland impact rating exceeds 160 points, additional alternatives must be considered that would lessen the adverse effects to farmlands. The farmland impact rating of either Build Alternative did not exceed 160 points.

- Community Impacts/Community Cohesion – Alternative 2 would not alter the rural setting of, or divide, the Bonadelle Ranchos Number 9 community. Although Alternative 4 would result in the relocation of businesses near the Bonadelle Ranchos Number 9 subdivision during Phase 2, based on the type of services these businesses provide and their longevity, it does not appear that these businesses contribute to the cohesiveness of the subdivision.

- Community Impacts/Relocations – In accordance with Caltrans policies and the law, Caltrans would provide relocation assistance payments and counseling in accordance with the Uniform Act and Relocation Assistance Program of 1970 (as amended). An adequate supply of comparable commercial sites is available for relocation of affected businesses within a 15-mile radius of the project area (in Madera County and the City of Madera as well as in Fresno, Clovis, and several other rural neighborhoods).

- Utilities and Emergency Services – Caltrans initiated consultation with the affected utilities to coordinate the details for relocations and easements. These coordination efforts, which are part of Caltrans' standard practices, will prevent any significant interruptions in service.

- Traffic and Transportation/Pedestrian and Bicycle Facilities – As part of standard Caltrans practices, during construction, a Traffic Management Plan would be developed to handle local traffic patterns and reduce delay, congestion, and the likelihood of accidents. A Class III Bikeway or Bike Route could be incorporated into the expressway and would be considered during the design phase of the project.

- Cultural Resources –Consultation with the State Office of Historic Preservation was conducted regarding the Finding of Effect for the Madera Canal Lateral 6.2. Concurrence from the State Historic Preservation Officer regarding a Finding of No Adverse Effect was

received on March 1, 2016. A Caltrans Principal Architectural Historian will review construction plans at 60 percent and 95 percent constructability and monitor construction activities at the Madera Canal Lateral 6.2. Consultation with Native Americans was initiated and would continue throughout the life of the proposed project. If cultural materials or remains are encountered during construction, it is the policy of Caltrans that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the discovery.

- Water Quality and Storm Water Runoff – Best Management Practices in the required Storm Water Pollution Prevention Plan would prevent any water quality impacts. All disturbed areas would be restored to preconstruction contours with permanent erosion control per requirements of the Construction General Permit.

- Hazardous Waste and Materials – No known hazardous materials are expected to be disturbed by the project. However, Caltrans Standard Special Provisions and Non-Standard Special Provisions pertaining to hazardous waste would be provided during the Plans, Specifications and Estimates phase of the project prior to construction, including special provisions to address aerially deposited lead and lead found in white and yellow striping/paint/pavement markings. These measures would ensure that no significant impact would occur in the event that hazardous materials are encountered.

- Air Quality – The project conforms with the State Implementation Plans for achieving National Ambient Air Quality Standards, and the project is not a “Project of Air Quality Concern.” Also, the project is not expected to increase traffic, but does improve traffic flow and reduce congestion.

  Air quality concerns during construction are temporary. The biggest concern would be dust generated from excavation. 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.

  The San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review Rule) applies to construction equipment emissions for transportation projects that exceed two tons of either PM_{10} and/or NO_X air pollutants. Compliance with the rule would ensure that any unexpected impacts are minimized.

- Invasive Species – The introduction of invasive species is not expected to occur. Caltrans invasive species policy guidelines, Standard Special Provisions, and best management practices would further reduce the

potential that this project would introduce, transport, or spread invasive species to and/or from the project site.

Biological Resources

Plant Species

Brassy Bryum – Limited data exists on the biology and distribution of this moss species. However, it is assumed that the species may be present within the project impact area due to the presence of potentially suitable habitat. However, this plant species was not observed during the botanical surveys conducted for this project.

There is potentially suitable habitat for the brassy bryum within the impact area for Alternative 2. Therefore, Alternative 2 has the potential to permanently affect 80.66 acres and temporarily affect 42.49 acres of the suitable habitat.

Construction of Alternative 4 in two phases has the potential to permanently affect 104.67 acres and temporarily affect 54.34 acres of the suitable habitat.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for brassy bryum, as well as the following:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans Right of Way once Caltrans biologists are able to access all properties within the Action Area.

- If this species is observed, they would be avoided and protected with an Environmentally Sensitive Area if possible. If avoidance is not possible, additional impact minimization measures may be implemented, which could include the collection and stockpiling of the top 4-6 inches of soil for re-application once construction is complete.

Sanford's Arrowhead – Though the likelihood of this special-status species occurring on-site is low, there is potentially suitable habitat for Sanford's arrowhead within the impact area for Alternative 2. Therefore, Alternative 2 has the potential to permanently affect 1.15 acres and temporarily affect 0.68 acre of the suitable habitat.

There is potentially suitable habitat for the Sanford's arrowhead within the impact area for Alternative 4. Therefore, construction of Alternative 4 in two phases has the potential to permanently affect 3.19 acres and temporarily affect 0.08 acre of potentially suitable habitat.

All temporary effects will be returned to pre-project conditions. This species occupies freshwater habitats and is likely to occur in areas that contain permanent water features. Potentially suitable habitat for this species may be present in some of the hydrologic features that retain water for longer periods of time, which may include the Lateral 6.2 canal, two ephemeral streams, four non-wetland channels, a potential seasonal wetland swale, one seasonal marsh, and two drainage basins. Caltrans does not expect any of the other hydrologic features within the Action Area to provide suitable habitat for this species. The project's permanent impacts to suitable habitat are considered less than significant due to the amount of other available suitable habitat throughout the area and beyond.

Although no significant impact to special status species has been identified, the same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for Sanford's arrowhead, as well as the following:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans Right of Way once Caltrans biologists are able to access all properties within the Action Area.
- If this species is observed, they would be avoided and protected with an Environmentally Sensitive Area if possible. If avoidance is not possible, additional impact minimization measures may be implemented, which could include the collection and stockpiling of the top 4-6 inches of soil for re-application once construction is complete.

Spiny-sepaled button celery – This special-status species was identified on-site. Within the impact area for Alternative 2, there is potentially suitable habitat for spiny-sepaled button celery. Therefore, Alternative 2 has the potential to permanently affect 4.75 acres and temporarily affect 2.95 acres of the suitable habitat.

There is potentially suitable habitat for the spiny-sepaled button celery. Therefore, construction of Alternative 4 in two phases has the potential to permanently affect 2.78 acres and temporarily affect 3.10 acres of the suitable habitat.

All temporary effects will be returned to pre-project conditions. This species is found in vernal pools, seasonal wetlands, and seasonal wetland swales, which have been identified within portions of non-native grassland north of Avenue 15 and southeast of Avenue 12. The Action Area contains 30.42 acres of wetlands, which includes vernal pool complexes. The permanent

impacts to potentially suitable habitat for this species, would be less than significant with mitigation due to the amount of other available potentially suitable habitat throughout the area and beyond. The mitigation identified for impacts to vernal pool fairy shrimp will also compensate for the effects to this species' potentially suitable habitat.

Although no significant impact to special status species has been identified, the same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for spiny-sepaled button celery, as well as the following:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans Right of Way once Caltrans biologists are able to access all properties within the Action Area.

- If this species is observed, they would be avoided and protected with an Environmentally Sensitive Area if possible. If avoidance is not possible, additional impact minimization measures may be implemented, which could include the collection and stockpiling of the top 4-6 inches of soil for re-application once construction is complete.

Animal Species

Burrowing owl - No direct impacts to individual burrowing owls are expected from the project, but impacts to potentially suitable habitat will occur. Each build alternative would also implement Caltrans Standard Special Provisions. The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the burrowing owl. Incorporation of these measures in the construction contract will further ensure that impacts to the species are avoided. However, each Build Alternative has the potential to convert suitable breeding and foraging habitat, which has an indirect effect on the species bordering the project corridor.

Alternative 2 has the potential to permanently affect 143.47 acres and temporarily affect 71.93 acres of potentially suitable breeding and foraging habitat for the burrowing owl.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable breeding and foraging habitat for the burrowing owl.

All temporary effects will be returned to pre-project conditions. The potentially suitable habitat for this species within the Action Area for this project is non-

native grasslands, cultivated oats, and the western fringe of the Madera Pools Mitigation Bank site. The Action Area contains 675.61 acres of potentially suitable habitat for this species in the Action Area. The project permanently impacts to that suitable habitat, 143.47 acres for Alternative 2 and 172.99 acres for the phased construction of Alternative 4, are considered less than significant due to the amount of other available suitable habitat throughout the area.

Pallid Bat and Western Mastiff Bat - An unidentified species of bat was observed in the Action Area in 2015, which may have been the pallid bat. Therefore, there is a potential for individual pallid bats to be directly impacted by becoming injured or killed because of this project. Permanent and temporary loss of potentially suitable roosting and foraging habitat could also occur.

Alternative 2 has the potential to permanently affect 200.81 acres and temporarily affect 79.51 acres of potentially suitable foraging and roosting habitat for bat species.

The phased construction of Alternative 4 has the potential to permanently affect 199.13 acres and temporarily affect 74.80 acres of potentially suitable foraging and roosting habitat for bat species.

The permanent impacts to potentially suitable habitat—200.81 acres for Alternative 2 and 199.13 acres for the phased construction of Alternative 4—are considered less than significant due to the amount of other available suitable foraging and roosting habitat throughout the area.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the pallid bat and western mastiff bat, as well as the following:

- A qualified biologist shall conduct visual and acoustic bat surveys to determine if bats are currently using the Action Area and to determine if additional avoidance and minimization measures are needed. Additional avoidance and minimization measures may include but are not limited to the installation of bat exclusion measures in areas used for roosting. Any exclusion measures would be implemented in coordination with the California Department of Fish and Wildlife.

American Badger -No impacts to individual American badgers are expected for the proposed project, however impacts would occur for potentially suitable habitat for the American badger.

Alternative 2 has the potential to permanently affect 104.67 acres and temporarily affect 54.34 acres of potentially suitable foraging and roosting habitat for the American badger.

If Alternative 4 is constructed in two phases, it has the potential to permanently affect 104.7 acres and temporarily affect 54.3 acres of potentially suitable foraging habitat for the American badger.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the American badger, as well as the following:

- Prior to construction, surveys would be completed in areas of potentially suitable habitat to confirm that no badgers are using the Action Area for denning. If any dens that resemble those of the badger are observed, Caltrans would coordinate additional avoidance and minimization measures with the California Department of Fish and Wildlife.

Northern Harrier - Each Build Alternative would implement Caltrans Standard Special Provisions. Implementation of these measures will ensure that impacts to individuals are minimized. However, each Build Alternative would convert potentially suitable nesting and foraging habitat.

Alternative 2 has the potential to permanently affect 143.47 acres and temporarily affect 71.93 acres of potentially suitable nesting and foraging habitat for the northern harrier.

If Alternative 4 is constructed in two phases, it has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable foraging and nesting habitat for the northern harrier.

The following are the Standard Special Provisions that will be implemented:

- Preconstruction migratory nesting bird surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.
- If any nesting pairs of northern harriers are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds, which may include but are not limited to:
    - The establishment of a 500-foot Environmentally Sensitive Area buffer and having a biological monitor present during construction activities that occur in close proximity to the nest.

Loggerhead Shrike - Each Build Alternative would implement Caltrans Standard Special Provisions. Implementation of these measures will ensure that impacts to individuals are minimized. However, each Build Alternative would convert potentially suitable nesting and foraging habitat.

Alternative 2 has the potential to permanently affect 144.41 acres and temporarily affect 71.93 acres of potentially suitable foraging and nesting habitat for the loggerhead shrike.

If Alternative 4 is constructed in two phases, it has the potential to permanently affect 176.62 acres and temporarily affect 72.31 acres of potentially suitable foraging and nesting habitat for the loggerhead shrike.

The following are the Standard Special Provisions that will be implemented:

- Preconstruction migratory nesting bird surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.
- If any nesting pairs of loggerhead shrike are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds which may include but are not limited to:
    - The establishment of a 100-foot Environmentally Sensitive Area (ESA) buffer and having a biological monitor present during construction activities that occur in close proximity to the nest.

Migratory Birds – It is anticipated that 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.

- Clearing and grubbing will be completed outside of the nesting season, unless otherwise deemed unfeasible, to avoid unnecessary impacts to migratory birds.
- A qualified biologist would conduct preconstruction surveys for migratory birds should construction begin within the nesting season (February 1 through September 30), or prior to any clearing and grubbing during the nesting season.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any clearing, grubbing, or ground-breaking activities to review the importance of avoiding impacts to nesting migratory birds observed on the project.
- Any nests discovered during the migratory bird clearance surveys will be Environmentally Sensitive Area (ESA) protected, with an appropriate “no-work” buffer, to protect young birds until they are able to fledge from their nest.

Visual/Aesthetics

Both Build Alternatives would be above grade (raised), and the changes to the roadway are expected to be visually noticeable to all users. Local residents, employees of the local businesses, and daily commuters who would use the new roadway are expected to notice the obvious changes in the visual environment.

At Avenue 11, both Build Alternatives would construct an additional bridge for southbound traffic to the west of the existing bridge, which would cause a greater visual impact because it differs from the existing roadway. There are some at-grade frontage roads that parallel the highway to the west and an area of residential, light industrial, and storage facilities near Avenue 11 that would be most visually affected by the raised alignment and the proposed southbound bridge.

The visual impact to the viewers of the highway are considered less than significant because the new bridge undercrossing will be built adjacent to the existing structure.

Proposed minimization efforts would enhance the positive visual effects of the project by providing visual consistency to the corridor and help the elevated structures to blend in with their backgrounds. Caltrans would implement the following measures to reduce the impacts by enhancing the positive aesthetic effects of the new structures and minimizing the adverse effects:

- The project would use aesthetic enhancements on the structure and texture on the slope paving under the bridge abutments.
- Areas beyond the gore would use a contrasting surface treatment.
- Any retaining walls would be designed with aesthetic treatments to match treatments on other structures.

Other measures, not required under the California Environmental Quality Act, are also incorporated into the project to further reduce impacts to the visual/aesthetics resources. These measures are discussed under the Avoidance, Minimization, and Mitigation Measures heading in Section 2.1.7 Visual/Aesthetics of this document.

3.2.2 Less than Significant Environmental Effects of the Proposed Project with Mitigation

Noise

When determining whether a noise impact is significant under the California Environmental Quality Act, the baseline noise level and the build noise level are compared. The California Environmental Quality Act noise analysis is

completely independent of the National Environmental Policy Act—23 Code of Federal Regulations 772 analysis, which is centered on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include: the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected and absolute noise level.

Caltrans determined that Alternative 2 would not result in a noise impact. However, if Alternative 4 is selected as the preferred alternative, it would move traffic closer to the residences/commercial properties between Avenue 14 and Avenue 15, which would increase the existing noise levels. The future edge of the traveled way would be about 70 feet from Madera Hills Church. The existing noise level for the church is 55 decibels, and the future noise level is predicted to be 71 decibels, an increase of 16 decibels. This impact is considered significant because the predicted future noise level with the project substantially exceeds the existing noise level.

Results of the initial noise analysis indicated that a soundwall placed on the shoulder of the roadway would be recommended if Alternative 4 is selected as the preferred alternative.

As discussed above in Section 3.2.2, all potential impacts identified for the project can be mitigated to a level below significant.

Paleontology

All ground disturbance during general construction excavation activities for Alternative 2 and Alternative 4 would have an effect on the Turlock Lake and Modesto Formations. Alternative 2 includes five water detention basins, which would require 71 acres of excavation. Alternative 4 includes five water detention basins, which would require 88 acres of excavation.

These impacts are considered significant because the Turlock Lake and Modesto Formations have high sensitivity to include fossils.

Mitigation required under the California Environmental Quality Act would reduce the impacts to less than significant by recovering, protecting, and preserving significant fossil resources:

- All open excavations more than 5 feet deep in native sediments of the Modesto and Turlock Lake Formations should be monitored full-time by a qualified paleontologist.
- During grading, sand interbeds within the Riverbank Formation should be monitored part-time by a qualified paleontologist. Sand interbeds are the sand layers interspersed among layers of other soil material, like silt or clay.

- During grading, the gravels of the Riverbank Formation, and North Merced Gravel, Mehrten, Auberry, and Ione Formations should be spot checked by a qualified paleontologist.
- During grading, full-time monitoring of the Mehrten and Riverbank Formations may be required as determined by the Principal Paleontologist depending on the conditions encountered.
- The Principal Paleontologist would meet the qualifications outlined under preparer qualifications in the Caltrans Standard Environmental Reference, Volume 1, Chapter 8, and would be responsible to implement the mitigation plan and maintain professional standards of work.
- All project personnel shall receive training by a qualified paleontologist before the start of work.
- Recovered fossils would be prepared to the point of identification and placed in an approved paleontological repository.

Biological Environment
The proposed project may have significant impacts to biological resources.

Details of compensatory mitigation measures pertaining to federally-listed species were developed as part of Caltrans' formal consultation with the U.S. Fish and Wildlife Service in December 14, 2018. A Biological Assessment was prepared, and Section 7 formal consultation was initiated with the U.S. Fish and Wildlife Service for potential effects to:

- Threatened and endangered species

Details of compensatory mitigation measures will be finalized through Caltrans' consultation with the California Department of Fish and Wildlife when Caltrans applies for an Incidental Take Permit (ITP) for potential effects to state-listed species and when Caltrans enters coordination with the U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife for an individual 404 permit, 401 water quality certification, and 1600 permit, respectively, for potential impacts to the following:

- Animal species
- Natural communities
- Wetlands and other waters

Animal Species
Western spadefoot toad – The project has the potential to result in direct impacts to western spadefoot toads. Therefore, each Build Alternative would implement Caltrans Standard Special Provisions. These special provisions

will help reduce individual mortalities but cannot ensure that no mortalities will occur. Additionally, each Build Alternative has the potential to convert suitable upland burrowing and aquatic breeding habitat.

Alternative 2 has the potential to permanently affect 143.47 acres and temporarily affect 71.93 acres of potentially suitable breeding habitat and upland burrowing habitat for the western spadefoot toad.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable breeding habitat and upland burrowing habitat for the western spadefoot toad.

This species is mostly found in upland burrows and around margins of vernal pool complexes, wetlands, and other waters of the U.S. Permanent impacts to the potentially suitable habitat for this species are relatively minor due to the amount of other available suitable habitat throughout the area, but in combination with the potential for individual mortalities are considered significant.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for western spadefoot toad, as well as the following:

- pre-construction surveys for this species would occur during the breeding season prior to construction, at the time when spadefoots are observed emerging in nearby areas of suitable habitat. Any spadefoots observed in the Project Footprint may be relocated to areas of suitable habitat beyond, to minimize impacts to any on-site individuals. Any relocation efforts would be conducted in coordination with the California Department of Fish and Wildlife.

Natural Communities – Vernal Pools

The Action Area contains mapped soils associated with northern hardpan vernal pools, which have the potential to include vernal pools that vary in size and are typically found in the lower portions of the Great Central Valley floor, as well as mapped soils associated with northern claypan vernal pools, which have the potential to include vernal pools that occur throughout the non-native grassland areas. Claypan and hardpan soils are not mutually exclusive, and some soil series overlap, sometimes containing a deep hardpan layer overlain by a claypan layer. A total of 158 vernal pools, totaling approximately 4.99 acres, were found in the Action Area.

Alternative 2 would permanently impact 1.19 acres and temporarily impact 0.51 acre of both northern hardpan and northern claypan vernal pool communities.

If Alternative 4 is constructed in two phases, 1.54 acres of permanent impacts would occur and 0.61 acre of temporary impacts would occur.

Permanent impacts to northern hardpan vernal pool communities wouldplace fill within these hydrologic resources and subsequently fragment the vernal pool complex in the non-native grassland areas north of Avenue 15 and southeast of Avenue 12. These impacts are considered significant because vernal pools and swale systems within these areas are hydrologically connected and form complexes that feed into topographically lower-level vernal pool complexes within the area.

The following Caltrans policies would be implemented prior to and during construction:

- Work will be conducted outside the rainy season when flows are absent or low.
- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.
- Any portions of Northern Claypan Vernal Pools or other sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be identified on the Construction Plans and included in the Plans, Specifications, and Estimates section of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.
- A qualified biologist would be present during initial ground disturbance, including clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals), would be restricted to the designated construction staging areas.

- Best Management Practices (BMPs) were included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.
    - Installation of measures to ensure that water quality is protected, both during and after construction.
    - Installation of measures to prevent long-term erosion occurring after construction is complete.
- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

Proposed Compensatory Mitigation for Impacts to Vernal Pool Communities

- Caltrans would submit a request to the U.S. Army Corps of Engineers for a Jurisdictional Determination. All wetlands determined to be jurisdictional by the U.S. Army Corps of Engineers would be mitigated for by Caltrans pursuant to the Clean Water Act.
- Caltrans would coordinate with the California Department of Fish and Wildlife to develop a compensatory mitigation plan consistent with the U.S. Army Corps of Engineers and the Environmental Protection Agency's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 Code of Federal Regulations Parts 325 and 332 and 40 Code of Federal Regulations Part 230).
- Caltrans would apply appropriate compensatory ratios for the loss of habitat determined during coordination and consultation with U.S. Fish and Wildlife Service and in cooperation with the California Department of Fish and Wildlife. Based on formal consultation with the U.S. Fish and Wildlife Service, Caltrans plans to mitigate for permanent impacts at a 5:1 compensation ratio, indirect impacts will be compensated at a 1.75:1 ratio, and temporary impacts with be compensated for at a 1.1:1 ratio.

- Caltrans' preferred method of compensation for impacts would be to purchase credits at a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved mitigation bank, if one is available within the project service area prior to the start of construction. However, if a bank is not available within the project service area, then permittee-responsible mitigation would be completed.

Wetlands and Other Waters of the U.S.
The Action Area contains a total of 39.86 acres of potential jurisdictional wetlands and other waters of the U.S. that are under evaluation for jurisdiction by the U.S. Army Corps of Engineers. Caltrans would request a verification of these wetlands and other waters from the U.S. Army Corps of Engineers prior to the project being Ready to List. .

Alternative 2 would impact 12.30 acres of potentially jurisdictional wetlands and other waters of the U.S. and the phased construction of Alternative 4 would impact 10.78 acres of potentially jurisdictional wetlands and other waters of the U.S.

Because wetlands are protected under a number of laws and regulations, these impacts are considered significant, and legal/regulatory requirements dictate how these impacts would be mitigated.

During the Plans, Specifications and Estimates (PS&E) phase of the project, a permit pursuant to Section 404 of the Clean Water Act would be required from the U.S. Army Corps of Engineers for the discharge of fill material into potential waters of the U.S.

During the Plans, Specifications and Estimates phase of the project, a state certification pursuant to Section 401 of the Clean Water Act would be required from the Regional Water Quality Board for discharges into potential waters of the State.

Caltrans would submit a notification to the California Department of Fish and Wildlife for a Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code for work within waterways.

After Caltrans biologists complete the Aquatic Resource Delineation Report, a Jurisdictional Determination request would be submitted to the U.S. Army Corps of Engineers for verification. Caltrans would coordinate with the U.S. Army Corps of Engineers to develop a compensatory mitigation plan consistent with their and the Environmental Protection Agency's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 Code of Federal Regulations Parts 325 and 332 and 40 Code of Federal Regulations Part 230). Caltrans would additionally coordinate with the Regional Water Quality Control Board and the California Department of Fish

and Wildlife regarding compensation for impacts to aquatic resources under their jurisdiction.

To ensure “no net loss” of wetlands and other waters of the U.S., one or more of the following options could be used to compensate for the permanent loss of jurisdictional wetlands and other waters:

- Creation of like aquatic resources.
- Restoration of like aquatic resources.
- Preservation of like aquatic resources.
- The purchase of credits at an approved mitigation bank.

Other measures, not required under the California Environmental Quality Act, are also incorporated into the project to further reduce impacts to the wetlands and waters of the U.S. These measures are discussed under the Avoidance, Minimization, and Mitigation Measures heading in Section 2.3.2 Wetlands and Waters of the U.S. of this document.

Threatened and Endangered Species - Animals
Caltrans biologists determined that there were potentially six animal species and five plant species listed as federally or state threatened or endangered that may be affected by the proposed project.

California tiger salamander - Some of the on-site vernal pools and hydrologic features within the Action Area are expected to provide suitable breeding habitat for California tiger salamanders. Likewise, other on-site vernal pools, seasonal wetlands and swales, and seasonal marsh habitat were initially thought to provide suitable breeding habitat during years of above average rainfall; however, based on surveys conducted on the Madera Pools Mitigation Bank site in 2019, Caltrans has determined these other hydrologic features only provide temporary aquatic habitat for salamanders moving between aquatic breeding ponds and upland sites. Due to the presence of ground squirrel and other small mammal burrows, the on-site non-native grassland habitat, undeveloped residential and commercial lots, and agricultural areas consisting of vineyard, pistachio, and olive orchard, and cultivated oat fields are expected to provide suitable upland habitat.

Within the impact area for Alternative 2 are about 866.37 acres of potentially suitable habitat for the California tiger salamander. Alternative 2 would permanently affect 39.83 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 159.64 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat. Temporary impacts would include 32.15 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 47.35 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat.

Within the impact area for Alternative 4 are about 866.37 acres of potentially suitable habitat for the California tiger salamander. The phased construction of Alternative 4 would permanently affect 40.44 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 155.06 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat. Temporary impacts would include 28.73 acres of critical upland, temporary aquatic habitat, and aquatic breeding habitat, and 46.19 acres of non-critical upland, temporary aquatic habitat, and aquatic breeding habitat.

Both Build Alternatives may also have indirect impacts to the California tiger salamander, which result when permanent or temporary impacts occur to at least half of an entire aquatic feature, making the remaining portion of the feature vulnerable to degradation over time.

These impacts are considered significant under the California Environmental Quality Act because the loss of critical habitat and/or fragmentation of existing critical habitat interferes with the movement of the species and breeding practices.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the California tiger salamander, along with the following:

- The dual-purpose ESA fencing to be installed will also serve to exclude California tiger salamanders and shall be additionally applied to off-site areas adjacent to the Project Footprint that contain suitable upland grassland habitat or aquatic features that may be used by this species.
- Prior to construction and after the installation of the ESA fencing, potentially suitable burrows will be hand-excavated by a U.S. Fish and Wildlife Service - and California Department of Fish and Wildlife - approved biologist. Any California tiger salamanders that are discovered will be relocated to a suitable upland burrow outside of the Project Footprint, based on prior coordination and approval from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.
- If a 70% or greater chance of rainfall is predicted within 24 hours of a project activity, a qualified biologist shall survey the project site, for the presence of migrating California tiger salamanders, prior to the start of construction each day that rain is forecasted.
- No project work that could impact migrating California tiger salamanders shall occur during or within 48 hours following significant rain events, defined as ¼-inch or more of rain in a 24-hour period.

- For work conducted during the California tiger salamander migration season (November 1 – May 31) a qualified biologist will survey active work areas (including access roads) in the morning, following measurable precipitation that measures less than ¼-inch. Construction may not begin until a biologist has confirmed that no California tiger salamanders are in the work area.

- Basins and/or trenches greater than 6 inches deep will be required to be covered or have an escape ramp present. These will be checked daily for trapped California tiger salamanders and other wildlife. Before they are filled in, they will be inspected thoroughly for trapped wildlife.

- Any pipes or culverts stored on-site must be capped to prevent entry by a California tiger salamander. Pipes must be inspected before installation to ensure that California tiger salamanders have not taken cover inside. If any California tiger salamanders are found in pipes or culverts, the assigned Caltrans biologist will be notified.

- Vehicle travel will be limited to established roadways unless otherwise designated. Any travel beyond the paved highway shall adhere to a 20-mile-per-hour daytime speed limit and 10-mile-per-hour nighttime speed limit.

Proposed Compensatory Mitigation for Impacts to California tiger salamander:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, temporary impacts will be compensated for at a 1.1:1 ratio and impacts to temporary aquatic habitat will be compensated for at a 0.5:1 ratio.

Vernal pool fairy shrimp - Vernal pool fairy shrimp habitat includes seasonal wetlands, seasonal wetland swales and vernal pools that would be directly and indirectly affected by each alignment. Designated critical habitat is determined by the U.S. Fish and Wildlife Service. The area that does not contain designated Critical Habitat is considered non-critical habitat.

There are about 34.15 acres of suitable habitat for the vernal pool fairy shrimp within the Action Area. Alternative 2 has the potential to permanently affect 2.93 acres of critical and 2.32 acres of non-critical habitat for the vernal pool

fairy shrimp. Temporary impacts would include 0.45 acre of critical and 2.73 acres of non-critical habitat.

There are approximately 34.15 acres of suitable habitat for the vernal pool fairy shrimp within the Action Area. The phased construction of Alternative 4 has the potential to permanently affect 0.79 acre of critical habitat, and 3.82 acres of non-critical habitat. Temporary impacts would include 0.44 acre of critical habitat and 2.98 acres of non-critical habitat.

Both Build Alternatives may have indirect impacts to vernal pool fairy shrimp, which result when permanent or temporary impacts occur to at least half of an entire aquatic feature, making the remaining portion of the feature vulnerable to degradation over time.

These impacts are considered significant under the California Environmental Quality Act because vernal pool fairy shrimp are protected by state and federal laws.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the vernal pool fairy shrimp.

Proposed Mitigation Measures for Impacts to Vernal Pool Fairy Shrimp:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, and temporary impacts will be compensated for at a 1.1:1 ratio.

San Joaquin kit fox - Within the Action Area for the project corridor, there are about 601.47 acres of potentially suitable denning and foraging habitat for the San Joaquin kit fox. The Action Area contains open grassland areas mostly east of the existing State Route 41, north of Avenue 15 and southeast of Avenue 12.

Alternative 2 has the potential to permanently affect 137.62 acres and temporarily affect 70.14 acres of suitable breeding and foraging habitat for the San Joaquin kit fox.

The phased construction of Alternative 4 has the potential to permanently affect 172.38 acres and temporarily affect 71.29 acres of suitable breeding and foraging habitat for the San Joaquin kit fox.

Though no kit foxes were observed during the 2015 surveys, both Build Alternatives would have permanent and temporary impacts to potential habitat.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the San Joaquin kit fox, as well as the following:

- Pre-construction surveys would be completed no more than 30 days prior to the start of construction to ensure no San Joaquin kit foxes are in or adjacent to the project area.
- If any San Joaquin kit foxes are observed during the course of project activities, they would be allowed to leave the area unharmed and on their own volition and Caltrans would notify the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine additional measures to protect the species.

Swainson's hawk - Within the Action Area for the project corridor, there are about 730.66 acres of potentially suitable foraging and nesting habitat for the Swainson's hawk.

Alternative 2 has the potential to permanently affect 149.46 acres and temporarily affect 71.93 acres of suitable foraging and nesting habitat for the Swainson's hawk.

The phased construction of Alternative 4 has the potential to permanently affect 178.45 acres and temporarily affect 72.31 acres of suitable foraging and nesting habitat for the Swainson's hawk.

Because a Swainson's hawk pair was identified roosting within the project limits during the 2015 survey season, Caltrans will be implementing its Standard Special Provisions. Both Build Alternatives would have permanent and temporary impacts to potential foraging habitat within the non-native grassland and oat fields and to the potential nesting habitat within the orchards and eucalyptus trees.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the Swainson's hawk, as well as the following:

- pre-construction Swainson's hawk surveys will be conducted to ensure no birds are nesting in or adjacent to the Project Footprint.
- If any nesting pairs are discovered, additional avoidance and minimization measures would be implemented to avoid impacting

birds, which may include but is not limited to: the establishment of a protective ESA and a 500 foot “no-work” buffer and having a biological monitor present during construction activities that occur in close proximity to the nest.

Tricolored blackbird - Within the Action Area for the project, there are about 656.64 acres of potentially suitable foraging habitat for the tricolored blackbird.

Alternative 2 has the potential to permanently affect 149.47 acres and temporarily affect 71.93 acres of potential foraging habitat for the tricolored blackbird.

The phased construction of Alternative 4 has the potential to permanently affect 172.99 acres and temporarily affect 72.31 acres of potentially suitable foraging habitat for the tricolored blackbird.

Although no tricolored blackbirds were found within the biological study area, if the species should occur, the implementation of Caltrans Standard Special Provisions will ensure that impacts to individual birds will be prevented. Both Build Alternatives would have permanent and temporary impacts to possible foraging habitat within the non-native grassland and oat fields.

The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the tricolored blackbird.

Crotch bumble bee - Within the Action Area, there are about 471.42 acres of potentially suitable habitat for the Crotch bumble bee.

Alternative 2 has the potential to permanently affect 83.99 acres and temporarily affect 45.96 acres of possible suitable habitat for the Crotch bumble bee.

The phased construction of Alternative 4 has the potential to permanently affect 104.67 acres and temporarily affect 54.34 acres of potentially suitable habitat for the Crotch bumble bee.

If Crotch bumble bees are present on the project site, there is a potential for individuals to be directly impacted by construction-associated ground-disturbing activities, which could lead to mortality for individual bees or a colony, if present. If habitat conditions are suitable for this species, it would be further impacted by the loss and fragmentation of available habitat in the project area. If the species should occur, the implementation of Caltrans Standard Special Provisions will ensure that the potential for impacts to individuals will be minimized.

The following avoidance and minimization measures are proposed and would be required prior to and during the period of construction:

- Preconstruction surveys will be completed by qualified biologists to determine if Crotch bumble bees occur on the project site. If any individual Crotch bumble bees are observed during the survey, then a more extensive survey(s) would be conducted to determine if the species is nesting within the project footprint.

- A 50-foot “no-work” buffer would be established to protect any known nests that can be avoided during construction of the project. If any nests are discovered that cannot be avoided, coordination with the California Department of Fish and Wildlife may be necessary.

Proposed Mitigation Measures for Impacts to Crotch bumble bee:

- No compensatory mitigation is proposed. However, based on the results of the preconstruction survey and the listing status of the Crotch bumble bee prior to construction, Caltrans may need to coordinate with the California Department of Fish and Wildlife to obtain a 2081 Incidental Take Permit, which could include the need for compensatory mitigation, although the mitigation that will be completed to compensate for impacts to upland habitat for the California tiger salamander would likely also benefit this species.

Threatened and Endangered Species - Plants

San Joaquin Valley orcutt grass was incidentally observed in the Action Area in 2016. The existing environment within the Action Area also suggests there is potential for the Hartweg’s golden sunburst, hairy orcutt grass, and succulent owl’s clover to occur. The same avoidance and minimization measures as are listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for these species, as well as the following:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans Right of Way once Caltrans biologists are able to access all properties within the Action Area.

- If any of these species are observed, it would be avoided and protected with an Environmentally Sensitive Area, if possible. In cases where avoidance is not possible, Caltrans would initiate formal consultation with the U.S. Fish and Wildlife Service and obtain an Incidental Take Permit from the California Department of Fish and Wildlife to address any adverse effects to the species and propose additional forms of impact

minimization efforts, which may include, but would not be limited to the following:

- The collection and stockpiling of the top 4-6 inches of soil (during construction) and re-application in areas of suitable habitat (once construction is complete) with the goal of preserving this species seeds in the on-site soils.
- Transplanting individual plants to a suitable location outside of the project impact area.
- Seed collection.

Proposed Mitigation Measures for Impacts to Joaquin Valley orcutt grass and hairy orcutt grass:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, and temporary impacts will be compensated for at a 1.1:1 ratio. Table 16 below outlines the permanent, indirect, and temporary impact areas, compensation ratios, and mitigation areas that will be used to compensate for impacts to these species for Phases 1 and 2 of the project.

3.2.3 Unavoidable Significant Environmental Effects

Section 15126.2(b) of the California Environmental Quality Act Guidelines requires that an environmental impact report discuss significant impacts. When such impacts cannot be reduced to a less than significant level, the environmental impact report must describe their implications and the reason why the project is being proposed in spite of the impacts.

There are no significant and unavoidable impacts after mitigation.

3.3 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words “significant” and “significance” used

throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 to provide you 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.

AESTHETICS

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
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?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a) <u>No Impact</u>

The proposed project would no have a substantial adverse impact on a scenic vista because the new roadway would travel at a higher elevation, allowing travelers to see farther and experience improved vistas.

b) <u>No Impact</u>

The proposed project would not damage any scenic resources.

c) <u>Less Than Significant Impact</u>

As discussed in the Visual/Aesthetics section of Chapter 2, at Avenue 11, construction of an additional bridge for southbound traffic to the west of the existing bridge would cause a greater visual impact because it differs from the existing roadway. The engineered concrete above grade structures would obstruct views and would create a more urbanized look within the existing rural environment. Construction of the proposed structures would result in a less than significant visual impact. Avoidance and minimization measures to preserve the visual quality of the site and its surroundings are listed in Chapter 2 and Appendix E.

d) <u>No Impact</u>

The proposed project would not include new lighting elements in an area in which there is currently no lighting.

AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

CEQA Significance Determinations for Agriculture and Forest Resources

a) <u>Less Than Significant</u>

As discussed in the Farmland section in Chapter 2, the proposed project would convert unique farmland to non-agricultural land. The conversion of farmland cannot be avoided because farmland surrounds the project

corridor, and there is no feasible alternative in this area that would not convert farmland. The Farmland Conversion Impact Rating for Alternative 2 is 157 points (rounded). Alternative 2 would acquire 278 acres of right-of-way, of which 223 acres are currently zoned for agricultural use. The Farmland Conversion Impact Rating for Alternative 4 is 146 points (rounded). Alternative 4 would acquire 262 acres of right-of-way, of which 230 acres are currently zoned for agricultural use. These impacts are considered less than significant. No mitigation is required.

b) <u>No Impact</u>

As discussed in the Farmland section in Chapter 2, the proposed project would convert unique farmland to non-agricultural land. Three parcels under Williamson Act contracts, or agricultural preserve lands, were identified within the proposed project limits. Alternative 2 would acquire 4.9 acres from a 40.1-acre parcel under Williamson Act contract. Total acreage needed for Alternative 4 from parcels under Williamson Act contracts is approximately 27.8 acres. These impacts are considered less than significant. No mitigation is required.

c, d) <u>No Impact</u>

There are no forest or timberlands within the project limits.

e) <u>No Impact</u>

There are no other changes anticipated to farmland or forest land.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

a) <u>No Impact</u>

The proposed project does not conflict with or obstruct implementation of the applicable air quality plan.

b, c) <u>Less Than Significant</u>

As discussed in the Air Quality section of Chapter 2, The South Madera Expressway project is included in the Madera County Transportation Commission's Year 2018 Regional Transportation Plan/Sustainable Communities Strategy Draft Amendment No. 1, 2019 and the Year 2019 cost-constrained Federal Transportation Improvement Program. This analysis found that the plan and, therefore, the individual projects contained in the plan, 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 (NAAQS). There is no reason to believe that this project will create a new violation or worsen an existing violation of the $PM_{2.5}$ and PM_{10} of the National Ambient Air Quality Standards (NAAQS). 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 impacts from both construction-related impacts and operational impacts. These measures can be found in Chapter 2 and Appendix E.

The project was determined not to be a project of air quality concern. Concurrence was received from the Federal Highway Administration and the EPA in August 2019. The Department of Transportation has completed this assessment and has determined that this project is not a "Project of Air Quality Concern." The Environmental Protection Agency and the Federal Highway Administration concurred with Caltrans' determination in August 2019 (see Appendix M).

d) <u>No Impact</u>

The project would temporarily generate air pollutants. Impacts will be less than significant, and several measures can be taken to minimize impacts from both construction-related impacts and operational impacts, which can be found in Chapter 2 and Appendix E. No mitigation is required.

BIOLOGICAL RESOURCES

CEQA Significance Determinations for Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a) <u>Less Than Significant with Mitigation Incorporated</u>

The proposed project would have a significant impact, either directly or through habitat modifications, on the western spadefoot toad, California tiger salamander, vernal pool fairy shrimp, San Joaquin kit fox, Swainson's hawk, tricolored blackbird, crotch bumble bee, San Joaquin Valley orcutt grass, Hartweg's golden sunburst, hairy orcutt grass, and succulent owl's clover. However, with the avoidance, minimization, and mitigation measures

discussed in Chapter 2 under Biological Environment and in Appendix E incorporated into the project, these impacts are considered to be less than significant.

The proposed project would also have either a less than significant impact or no impact to the following species: burrowing owl, pallid bat, western mastiff bat, American badger, northern harrier, loggerhead shrike, brassy bryum, Sanford's arrowhead, and spiny-sepaled button celery. Though no mitigation is required for these resources, avoidance and minimization measures discussed in Chapter 2 and Appendix E to minimize any potential impacts.

b) <u>Less Than Significant with Mitigation Incorporated</u>

As discussed in Chapter 2 under Biological Environment, Alternative 2 would permanently impact 1.19 acres and temporarily impact 0.51 acre of both northern hardpan and northern claypan vernal pool communities. If Alternative 4 is constructed in two phases, 1.54 acres of permanent impacts would occur and 0.61 acre of temporary impacts would occur. Permanent impacts to northern hardpan vernal pool communities would place fill within these hydrologic resources and subsequently fragment the vernal pool complex in the non-native grassland areas north of Avenue 15 and southeast of Avenue 12.

c) <u>Less Than Significant with Mitigation Incorporated</u>

As discussed in Chapter 2 under Biological Environment, Alternative 2 would impact 12.30 acres of potentially jurisdictional wetlands and other waters of the U.S. and the phased construction of Alternative 4 would impact 10.78 acres of potentially jurisdictional wetlands and other waters of the U.S. Because wetlands are protected under a number of laws and regulations, these impacts are considered significant, and legal/regulatory requirements dictate how these impacts would be mitigated.

d) <u>Less Than Significant Impact</u>

As discussed in Chapter 2 under Biological Environment, it is anticipated that 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, f) <u>No Impact</u>

The project would not conflict with any local policies or ordinances protecting biological resources and 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.

CULTURAL RESOURCES

CEQA Significance Determinations for Cultural Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

a) <u>Less Than Significant Impact</u>

As discussed in the Cultural Resources Section of Chapter 2, Both Build Alternatives cannot avoid the historic property, the Madera Canal, and its contributor, the Lateral 6.2 canal. A Finding of No Adverse Effect Without Standard Conditions was prepared prior to the completion of the final environmental document. (Appendix O) Caltrans received concurrence with the Finding of No Adverse Effect from the State Historic Preservation Officer on July 10, 2019 (see Appendix Q).

b,c) <u>No Impact</u>

The proposed project is not expected to disturb any archaeological resources or human remains.

ENERGY

CEQA Significance Determinations for Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

a, b) <u>No Impact</u>

When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, the project would not have impact on energy.

GEOLOGY AND SOILS

CEQA Significance Determinations for Geology and Soils

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

a, b, c, d, e) <u>No Impact</u>

No geologic or topographic features were identified within southern Madera County and no active faults exist within the proposed project area.

The project would not cause soil erosion, induce soil instability, or impact the quality of the soil. No mitigation is needed.

f) <u>Less Than Significant with Mitigation Incorporated</u>

As discussed in Chapter 2 under Paleontology, both Alternative 2 and Alternative 4 would have an effect on the Turlock Lake and Modesto Formations, which underlie both Build Alternatives. Alternative 2 would acquire 278 acres for the project, which includes 71 acres of excavation for four water detention basins. Alternative 4 would acquire 262 acres for the project, which includes 88 acres of excavation for five water detention basins. All ground disturbance during general construction excavation activities and excavation associated with drainage conveyance and storm water detention/retention basins in the high-sensitivity Modesto and Turlock Lake Formations have the potential to affect fossils. Mitigation measures will be incorporated into the project to minimize potential impacts. These measures are listed in Chapter 2 and Appendix E.

GREENHOUSE GAS EMISSIONS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				

HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard 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?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

CEQA Significance Determinations for Hazards and Hazardous Materials

a, b, c) <u>Less Than Significant Impact</u>

As discussed in Chapter 2 under Hazardous Waste, Alternative 4 (Phase 2) would require full acquisition of the Chevron gas station at Avenue 15 and may result in a potential use of a high-risk property for hazardous waste. Although Chevron has had no prior reported leaks, releases, or spills, there is still a possibility that contamination has occurred, which cannot be determined until a Preliminary Site Investigation is conducted. A Preliminary Site Investigation would be completed before construction of

Phase 2 to identify the lateral and vertical extent of petroleum hydrocarbon contamination, if any, on this property. A full site characterization cannot be made, however, until the tanks and piping are actually removed from the property. The removal of the underground storage tanks, piping, and any associated cleanup is the responsibility of the property owners and must be conducted pursuant to legal and regulatory requirements. Once regulatory site closure is provided or little to no contamination is found, the site would no longer be considered a high risk. The recommended avoidance and minimization measures to minimize potential impacts are listed in Chapter 2 and Appendix E.

d, e, f, g) <u>No Impact</u>

The proposed project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, is not located within an airport land use plan or within two miles of a public or private airport, would not impair implementation of or physically interfere with an adopted emergency response/evacuation plan, and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

HYDROLOGY AND WATER QUALITY

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
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 on- or off-site:	☐	☐	☐	☒
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
(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	☐	☐	☒	☐
(iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

a, b) <u>No Impact</u>

The proposed project would not violate any water quality standards or waste discharge requirements or substantially decrease groundwater supplies or interfere substantially with groundwater recharge.

c) <u>Less Than Significant Impact</u>

As discussed in Chapter 2 under Water Quality, Alternative 2 proposes four detention basins, and Alternative 4 proposes five detention basins to accommodate storm water runoff generated by the newly constructed impervious surfaces added by the project. The drainage basins would be designed with sufficient capacity to detain two 10-year/24-hour storm events. Dewatering and active treatment systems (ATS) are not anticipated because groundwater would not be affected by the project.

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 Storm Water Pollution Prevention Plan. Those practices are listed in Chapter 2 and Appendix E.

d, e,) <u>No Impact</u>

The proposed project is not located in a flood hazard, tsunami, or seiche zone, and does not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

LAND USE AND PLANNING

CEQA Significance Determinations for Land Use and Planning

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a,b) <u>No Impact</u>

The proposed project would not physically divide an established community. Although both alternatives are not consistent with the Rio Mesa Area Plan or Riverstone Area Plan, and Alternative 4 is not consistent with the O'Neals Area Plan, these conflicts are not with plans adopted for the purpose of avoiding or mitigating an environmental effect.

MINERAL RESOURCES

CEQA Significance Determinations for Mineral Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a,b) <u>No Impact</u>

The proposed project would not result in the loss of availability of a known mineral resource or result in the loss of availability of a locally important mineral resource recovery site.

NOISE

CEQA Significance Determinations for Noise

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

a) <u>Less Than Significant with Mitigation Incorporated</u>

As discussed in Chapter 2 under Noise and Vibration, Alternative 4 would move future traffic closer to the identified receptors located along Huntington Road and Avenue 14. Phase 2 increase noise levels by 16 decibels,14-16 decibels, and 11 decibels for various receptors.

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 a 12-decibel or more increase) 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. 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.

Details of the recommended noise abatement measures are detailed in Chapter 2 and Appendix E.

b) <u>Less Than Significant Impact</u>

Groundborne vibration may occur during the construction of the project, however equipment noise control and administrative measures will be in place. Application of these measures would reduce construction-related noise impacts; however, a temporary increase in noise and vibration may still occur. These measures are detail in Chapter 2 and Appendix E.

c) <u>No Impact</u>

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

POPULATION AND HOUSING

CEQA Significance Determinations for Population and Housing

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial 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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a, b) <u>No Impact</u>

The project will not induce substantial unplanned population growth in the area and will not displace any housing.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

a) <u>No Impact</u>

The project would not result in an impact to parks, schools, or other public facilities and would not impact emergency response times.

RECREATION

CEQA Significance Determinations for Recreation

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) <u>No Impact</u>

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

TRANSPORTATION

CEQA Significance Determinations for Transportation

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? NOTE: While public agencies may immediately apply Section 15064.3 of the updated Guidelines, statewide application is not required until July 1, 2020. In addition, uniform statewide guidance for Caltrans projects is still under development. The PDT may determine the appropriate metric to use to analyze traffic impacts pursuant to section 15064.3(b). Projects for which an NOP will be issued any time after December 28, 2018 should consider including an analysis of VMT/induced demand if the project has the potential to increase VMT (see page 20 of OPR's updated SB 743 Technical Advisory), particularly if the project will be approved after July 2020.	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

a, b, c, e) <u>No Impact</u>

The project would not conflict with a program plan, ordinance or policy addressing the circulation system and is consistent with CEQA guidelines section 15064.3, subdivision (b). The project does not increase hazards due to a geometric design feature or result in inadequate emergency access.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

a, b) <u>No Impact</u>

In March 2015, letters to Native American representatives regarding the proposed project were mailed by the Caltrans District 6 Native American Coordinator. In May 2015, the Chairperson of the California Valley Miwok Tribe responded and indicated that the tribe has no issues with the project; however, if any Miwok artifacts and/or human remains are discovered, the Tribe requests notification. To date, no other comments have been received regarding the project or cultural resources outside of the monitoring conducted by tribal representatives from the North Fork Tribe.

In December 2015, a copy of the Historic Property Survey Report (HPSR), which includes the record of consultation efforts by the Caltrans Cultural Resources Branch, was sent to the individuals and tribal governments listed in Chapter 4 under Consultation with Responsible/Coordinating Agencies/Interested Parties.

After the preferred alternative is selected and Caltrans cultural resources staff issues a finding, Caltrans would have complied with 36 Code of Federal Regulations Part 800 2(c)(1-4), 800.4(d)(1), 800.11(d). Consultation with the Native Americans for cultural resources is ongoing

through construction of the project (Section 106 of the National Historic Preservation Act of 1969, as amended).

UTILITIES AND SERVICE SYSTEMS

CEQA Significance Determinations for Utilities and Service Systems

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

a, b, c, d, e) <u>No Impact</u>

As discussed in Chapter 2 under Utilities and Emergency Services, before construction of the project, sponsoring developers would relocate some utilities for the housing developments planned near the project area. Consultation with PG&E began in spring 2015 and would be ongoing throughout the life of the project. Early discussions with other utility companies with facilities in the project corridor would be initiated as needed and would be ongoing during the life of the project. Consultation with the Madera Irrigation District began in May 2015 and would be ongoing throughout the life of the project.

The project would not require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities and existing facilities has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. The project would have enough water

supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years and would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a, b, c, d) <u>No Impact</u>

The project would not impair emergency response/evacuation plans, exacerbate wildfire risks, expose people or structures to risks, or require the installation or maintenance of associated infrastructure that may exacerbate fire risk.

MANDATORY FINDINGS OF SIGNIFICANCE

CEQA Significance Determinations for Mandatory Findings of Significance

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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.)	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) <u>Less Than Significant with Mitigation Incorporated</u>

Impacts to the quality of the environment are outlined above under biological resources (a,b,c).

b) <u>Less Than Significant with Mitigation Incorporated</u>

cumulatively considerable impacts include those outlined above under agriculture and forest resources (a,b), air quality (b,c), greenhouse gas emissions (b).

c) <u>Less Than Significant Impact</u>

Impacts to human beings are outlined above under Noise(a).

3.4 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 concerned mostly with the emissions of greenhouse gas generated by human activity, including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of greenhouse gas-emitting sources. The dominant greenhouse gas emitted is carbon dioxide, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels) [1]

There are four main strategies for reducing 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. To be most effective, all four strategies should be pursued cooperatively. [2]

Regulatory Setting

State

With passage of several pieces of legislation, including State Senate and Assembly bills and Executive Orders, California launched an innovative and

[1] *http://climatechange.transportation.org/ghg_mitigation/*
[2] *http://www.fhwa.dot.gov/environment/climate_change/mitigation/*

proactive approach to dealing with greenhouse gas emissions and climate change.

Assembly Bill 1493, Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below 1990 levels by 2050. In 2006, this goal was further reinforced with passage of Assembly Bill 32.

Assembly Bill 32, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires the Governor's Office of Planning and Research to develop recommended amendments to the California Environmental Quality Act Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

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 from 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 for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level, currently no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. 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. [3]

The Federal Highway Administration supports the approach that climate change considerations should be integrated throughout the transportation decision-making process, from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process would assist in decision-making and improve efficiency at the program level, and would inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by the Federal Highway Administration to lessen climate change impacts correlate with efforts that the State is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the “National Clean Car Program” and Executive Order 13514—Federal Leadership in Environmental, Energy and Economic Performance.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

The U.S. Environmental Protection Act’s authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that greenhouse gases meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the court’s ruling, the U.S. Environmental Protection Agency finalized an endangerment finding in December 2009.

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[3] *To date, no national standards have been established regarding mobile source greenhouse gases, nor has the U.S. Environmental Protection Agency established any ambient standards, criteria or thresholds for greenhouse gases resulting from mobile sources.*

Based on scientific evidence, it found that six greenhouse gases constitute a threat to public health and welfare. So, it is the Supreme Court's interpretation of the existing act and the U.S. Environmental Protection Agency's assessment of the scientific evidence that form the basis for the U.S. Environmental Protection Agency's regulatory actions. The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010. [4]

The U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, the U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards, this program is projected to save approximately four billion barrels of oil and two billion metric tons of greenhouse gas emissions.

The complementary U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards would cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel-efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards would reduce carbon dioxide emissions by about 270 million metric tons and

[4] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy-duty vehicles.

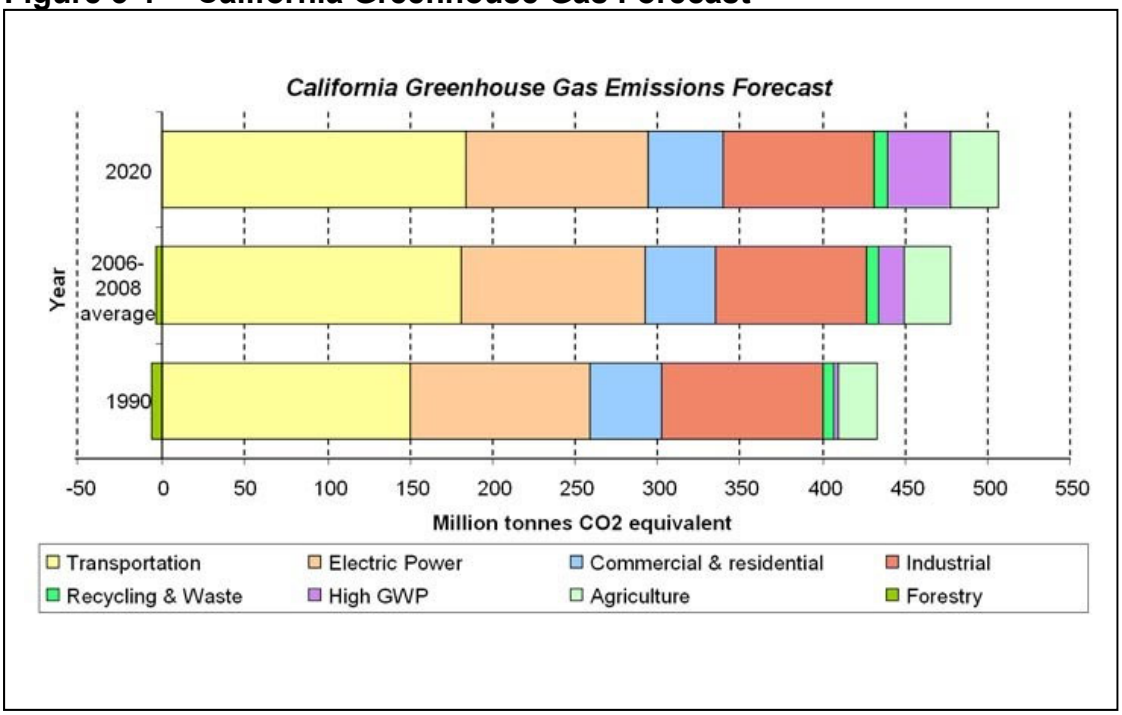
Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of greenhouse gas.[5] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (California Environmental Quality Act Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The Assembly Bill 32 Scoping Plan mandated by Assembly Bill 32 includes the main strategies California would use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, the Air Resources Board released the greenhouse gas inventory for California (forecast last updated: October 28, 2010). See Figure 3-1. The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008.

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

Figure 3-1 California Greenhouse Gas Forecast



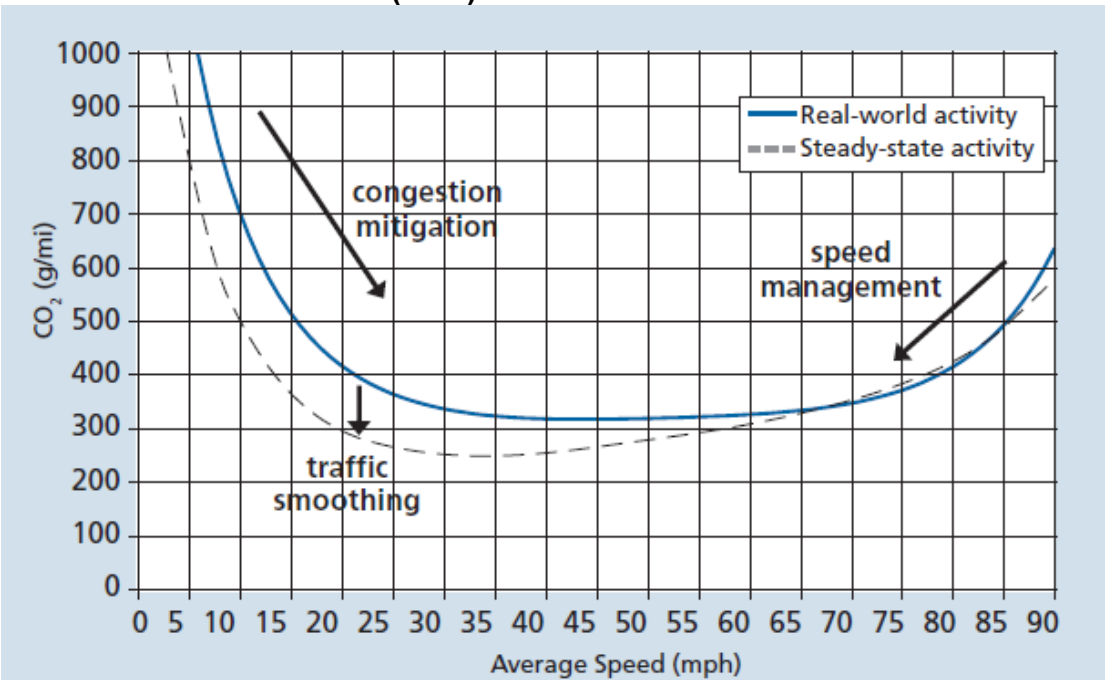
Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Caltrans and its parent agency, the State Transportation Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. [6]

One of the main strategies in the department's Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. 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 3-2). 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.

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

Figure 3-2 Possible Effect of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide (CO2) Emission



Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf

The purpose of the proposed project is to address the increased traffic associated with existing and planned development along State Route 41 to and from Fresno and Madera counties while relieving congestion and improving traffic flow, plus identify a route for future transportation projects. The project is located in a rural area of Madera County, and the Build Alternatives would relieve traffic congestion and improve traffic flow on State Route 41. In the case of the No-Build Alternative, the level of service would continue to deteriorate within level of service F. In contrast, the projected build level of service is B/C for the 2018 opening year. By horizon year 2038, the build level of service would be C/D.

Greenhouse gas emissions analysis and forecasting are a relatively new science using existing air modeling tools that were not originally designed for modeling greenhouse gases. Estimated annual carbon dioxide emissions were modeled using CT-EMFAC 2014. The Average Daily Traffic count was the same for the No-Build Alternative and Build Alternatives 2 and 4. The level of service (and thus the average speeds) were different. Assumptions used in the model foresaw a peak hour (two hours per day) prevailing speed of 5-45 miles per hour and a non-peak hour prevailing free-flow speed of 35-60 miles per hour for the No-Build Alternative. For the Build Alternatives, the peak hour speed assumption was 40-45 miles per hour and the non-peak hour speed assumption was 35-55. The total vehicle miles traveled were allotted 2 hours for peak and 22 hours for off-peak for all scenarios. The annual average daily traffic count includes 8 percent truck traffic.

The results indicate only a rough estimate of emissions based on projected annual average daily traffic data. Table 3.2 shows carbon dioxide emissions in tons per year for the Build Alternatives and the No-Build Alternative. Other influences exist that have an effect on the total effect that a project would have on greenhouse gases. Current modeling tools and guidelines are not available at this time to project any effect from this specific project on global warning.

Table 3.2 Estimated Carbon Dioxide Emissions for All Alternatives

Volume (tons per year)	Existing	No-Build Alternative			Build Alternatives		
	2007	2018	2028	2038	2018	2028	2038
Carbon Dioxide (CO2)	1,362	1,635	2,012	2,555	1,635	1,975	2,433

According to EMFAC modeling results, both Build Alternatives and the No-Build Alternative would result in more greenhouse gases than the existing condition in 2014. This is because of EMFAC's focus on predicted traffic volumes and speeds, which would increase with the additional two lanes the project adds to the highway.

The Build Alternatives are predicted to cause less carbon dioxide than the No-Build Alternative. The No-Build Alternative would result in three tons more carbon dioxide emissions in 2018, 37 tons more in 2028 and 122 tons more in 2038. The Build Alternatives would improve mobility in the corridor.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate carbon dioxide emissions from mobile sources, the model does have limitations when it comes to accurately reflecting changes in carbon dioxide emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008) and a 2009 University of California study, [7] brief but rapid accelerations, such as those occurring during congestion, can contribute significantly to a vehicle's carbon dioxide emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idling) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions

[7] Matthew Bartha, Kanok Boriboonsomsin. 2009. *Energy and emissions impacts of a freeway-based dynamic eco-driving system.* Transportation Research Part D: Transport and Environment Volume 14, Issue 6, August 2009, Pages 400–410

of the various alternatives with baseline in an attempt to determine impacts. Although work by the Environmental Protection Agency and the California Air Resources Board is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling.

The California Air Resources Board is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the California Air Resources Board has made this decision. Their website only states:

> REVISION: Both the EMFAC and OFFROAD Models develop CO2 and CH4 [methane] emission estimates; however, they are not currently used as the basis for [CARB's] official [greenhouse gas] inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models. [8]

Other Variables

With the current science, project-level analysis of greenhouse gas emissions has limitations. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected carbon dioxide emissions.

First, vehicle fuel economy is increasing. The Environmental Protection Agency's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2012," [9]which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now at a record high. Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 and 2003 and subsequently began setting increasingly higher fuel economy standards for future vehicle model years. The Environmental Protection Agency estimates that light-duty fuel economy rose by 16 percent from 2007 to 2012.

Table 3.3 shows the increases in required fuel economy standards for cars and trucks between model years 2012 and 2025 as available from the National Highway Traffic Safety Administration for the 2012-2016 and 2017-2025 Corporate Average Fuel Economy Standards.

[8] http://www.arb.ca.gov/msei/offroad.htm
[9] http://www.epa.gov/oms/fetrends.htm

Table 3.3 Average Required Fuel Economy (miles per gallon)

Type of Vehicle	2012	2013	2014	2015	2016	2018	2020	2025
Passenger Cars	33.3	34.2	34.9	36.2	37.8	41.1-41.6	44.2-44.8	55.3-56.2
Light Trucks	25.4	26	26.6	27.5	28.8	29.6-30.0	30.6-31.2	39.3-40.3
Combined	29.7	30.5	31.3	32.6	34.1	36.1-36.5	38.3-38.9	48.7-49.7

Source: EPA 2013, http://www.epa.gov/fueleconomy/fetrends/1975-2012/420r13001.pdf

Second, near-zero carbon vehicles would come into the market during the design life of this project. According to the 2013 Annual Energy Outlook (AEO2013):

> "LDVs that use diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20 percent of all new LDV sales in 2011 to 49 percent in 2040 in the AEO2013 Reference case." [10]

The greater percentage of alternative fuel vehicles on the road in the future would reduce overall greenhouse gas emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, California has recently adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10 percent by 2020. The regulation became effective on January 12, 2010 (codified in title 17, California Code of Regulations, Sections 95480-95490). Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

Lastly, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, "Effects of Gasoline Prices on Driving Behavior and Vehicle Market," [11] the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists adjust to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models declined from 2003 to 2008 as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel-efficient vehicles. Recent

[10] http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf
[11] http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf

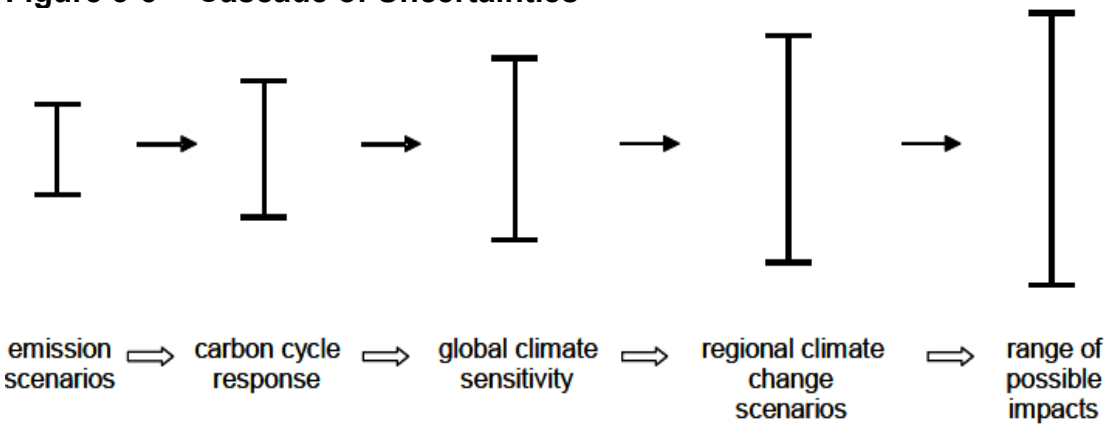
reports from the Energy Information Agency[12] and Bureau of Economic Analysis[13] also show slowing re-growth of vehicle sales in the years since their dramatic drop in 2009 due to the Great Recession as gasoline prices climbed to $4 per gallon and beyond.

Limitations and Uncertainties with Impact Assessment

Taken from p. 5-22 of the National Highway Traffic Safety Administration Final Environmental Impact Statement for MY2017-2025 Corporate Average Fuel Economy Standards (July 2012), Figure 3-3 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

> Moss and Schneider (2000) characterize the 'cascade of uncertainty' in climate change simulations. As indicated [in the figure below], the emission estimates used in this EIS have narrower bands of uncertainty than the global climate effects, which are less uncertain than regional climate change effects. The effects on climate are, in turn, less uncertain than the impacts of climate change on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources […] Although the uncertainty bands broaden with each successive step in the analytic chain, all values within the bands are not equally likely; the mid-range values have the highest likelihood. [14]

Figure 3-3 Cascade of Uncertainties



Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no

[12] http://www.eia.gov/oiaf/aeo/tablebrowser/aeo_query_server/?event=ehExcel.getFile&study=AEO2013&region=0-0&cases=ref2013-d102312a&table=114-AEO2013&yearFilter=0
[13] Historical Vehicle Sales: www.bea.gov/national/xls/gap_hist.xls
[14] http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf. page 5-22

regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in carbon dioxide emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of carbon dioxide equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons of carbon dioxide from 2000 to 2030, which represents an increase of between 25 and 90 percent. [15]

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing “new” greenhouse gas emissions. It is difficult to assess the extent to which any project-level increase in carbon dioxide emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.CO2 accounts for 95 percent of transportation GHG emissions in the U.S. The largest sources of transportation-related GHG 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 GHG emissions comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, and trains, as well as pipelines and lubricants. Because CO2 emissions represent the greatest percentage of GHG 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 Co2 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, GHG emissions, particularly CO2, may be reduced.

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower GHG-emitting fuels, and

[15] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. http://www.ipcc.ch/SPM2feb07.pdf.

(4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing 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 mitigated to some degree by longer intervals between maintenance and rehabilitation events. Based on the limited modeling tools and guidelines available for greenhouse gases, it appears that the Build Alternatives would create less greenhouse gas emissions than the No-Build Alternative.

CEQA Conclusion

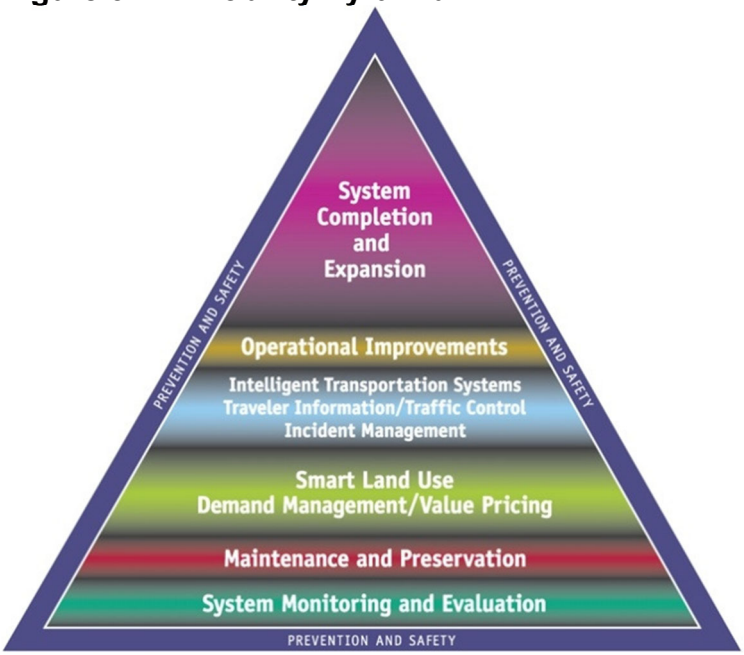
As discussed above, carbon dioxide (Co2) emissions in the project area in 2028, and 2038 are expected to be greater than the existing emissions. However, the future carbon dioxide emissions for both Build Alternatives would be lower than the future carbon dioxide for the No-Build Alternative. Despite these estimated reductions, there are also limitations with EMFAC and with assessing what a given carbon dioxide emissions increase means for climate change. Therefore, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on a cumulative scale to climate change. However, Caltrans is firmly committed to implementing greenhouse gas reduction strategies and measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor's Climate Action Team as the 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. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in greenhouse

gas emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 3-4: Mobility Pyramid.

Figure 3-4 Mobility Pyramid



Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities but does not have local land use planning authority.

Caltrans also assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. Environmental Protection Agency and Air Resources Board.

Caltrans is also working toward enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill 375 (Steinberg 2008), Senate Bill 391 (Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32.

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The California Transportation Plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the California Transportation Plan is to provide a common policy framework that would guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 would identify the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the State's transportation needs.

Table 3.4 summarizes Caltrans' efforts and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 3.4 Climate Change/CO2 Reduction Strategies

Strategy	Program	Partnership		Method/ Process	Estimated CO_2 Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & greenhouse gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

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

Caltrans Activities to Address Climate Change (April 2013) [16] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures would also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

1. Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. Intelligent Transportation Systems commonly consist of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

2. Landscaping reduces surface warming, and through photosynthesis, decreases CO2. The project proposes planting in the intersection slopes, drainage channels, and seeding in areas next to frontage roads as well as planting a variety of different-sized plant material and scattered skyline trees where appropriate but not to obstruct the view of the mountains.

3. According to Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions. Construction measures to reduce greenhouse gas emissions include watering exposed surfaces for parking, staging areas, soil piles, graded areas and unpaved roads; limiting speeds on unpaved roads to 15 miles per hours; minimizing idling time of construction equipment when not in use by shutting off equipment or limiting idling time to 5 minutes; and maintaining equipment in accordance with manufacturer's specifications.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the State's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and

[16] *http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml*

intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality, the Office of Science and Technology Policy, and the National Oceanic and Atmospheric Administration, released its interagency task force progress report on October 28, 2011[17], outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts would help California agencies plan and implement mitigation strategies for programs and projects.

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

In addition to addressing projected sea level rise, the California Natural Resources Agency was directed to coordinate with local, regional, state, and federal public and private entities to develop the California Climate Adaptation Strategy (Dec. 2009) [18] , which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the California Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document,

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[17] *http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation*
[18] *http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF*

including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: public health; biodiversity and habitat; ocean and coastal resources; water management; agriculture; forestry; and transportation and energy infrastructure. As data continues to be developed and collected, the State's adaptation strategy would be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[19] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- Range of uncertainty in selected sea level rise projections.
- Synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- Discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by the Coastal Ocean Climate Action Team as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, the Coastal Ocean Climate Action Team updated the Sea Level Rise guidance to include information presented in the National Academy's Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of Executive Order S-13-08, and/or are programmed for construction funding through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. A Notice of Preparation was published for

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[19] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.*

this project on June 8, 2015. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

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

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans would be able to review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to Executive Order S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report

Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and public contact. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Scoping

Notice of Preparation
A Notice of Preparation of an Environmental Impact Report was sent to the State Clearinghouse on May 8, 2015. The following agencies and interested parties were also notified:

- California Department of Conservation
- California Department of Fish and Wildlife
- California Department of Water Resources
- California Environmental Protection Agency
- California Natural Resources Agency
- California State Historic Preservation Officer
- California Transportation Commission
- Central Valley Flood Protection Board
- Central Valley Regional Water Board
- Energy Commission
- Federal Emergency Management Agency
- Federal Transit Administration
- Native American Heritage Commission
- Office of Planning and Research/State Clearinghouse
- Public Utilities Commission
- San Joaquin Valley Air Pollution Control District
- State Air Resources Board
- State Lands Commission
- State Water Resources Control Board
- U.S. Army Corps of Engineers – Sacramento District
- U.S. Bureau of Reclamation
- U.S. Department of Energy – Office of Environmental Management
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S.D.A. – Natural Resources Conservation Service

4.2 Consultation with Responsible/Coordinating Agencies/Interested Parties

Early and continuing coordination with the general public and appropriate public agencies is an objective for this project. Since 2012, efforts have been made to meet with Madera County Planning, residential developers, and the regulatory agencies to discuss the proposed alternatives. Native American consultation was initiated in April 2015 for the purpose of Section 106 and would be ongoing through the life of the project.

Public Information Meetings
A public information (scoping) meeting was held on June 16, 2015 at the Madera County Fire Station #9 (Cal Fire) at 41016 Avenue 11 in Madera from 4:00 p.m. to 7:00 p.m. Public comment on the proposed project was requested, and comments were accepted for 45 days after the date of the meeting (through July 31, 2015).

The meeting was conducted in an open house format with the goal of gathering information from the public. It was advertised in the *Madera Tribune* on June 9, 2015 and June 16, 2015. Invitations were mailed to all property owners along the proposed alignment and to local agencies and officials, elected officials, and tribes. The week before the meeting, the environmental planner for the project personally handed an invitation to all the businesses that were open in the Bonadelle Ranchos Number 9 commercial strip. If the business was closed, an invitation was left at the door of the business. A public notice was also posted at several businesses, including the Arco gas station at State Route 41 and Avenue 15, where residents, commuters and travelers would possibly stop.

The attendance sheet for the scoping meeting listed 39 people, but some attendees did not sign in and the estimated attendance was about 45 people. Only three people submitted written comments the night of the meeting: one stated the project was needed, especially a traffic signal at Avenue 15; one was a “thank you” for the invitation; and one favored Alternative 2 because it avoided any business relocation. No comments were submitted in favor of the No-Build Alternative.

During the 45-day comment period, seven more comments were received. Of the 10 total comments submitted, one favored Alternative 2, four favored Alternative 4, and one favored the No-Build Alternative; four comments had no preference for an alternative.

Circulation of the 2016 Draft Environmental Document
The Draft Environmental Impact Report/Environmental Assessment with Section 4(f) Evaluation was circulated for public review from December 23, 2016 to February 8, 2017.

A Notice of Availability that included the circulation dates as well as information about the public hearing was sent to people on the project mailing list. This list included agencies; local, state, and federal representatives; and residents within the project area.

Public Hearing

A public hearing was held on January 11, 2017 at the Ranchos Middle School, 12445 Road 35½, Madera, CA 93636. The public hearing was held from 4:00 p.m. to 7:00 p.m. and was informal; attendees were invited to arrive at any time. The purpose of the public hearing was to provide the public and any other interested parties with information about the status of the project, the build alternatives, and the new draft environmental document. About 35 people attended the public hearing.

A court reporter was available to record oral comments made by attendees, and written comments were also accepted. One written comment was received, and one comment was recorded by the court reporter (see Appendix R). The comments focused on project impacts to land zoned for commercial development and the project timeline.

Intergovernmental Consultation for Biological Resources

California Department of Fish and Wildlife

On November 5, 2014, Caltrans biologists initiated informal consultation with the California Department of Fish and Wildlife by having a meeting with the California Department of Fish and Wildlife Caltrans Liaison Laura Peterson-Diaz, U.S. Fish and Wildlife Service Caltrans Liaison Jen Schofield, and U.S. Army Corps of Engineers representative Leah Fisher. The purpose of the meeting was to discuss the potential biological resources present within the proposed project site.

On March 20, 2015, Caltrans biologists emailed California Department of Fish and Wildlife Caltrans Liaison Laura Peterson-Diaz inquiring whether geo-archeological testing would be allowed within potential California tiger salamander habitat without an incidental take permit.

On March 23, 2015, California Department of Fish and Wildlife Caltrans Liaison Laura Peterson-Diaz emailed Caltrans biologists stating that in order to conduct geo-archaeological testing (trenching) prior to having an incidental take permit, all burrows would need to be avoided by 50 feet and most heavy construction equipment would not be permitted.

On May 20, 2015, Caltrans biologists emailed California Department of Fish and Wildlife Caltrans Liaison Laura Peterson-Diaz a map showing the approximate locations where geo-archeological testing would occur. Ms. Diaz replied the same day, informing the Caltrans biologist that the proposed testing locations may impact California tiger salamander habitat and any

trenching would need to avoid all burrows by a buffer of 50 feet. Subsequently, no trenching was conducted.

A 1600 permit from the California Department of Fish and Wildlife for streambed alteration is required for the project. During the Plans, Specifications, and Estimates phase of the project, a 1600 permit application would be submitted to the California Department of Fish and Wildlife.

An Incidental Take Permit for any of the state-listed species would be obtains from the California Department of Fish and Wildlife prior to Ready to List.

U.S. Fish and Wildlife Service
On November 5, 2014, Caltrans biologists initiated informal consultation with the U.S. Fish and Wildlife Service by having a meeting with U.S. Fish and Wildlife Service Caltrans Liaison Jen Schofield, California Department of Fish and Wildlife Caltrans Liaison Laura Peterson-Diaz, and U.S. Army Corps of Engineers representative Leah Fisher. The meeting discussed the potential biological resources present within the proposed project site.

On November 14, 2014, Caltrans biologists sent a letter via email to U.S. Fish and Wildlife Service Recovery Permit Coordinator David Kelly requesting approval to carry out wet season survey activities for vernal pool branchiopods.

On November 18, 2014, Caltrans biologists had a telephone conversation with Jen Schofield regarding the biological surveys to be carried out in areas designated as Critical Habitat within the project study area and actions necessary to approve wet season survey activities for vernal pool branchiopods within the Madera 41 Expressway Action Area.

On December 2, 2014, Caltrans biologists submitted a revised letter to the U.S. Fish and Wildlife Service Recovery Permit Coordinator David Kelly, requesting approval to conduct wet season survey activities for the vernal pool branchiopods.

On December 3, 2014, U.S. Fish and Wildlife Service Recovery Permit Coordinator David Kelly, sent an email correspondence to Caltrans biologists authorizing wet season surveys for vernal pool fairy shrimp.

On March 15, 2015, correspondence with the U.S. Fish and Wildlife Service Caltrans Liaison Jen Schofield, specified requirements for cultural excavation at various areas along State Route 41. A Biological Opinion from the U.S. Fish and Wildlife Service and a take authorization permit would be required prior to groundbreaking.

On September 14, 2018, Caltrans project biologists hosted a conference call with U.S. Fish and Wildlife Service Liaison, Jen Schofield to discuss the project with regard to Section 7 Endangered Species Act Consultation. A site

visit was scheduled with Ms. Schofield, so she could visit the project and observe the habitat conditions within the Action Area.

On September 27, 2018, Caltrans biologists met with Ms. Schofield to visit the project site, discus species and habitat impacts, and mitigation options. The group additionally visited the proposed Madera Pools Mitigation Bank site and the proposed Fenston Ranch Mitigation property.

On December 14, 2018, Caltrans submitted a Biological Assessment (BA) for the proposed project to the U.S. Fish and Wildlife Service to initiate formal consultation under Section 7 of the Endangered Species Act for federally listed species and designated critical habitats with a potential to occur or that do occur within the project Action Area.

On January 29, 2019, updated official species lists were obtained for the project from the U.S. Fish and Wildlife Service ECOS IPaC website and the National Oceanic and Atmospheric Administration National Marine Fisheries Service online species list mapper website.

On February 5, 2019, Ms. Cornwell emailed Ms. Schofield at the U.S. Fish and Wildlife Service to notify them of reductions to both the areas of impacts and compensatory mitigation.

On March 21, 2019, Ms. Schofield emailed Ms. Cornwell requesting additional information about the Biological Assessment.

On April 9, 2019, Ms. Cornwell emailed Ms. Schofield to let her know Caltrans was in the process of preparing a revised Biological Assessment based on the reductions to areas of impacts and compensatory mitigation.

On April 18, 2019, updated official species lists were obtained for the project from the U.S. Fish and Wildlife Service ECOS IPaC website and the National Oceanic and Atmospheric Administration National Marine Fisheries Service online species list mapper website.

On April 18-19, 2019, Ms. Cornwell and Ms. Schofield exchanged emails pertaining to the excavation of burrows deemed suitable for the California tiger salamander, as well as potential relocation efforts.

On April 30, 2019, Ms. Cornwell provided Ms. Schofield with additional information, as was requested on March 21, 2019. Ms. Cornwell additionally provided a draft revised Biological Assessment for the U.S. Fish and Wildlife Service to review based on the agencies' coordination on the original Biological Assessment submitted December 14, 2018.

On June 21, 2019, Updated species lists were obtained for the project from the CNDDB and CNPS websites, using a 9-quadrangle search.

June 25-26, 2019: Ms. Schofield emailed Ms. Cornwell to confirm the changes made in the draft revised Biological Assessment were sufficient. Ms. Schofield followed up with additional questions and comments. Ms. Cornwell responded to Ms. Schofield with answers to the U.S. Fish and Wildlife Service' questions.

On July 9, 2019, An updated official species list was obtained from the NOAA NMFS online species list mapper website.

On July 12 & 15-16, 2019, Ms. Cornwell emailed Ms. Schofield to discuss changes in how Caltrans would address California tiger salamander 'temporary aquatic habitat' and proposed to modify a component of the compensatory mitigation for impacts to this species habitat.

On July 24-26, 2019, Ms. Schofield emailed Ms. Cornwell to ask a series of final questions about the project and the draft revised Biological Assessment. Ms. Cornwell responded to the majority of questions and discussed and reviewed the U.S. Fish and Wildlife Service' draft proposed conservation measures.

On July 29, 2019, Ms. Cornwell emailed Ms. Schofield to follow-up on responses to the remaining questions. They additionally discussed updating Caltrans analysis of the project impacts to include indirect effects to California tiger salamander, vernal pool fairy shrimp, and vernal pool plant habitats, as well as discussing an appropriate compensation ratio for indirect impacts.

On August 14, 2019, Ms. Cornwell submitted a Revised Biological Assessment to the U.S. Fish and Wildlife Service, which included the addition of indirect effects to species' habitat and updated habitat impact mapping, impact tables, and compensatory mitigation calculations.

On August 29, 2019, the Caltrans biologist received a Biological Opinion (BO) for the proposed project from the U.S. Fish and Wildlife Service (see Appendix J).

U.S. Army Corps of Engineers

On November 5, 2014, Caltrans initiated an informal consultation meeting with the U.S. Army Corps of Engineers by meeting with U.S. Army Corps of Engineers representative Leah Fisher, U.S. Fish and Wildlife Service Caltrans Liaison Jen Schofield, and California Department of Fish and Wildlife Caltrans Liaison Laura Peterson-Diaz. The purpose of the meeting was to discuss the potential biological resources present within the proposed project site and the requirements for an individual 404(b)(1) permit. The analysis must address the least damaging alternative to aquatic resources and include cost estimates, logistics, and technology.

On August 4, 2015, the Caltrans biologist submitted a Wetland and Other Waters of the U.S. Delineation Report to Ms. Fisher, Project Manager at the U.S. Army Corps of Engineers Sacramento Office.

On August 14, 2015, Ms. Fisher sent an email to the Caltrans biologist, confirming that she had received the Wetland and Other Waters of the U.S. Delineation Report and that another U.S. Army Corps of Engineers Project Manager, Jason Deters, would review the report.

On August 27, 2015, Evan Kreklow Carnes, U.S. Army Corps of Engineers Project Manager, sent an email to Caltrans biologists saying he would be the point of contact for the proposed project.

Other Organizations and Agencies Consulted
On June 1, 2015, the Caltrans biologist set an email to Jeff Alvarez, founder of the Wildlife Project and biologist with extensive experience with the California tiger salamander, regarding the potential for the species to occur in previously disked agricultural areas.

Mr. Alvarez replied indicating the California tiger salamander can survive in agricultural lands, even on sites that have been deeply ripped or placed into row crops. Based on his experience, he suggested that California tiger salamanders use different elevations of burrow systems at different times of the day and seasons and confirmed that they have been found in disked fields.

On August 17, 2015, the Caltrans biologist spoke with Scott Larson, Environmental Site Restoration, Inc. biologist, over the phone about the presence/absence of federally listed species of plants on the Fenston Ranch Mitigation property close to the project. Mr. Larson relayed that he did not complete any focused botanical surveys for the 2015 blooming season, but that he had observed San Joaquin Valley orcutt grass blooming earlier than normal, in late April and early May. He also recounted that he had not observed any succulent owl's-clover blooming within the past two years.

On October 10, 2018, the Caltrans biologist contacted a San Joaquin kit fox expert, Bryan Cypher, via email to determine if grazing cattle would deter the species from using suitable non-native grassland habitat for denning. Mr. Cypher confirmed that kit fox would not be deterred from using an area for denning where cattle are present if the habitat was suitable. Mr. Cypher also confirmed that although potentially suitable habitat for the species may be present in the Action Area, the species has not been detected in the project area for some time.

Intergovernmental Consultation for Air Quality
Interagency consultation for the project began on October 12, 2015. In separate written responses, both the Federal Highway Administration

(October 20, 2015) and the U.S. Environmental Protection Agency (October 19, 2015) concurred with the finding that the State Route 41 Expressway project is not a project of air quality concern. Concurrence correspondence is included in this document as Appendix M.

Intergovernmental Consultation for Cultural Resources

Native American Heritage Commission
Through preparation of the technical studies for cultural resources, in November 2014 a request was made to the Native American Heritage Commission for a review of the Sacred Lands Inventory to determine if any known cultural properties are present within or adjacent to the Area of Potential Effects. The Native American Heritage Commission response is in the Historic Property Survey Report, a confidential summary document. The Native American Heritage Commission also provided a response identifying contacts for tribes, tribal communities, and Native American representatives who may have knowledge of cultural resources in the vicinity of the project or may have interest in the project.

Native Americans
In March 2015, letters to Native American representatives regarding the proposed project were mailed by the Caltrans District 6 Native American Coordinator. In May 2015, the Chairperson of the California Valley Miwok Tribe responded and indicated that the tribe has no issues with the project; however, if any Miwok artifacts and/or human remains are discovered, the Tribe requests notification. To date, no other comments have been received regarding the project or cultural resources outside of the monitoring conducted by tribal representatives from the North Fork Tribe.

In December 2015, a copy of the Historic Property Survey Report (HPSR), which includes the record of consultation efforts by the Caltrans Cultural Resources Branch, was sent to the following individuals and tribal governments:

- Chaushilha Yokuts, Chairperson
- Choinumni Tribe, Ms. Lorrie Planas
- Dumna Wo-Wah Tribal Government, Chairperson
- Wuksace Indian Tribe Eshom Valley Band, Chairperson
- North Fork Rancheria, Chairperson
- North Fork Mono Tribe, Chairperson
- North Valley Yokuts Tribe, Chairperson
- Picayune Rancheria of Chukchansi, Chairperson
- Southern Sierra Miwuk Nation, Chairperson
- California Valley Miwok Tribe, Chairperson
- Sierra Nevada Native American Coalition, Chairperson
- Table Mountain Rancheria, Chairperson

- Cold Springs Rancheria of Mono Indians, Chairperson

After the preferred alternative is selected and Caltrans cultural resources staff issues a finding, Caltrans would have complied with 36 Code of Federal Regulations Part 800 2(c)(1-4), 800.4(d)(1), 800.11(d). Consultation with the Native Americans for cultural resources is ongoing through construction of the project (Section 106 of the National Historic Preservation Act of 1969, as amended).

As part of the public circulation period, the Draft Environmental Impact Report/Environmental Assessment was made available for comment to all the individuals named above.

State Office of Historic Preservation
Caltrans submitted the Historic Property Survey Report and supporting technical studies to the State Office of Historic Preservation on December 4, 2016. The State Historic Preservation Officer concurred with Caltrans' determinations of eligibility in the report on March 1, 2016 (see Appendix N). Caltrans submitted a Finding of No Adverse Effect Without Standard Conditions (Appendix O) and received concurrence with the Finding of No Adverse Effect from the State Historic Preservation Officer on July 10, 2019 (see Appendix Q).

Bureau of Reclamation
In June 2015, the Bureau of Reclamation was told of the project and the potential to affect a historic property, the Madera Canal and Lateral 6.2 canal, which at that time had not been formally evaluated. The Lateral 6.2 canal was evaluated as part of the Madera 41 South Expressway Project and determined to be a contributor to the larger historic property, the Central Valley Project.

In April 2019, as part of the Findings of Effects for this project, the Bureau of Reclamation Architectural Historian, Ms. BranDee Bruce, met with Caltrans cultural staff in Fresno. Ms. Bruce was told of the project's potential to affect a portion of the Madera Canal (realignment of a portion thereof) and the replacement of a viaduct at post mile 5.7 where it intersects with State Route 41. Ms. Bruce was informed that Caltrans' position was that the impacts to both the Lateral 6.2 canal and the Madera Canal would constitute a "No Adverse Effect Without Standard Conditions." A copy of the Findings of Effects (Brady 2019) was submitted to Ms. Bruce. Caltrans has requested comments from the Bureau of Reclamation via telephone and emails. However, to date, no official comments have been received from the bureau.

Other Organizations and Agencies Consulted
A records search was done at the Southern San Joaquin Valley Information Center at California State University, Bakersfield in November 2014. The following parties were also consulted: Madera County Planning and

Community Development Department; City of Madera Planning Department; State Historic Preservation Office; and California State University, Fresno Department of Geology concerning potential paleontological resources.

Agencies Contacted During Preparation of the Technical Studies
As part of preparation of the technical studies, the following local agencies were contacted about land use issues, emergency services, traffic circulation, and schools:

- California Highway Patrol
- Madera County Sheriff's Department
- Madera County Planning Department
- Madera County Assessor's Department
- Madera Unified School District
- Natural Resources Conservation Service
- Madera County Consolidated Ambulance Dispatch
- Cal Fire

Chapter 5 List of Preparers

5.1 Caltrans Staff

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

Sherry Alexander, Associate Landscape Architect, Registered Landscape Architect in the State of California; M.A., Landscape Architecture, California State Polytechnic University, Pomona; 8 years of landscape architecture experience and 17 years of city, county, and state planning experience. Contribution: Visual Impact Assessment.

Jon L. Brady, Associate Environmental Planner/Architectural Historian. M.A., History, California State University, Fresno; B.A., Political Science and Anthropology; over 35 years of experience as a consulting archaeologist and historian. Contribution: Historic Resources Evaluation Report.

Abdulrahim R. Chafi, Ph.D., P.E. Civil/Environmental Engineer. Registered Civil Engineer in the State of California. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry and M.S. Civil/Environmental Engineering, California State University, Fresno; more than 15 years of environmental technical studies experience. Contribution: Air Quality Report.

Jaimee Cornwell, Associate Environmental Planner (Natural Sciences). B.A., Biology, University of Montana, Missoula, Montana; 17 years of biological experience. Contribution: Revised Natural Environment Study.

Julie Dick Tex, Associate Environmental Planner. M.A., Social Work, California State University, Fresno; B.A., Anthropology, California State University, Fresno; 15 years of environmental coordinator experience. Contribution: Community Impact Assessment and Environmental Impact Report/Environmental Assessment.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 19 years of environmental technical studies experience. Contribution: Water Quality Assessment Report.

Getachew Eshete, Senior Transportation Engineer. B.S. and M.E., Civil Engineering; Registered Professional Engineer; City College of New York; 24 years of Transportation Design experience - Contribution: Design Management.

Tom Fisher, Central Region Hydraulics Engineer. B.S., Civil Engineering, California State University, San Jose; 21 years of hydraulic engineering experience. Contribution: Prepared Location Hydraulic Study and Floodplain Compliance.

Chris Gardner, Senior Transportation Engineer. Registered Civil Engineer and Certified Project Management Professional (PMP). B.S., Civil Engineering, California State University, Fresno; 21 years of transportation design and project management experience. Contribution: Project Manager.

Dena Gonzalez, Senior Environmental Planner. B.S., Biology, California State University, Fresno; 18 years of biological experience. Contribution: Approved Revised Natural Environment Study.

Maya Hildebrand, Associate Environmental Planner (Air Quality Coordinator). B.S., Geology, Utah State University; 5 years of air quality analysis and 4 years of combined geological/environmental hazards experience. Contribution: Air Quality.

Wendy Kronman, Associate Environmental Planner. M.A., Linguistics, California State University, Fresno; Certificate in Horticulture, Merritt College, Oakland; B.A., Anthropology, Sonoma State University; 10 years of environmental planning experience. Contribution: Assisted with Community Impact Assessment.

David Lanner, Associate Environmental Planner. B.F.A., Art, Utah State University; 14 years of cultural resources experience. Contribution: Archaeological Survey Report and Historic Property Survey Report.

Joseph Llanos, Graphic Designer III. B.A., Graphic Design, California State University, Fresno; 17 years of visual design and public participation experience. Contribution: Graphics.

Mandy Marine, Associate Environmental Planner/Archaeologist. B.A., Anthropology, California State University, Fresno; more than 20 years of California archaeology experience. Contribution: Native American Coordination.

Adel Najar, Civil Engineer. B.S., Civil Engineering, California State University, Fresno; 15 years of design experience. Contribution: Project Design.

Leah Parrilla, Associate Environmental Planner/Natural Sciences. M.S., Biology, California State University, Long Beach; B.S., Biology, University of California, Irvine; 7 years of experience in biological research and analysis. Contribution: Natural Environment Study.

Richard Putler, Senior Environmental Planner, M.A., City and Regional Planning, California State University, Fresno; B.A., Political Science, University of California, Davis; 16 years of environmental planning experience. Contribution: Environmental Manager.

Michelle Ray, Senior Environmental Planner. B.S., Environmental Toxicology and Biology, University of California, Riverside; 10 years with Caltrans as an environmental planner and biologist. Contribution: Environmental Manager.

Ed Schefter, Senior Transportation Surveyor. B.S., Surveying, California State University, Fresno; more than 20 years of GPS/GIS experience. Contribution: GIS.

Jane Sellers, Associate Environmental Planner. B.A., Journalism—News-Editorial Sequence, California State University, Fresno; more than 25 years of writing/editing, media, corporate communications, Request for Proposal, and public relations experience. Contribution: Draft and Final EIR/EA technical editing and review.

Lea Spann, Engineering Geologist. B.A., Environmental Studies, University of California, Santa Barbara; over 20 years of hazardous waste/materials experience and 5 years of environmental planning experience. Contribution: Initial Site Assessment.

Chelsea Starr, Environmental Planner. B.S., Biology, University of Washington; 1 year of environmental planning experience. Contribution: Assisted with preparing Final EIR/EA.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; more than 20 years of hazardous waste and water quality experience; 7 years of paleontology/geology experience. Contribution: Paleontological Impact Report.

John Thomas, Senior Environmental Planner. B.A., Geography, California State University, Fresno; 20 years of environmental planning experience. Contribution: Prepared Final EIR/EA.

Vladimir Timofet, Transportation Engineer. M.S., Civil Engineering, California State University, Fullerton; 13 years of environmental technical studies experience. Contribution: Noise Study.

Roger Valverde, Graphic Designer III. Certificate of Multimedia, Mount San Jacinto and California State University, Fresno; more than 25 years of visual design and public participation experience. Contribution: Graphics.

5.2 Consultant Staff

Cogstone Resource Management Inc.

John Harris, Cogstone Resource Management Inc., 1815 W. Taft Avenue, Orange, CA 92865. Contribution: Paleontological Evaluation Report and Preliminary Paleontological Mitigation Plan.

Kim Scott, Cogstone Resource Management Inc., 1815 W. Taft Avenue, Orange, CA 92865. Contribution: Paleontological Evaluation Report and Preliminary Paleontological Mitigation Plan.

ECORP Consulting

Keith Kwan, ECORP Consulting, 2525 Warren Drive, Rocklin, CA 95677, Contribution: Wetland Delineation Report, Botanical Survey

Clay DeLong, ECORP Consulting, 2525 Warren Drive, Rocklin, CA 95677, Contribution: Special-Status Plant Survey, Wetland and Other Waters Delineation and CRAM Assessment

Theresa J. Johnson, ECORP Consulting, 2525 Warren Drive, Rocklin, CA 95677, Contribution: Botanical Survey

Tom Scofield, ECORP Consulting, 2525 Warren Drive, Rocklin, CA 95677, Contribution: Wetland and Other Waters Delineation and CRAM Assessment

Eric Stitt, ECORP Consulting, 2525 Warren Drive, Rocklin, CA 95677, Contribution: Wetland and Other Waters Delineation and CRAM Assessment

Dustin Brown ECORP Consulting, 2525 Warren Drive, Rocklin, CA 95677, Contribution: Vernal Pool Fairy Shrimp Survey (Dry Season)

H.T. Harvey & Associates

Steve Carpenter, H.T. Harvey, 7815 N. Palm Avenue, Suite 310 Fresno, CA 9371, Contribution: California Tiger Salamander Larval Survey

Dr. Jeff Wilkinson, H.T. Harvey, 7815 N. Palm Avenue, Suite 310 Fresno, CA 9371, Contribution: California Tiger Salamander Larval Survey

Jacquelyn Maher, H.T. Harvey, 7815 N. Palm Avenue, Suite 310 Fresno, CA 9371, Contribution: California Tiger Salamander Larval Survey

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C. Wilkinson , H.T. Harvey, 7815 N. Palm Avenue, Suite 310 Fresno, CA 9371, Contribution: Wetland and Other Waters Delineation and CRAM Assessment

C. Winchell , H.T. Harvey, 7815 N. Palm Avenue, Suite 310 Fresno, CA 9371, Contribution: Wetland Delineation and CRAM Assessment

Far Western Research Group, Inc.

Young, Craig D., PhD., Far Western Anthropological Research Group, Inc. Contribution: Archaeological Evaluation Report.

Parsons' Corporation

Keri O'Connor, Parson's Corporation, 2495 Natomas Park Drive, Suite 510 Sacramento, California 95833, Contribution: Botanical Survey

Chapter 6 Distribution List

In compliance with the National Environmental Policy Act and the California Environmental Quality Act, the Draft Environmental Impact Report/Environmental Assessment was distributed to key interested agencies, key elected and appointed officials, tribes and tribal communities, as well as to all parties requesting it. A public notice of availability of the draft environmental document was published in local newspapers, and a copy of the draft environmental document was made available for review at the Madera County Public Library and through the California Department of Transportation's public information office. The list of people and agencies receiving the Draft Environmental Impact Report/Environmental Assessment or a notice of availability is included in this chapter.

Federal Agencies

ATTN: Regulatory Branch
U.S. ACOE - Sacramento District
1325 J Street, Room 1513
Sacramento, CA 95814

State Conservationist
USDA-Natural Resources Conservation Service
430 G Street #4164
Davis, CA 95616-4164

Director
DOI - Bureau of Safety & Environmental Enforcement
1849 C Street, NW
Washington, D.C. 20240

Region 9 Director
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Office of the Secretary
U.S. Department of Agriculture
1400 Independence Ave., S.W.
Washington, D.C. 20250

Regional Director
Bureau of Indian Affairs
2800 Cottage Way
Sacramento, CA 95825

Mid-Pacific Regional Director
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825-1898

Regional Director
Federal Transit Administration
201 Mission Street
San Francisco, CA 94105-1839

Regional Director
NPS - Pacific West Region
333 Bush Street, Suite 500
San Francisco, CA 94104-2828

Regional Director
Department of Health and Human Services
50 United Nations Plaza
San Francisco, CA 94102-4912

Region IX Director
U.S. Department of Education
50 Beale Street, Room 9700
San Francisco, CA 94102-4912

Regional and Local Agencies

Commander
California Highway Patrol
3051 Airport Drive
Madera, CA 93637-9294

Director
Madera County Agricultural Commission
332 S. Madera Avenue
Madera, CA 93637

Executive Director
Madera County Farm Bureau
13314 Road 26
Madera, CA 93637-8923

Chairwoman
Madera Service Center
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Madera, CA 93637-3163

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Operating Engineers Local #3
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Alameda, CA 94244-2460

Executive Officer
San Joaquin River Conservancy
5469 E. Olive Avenue
Fresno, CA 93727

Director
Madera County Planning Division
200 W. 4th Street
Madera, CA 93637

Commander
California Highway Patrol
1382 W. Olive Avenue
Fresno, CA 93728-2890

President/CEO
Madera County Chamber of Commerce
120 North E Street
Madera, CA 93638

Chief
Madera County Fire Department
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Madera, CA 93637

Director
Madera County Resource Management Agency
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Madera, CA 93637

Executive Director
Madera Irrigation District
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Madera, CA 93637-9106

Tehipite Chapter of the Sierra Club
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Fresno, CA 93755

Executive Director
Madera County Transportation Commission
2001 Howard Rd, Suite 201
Madera, CA 93637

Environmental Review
Friant Water Authority
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Sacramento, CA 95814

Executive Director
Madera County Economic Development Commission
2425 W. Cleveland Ave., Ste 101
Madera, CA 93637

President/CEO
Madera County Flood Control District
135 W. Yosemite Avenue
Madera, CA 93637-3514

Madera County Sheriff's Headquarters
14143 Road 28
Madera, CA 93637

Supervisor,
Pacific Gas and Electric, Envir Permits/Planning
1455 E. Shaw Ave.-Bag23
Fresno, CA 93657

Business Director
The Bridge Church
3438 E. Ashlan Ave.
Fresno, CA 93726

Chairman
Madera Local Agency Formation Commission
200 W. 4th Street
Madera, CA 93637

State Agencies

Director
Division of Boating and Waterways
One Capitol Mall - Suite 410
Sacramento, CA 95814

Regional Manager
CA Department of Fish and Wildlife
1234 E. Shaw Avenue
Fresno, CA 93710-7802

Director
California Dept of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296

Chief
California Highway Patrol
601 N. 7th St.
Sacramento, CA 95811

Director
Department of Food and Agriculture
1220 N. Street
Sacramento, CA 95814

Director
Dept of Resources Recycling & Recovery (CalRecycle)
8800 Cal Center Drive
Sacramento, CA 95826-3268

Commission Chair
State Lands Commission
100 Howe Ave., Suite 100
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Regional Manager
Central Valley Regional Water Board
1685 E Street
Fresno, CA 93706

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Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95812-4025

Director
Dept. of Health & Human Services
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Sacramento, CA 95814

Director
Department of Water Resources
1416 9th St., Room 1115-1
Sacramento, CA 95814

Division Chief
California Highway Patrol
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Fresno, CA 93722-6414

Commission Chair
Native American Heritage Commission
1550 Harbor Blvd., Ste 100
West Sacramento, CA 95691

Board Chair
State Air Resources Board
1001 I Street
Sacramento, CA 95812

Secretary
CA Natural Resources Agency
1416 9th Street - 1311
Sacramento, CA 95814-5509

Executive Officer
Central Valley Regional Water Board
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Rancho Cordova, CA 95670

Office of the Secretary
CA Environmental Protection Agency
1001 I Street
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Manager
CA State Transportation Agency
915 Capitol Mall, Room 350-B
Sacramento, CA 95814

Director
CA Department of Fish and Wildlife
1416 Ninth Street - 12 Floor
Sacramento, CA 95814

Fresno Field Office
State Department of Housing and Community Development
2020 West El Camino Ave
Sacramento, CA 95833

Executive Director
Energy Commission
1516 Ninth St., MS 29
Sacramento, CA 95814-5512

Commission Chair
California Transportation Commission
1120 N St., Rm 2221 (MS52)
Sacramento, CA 95814-5620

President
Central Valley Flood Protection Board
3310 E. Camino Ave., Rm 151
Sacramento, CA 95821

Office of Planning & Research/State Clearinghouse
1400 10th Street
Sacramento, CA 95814

Executive Officer
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Caltrans Division of Environmental Analysis
P.O. Box 942874, MS 27
Sacramento, CA 94274-0001

Commander
Cal Fire - Madera-Mariposa-Merced Units
5366 Hwy 49 North
Mariposa, CA 95338

California Office of Traffic Safety
2208 Kausen Drive, Suite 300
Elk Grove, CA 95758

Federal Elected Officials

Honorable Kamala Harris
U.S. Senate
2500 Tulare Street, Suite 4290
Fresno, CA 93721

Honorable Dianne Feinstein
U.S. Senate
2500 Tulare Street, Suite 5290
Fresno, CA 93721

Honorable Tom McClintock
U.S. House of Representatives
California - District 4
2200A Douglas Blvd, Suite 240
Roseville, CA 95661

Honorable Jim Costa
U.S. House of Representatives
California - District 16
855 M Street, Suite 940
Fresno, CA 93721

State Elected Officials

Honorable Anthony Cannella
California State Senate, District 12
1640 N Street, Suite 210
Merced, CA 95340

Honorable Frank Bigelow
California State Assembly, District 5
730 North I Street, Suite 102
Madera, CA 93637

County Board of Supervisors

Honorable Brett Frazier
Madera County Board of Supervisors
District 1 Supervisor
200 West 4th Street
Madera, CA 93637

Honorable David Rogers
Madera County Board of Supervisors
District 2 Supervisor
200 West 4th Street
Madera, CA 93637

Honorable Robert L Poythress
Madera County Board of Supervisors
District 3 Supervisor
200 West 4th Street
Madera, CA 93637

Honorable Max Rodrigues
Madera County Board of Supervisors
District 4 Supervisor
200 West 4th Street
Madera, CA 93637

Honorable Tom Wheeler
Madera County Board of Supervisors
District 5 Supervisor
200 West 4th Street
Madera, CA 93637

Native American Tribes, Agencies, and Communities

Mr. Jerry Brown, Tribal Chair
Chaushilha Yokuts
10553 N. Rice Road
Fresno, CA 93720

Mr. Ron Goode, Tribal Chair
North Fork Mono Tribe
13396 Tollhouse Road
Clovis, CA 93619

Lorrie Planas
Choinumni Tribe
2736 Palo Alto
Clovis, CA, 93611

Mr. Kenneth Woodrow, Tribal Chair
Eshom Valley Band of Indians
1179 Rock Haven Ct.
Salinas, CA 93906

Leora Beihn
North Fork Rancheria
32024 Poy-Ah-Now Road
North Fork, CA 93643

Lois Martin, Chairperson
Southern Sierra Miwuk Nation
P.O. Box 186
Mariposa, CA 95338

Silvia Burley, Chairperson,
California Valley Miwok Tribe
10601 N. Escondido Place
Stockton, CA 95212

Mr. Robert Ledger Sr, Chairman
Dumna Wo-Wah Tribal Government
2216 E. Hammond St
Fresno, CA 93602

Mr. Reggie Lewis, Chairman
Picayune Rancheria of Chukchansi
46575 Road 417, Bldg. A
Coarsegold, CA 93613

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Frank Marquez
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Friant, CA 93626

Lawrence Bill, Chairman
Sierra Nevada Native American Coalition
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Dunlap, CA 93621

Ms. McGovern, Chairperson
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North Fork, CA 93643

Ms. Lee Ann Walker-Grant
Table Mountain Rancheria
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Appendix A Resources Relative to the Requirements of Section 4(f)

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project has been carried out by Caltrans under its assumption of responsibility under 23 U.S. Code 327.

Section 4(f) De Minimis Determination

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 U.S. Code 138 and 49 U.S. Code 303 to simplify the processing and approval of projects that have only de minimis impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a de minimis impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. The Federal Highway Administration's final rule on Section 4(f) de minimis findings is codified in 23 Code of Federal Regulations 774.3 and 774.17.

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 U.S. Code 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

There are no qualifying publicly owned parks, recreational facilities, or wildlife refuges within half a mile of the project area. Within the project study area, there are historic properties.

Historic Properties

The Caltrans architectural historian formally evaluated one historic-era property identified within the architectural Area of Potential Effects: Madera Canal (P-20-002308) and its associated feature, the Lateral 6.2 canal. The portions of the Madera Canal and the Lateral 6.2 canal within the Area of Potential Effects were determined eligible for the National Register under Criterion A, which includes events that have made a significant contribution to the broad patterns of our history. The Madera Canal and the Lateral 6.2 canal are eligible as a contributor/character-defining feature of the Central Valley Project and the Central Valley Project's role in the development of agriculture in the San Joaquin Valley after 1940.

The Madera Canal is eligible at a state level of significance under Criterion A (significant contribution) as a key component in the original Central Valley

Project. It is also considered a historical resource for the purposes of the California Environmental Quality Act.

Both Build Alternatives propose crossing the Madera Canal and the Lateral 6.2 canal by installing box culverts. The installation of the box culverts would result in the physical incorporation of some portion of the canals into the transportation facility and would therefore constitute a use under Section 4(f). During the Plans, Specifications, and Estimates phase of the project, a detailed hydrology and geological study would be completed and a decision, in consultation with the U.S. Bureau of Reclamation and the Madera Irrigation District, can be made on the type of structure to be used.

Based on the determination of “no adverse effect” under Section 106, Caltrans has determined the use of the historic property as a de minimis finding under the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6009. Section 4(f) provisions would apply to Madera Canal and its associated feature, the Lateral 6.2 canal, in the following manner:

1. Both Build Alternatives cannot avoid crossing the Madera Canal and the Lateral 6.2 canal because both canals flow in a westerly direction diagonally across the project corridor and intersect with State Route 41.

2. Proposed crossings of the two canals would not diminish the integrity of the structure as a contributor/character-defining feature of the Central Valley Project because it would not modify the canal’s use nor diminish the integrity of design, materials, and workmanship of the historic structure. The type of crossing would not change the canals’ function as a bulk conveyance system distributing irrigation water to farmers, which is a defining feature for eligibility.

3. All changes to the banks and bed of the Madera Canal and its contributor, the Lateral 6.2 canal, would be completed in a manner that would not adversely affect the integrity of the historic property. Box culverts would be installed “in-kind” into the canal banks without making any changes to the specifications (depth, height, etc.) of the existing structure.

   Fill (dirt) would be used to build up the outside of the canal banks to support the approaches to the box culvert, which would appear to span the canal. Both structures would maintain the canals’ existing water flow. Work at Lateral 6.2 would consist of placement of two 84-inch diameter pipe culverts to provide a wider roadway. Work at the Madera Canal would involve the realignment of approximately 3,000 feet of the original canal and then placing a new box culvert in the realigned portion of canal within Caltrans ROW.

4. Caltrans submitted a letter to the State Historic Preservation Officer in June 2019 notifying the agency of Caltrans' intent to adopt the de minimis finding of effect. (Appendix P)

A concurrence letter on the Finding of No Adverse Effect for the proposed project was received from the State Office of Historic Preservation in July 2019. (Appendix Q)

Resources Evaluated Relative to the Requirements of Section 4(f)
This section of the document discusses parks, recreational facilities, wildlife refuges and historic properties found within or next to the project area that do not trigger Section 4(f) protection because either: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

Bridge Number 41-0030 was evaluated in 2002 as part of a separate highway project. At that time, it was determined to be a contributor to the Madera Canal and the Central Valley Project under Criteria A and C. However, the original materials (wood post and beam railing) were replaced with non-similar materials (non-perforated concrete railing), which was considered an adverse impact. In 2015, a qualified Caltrans architectural historian reevaluated Bridge Number 41-0030 due to the 2002 modifications in the context of the Madera Canal and its associated features. Bridge Number 41-0030 was determined not eligible individually or as a contributor under any applicable criterion due to a loss of historical integrity. Therefore, the provisions of Section 4(f) are not triggered.

There are no parks, recreational facilities, wildlife refuges, or other historic properties found within or next to the project area.

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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

Making Conservation a California Way of Life.

April 2018

NON-DISCRIMINATION POLICY STATEMENT

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

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

For information or guidance on how to file a complaint, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

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

LAURIE BERMAN
Director

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

Appendix C 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 (CFR) 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 one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

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

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

Appendix D 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 1/11/16
1. Name of Project Madera 41 South Expressway	4. Sheet 1 of 1
2. Type of Project Highway	5. Federal Agency Involved FHWA/Caltrans
PART II *(To be completed by NRCS)*	6. County and State Madera, CA
1. Date Request Received by NRCS 1/11/16	2. Person Completing Form Priscilla Baker
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 ☒ NO ☐	4. Acres Irrigated 281658 / Average Farm Size 398
5. Major Crop(s) Almonds, Grapes, Dairy	6. Farmable Land in Government Jurisdiction Acres: 290683 % 21.3
7. Amount of Farmland As Defined in FPPA Acres: 365435 % 26.7	
8. Name Of Land Evaluation System Used Revised Storie Index	9. Name of Local Site Assessment System
10. Date Land Evaluation Returned by NRCS 2/25/16	

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment			
		Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		278 "Alt 2"	262 "Alt 4"		
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0	0		
C. Total Acres In Corridor		278	262		
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland		52.9	54.1		
B. Total Acres Statewide And Local Important Farmland		1.8	2.6		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		.01496%	.01688%		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		data not available			
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)*		80.2	79.8		
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area In Nonurban Use	15	12	12		
2. Perimeter In Nonurban Use	10	10	9		
3. Percent Of Corridor Being Farmed	20	16	2		
4. Protection Provided By State And Local Government	20	20	20		
5. Size of Present Farm Unit Compared To Average	10	0	0		
6. Creation Of Nonfarmable Farmland	25	2	0		
7. Availability Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	18	18		
9. Effects Of Conversion On Farm Support Services	25	0	0		
10. Compatibility With Existing Agricultural Use	10	4	0		
TOTAL CORRIDOR ASSESSMENT POINTS	160	77	66	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	80.2	79.8	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	77.0	66.0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	157.2	145.8	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
N/a	223-230 AC	N/a	YES ☐ NO ☒

5. Reason For Selection:
no preferred alternative selected at this time; however there is not a significant difference in farmland impacts resulting from either Build Alternative.

Signature of Person Completing this Part: [signature] DATE 2/25/16

NOTE: Complete a form for each segment with more than one Alternate Corridor

Appendix E Avoidance, Minimization and/or Mitigation Summary

The following section describes the avoidance, minimization and/or mitigation measures that would be required for construction of the proposed project.

Relocations
No mitigation measures are required for impacts to relocations. The following avoidance and minimization measures are required:

- According to the Draft Relocation Impact Report, an adequate supply of comparable commercial sites is available for relocation of affected businesses within a 15-mile radius of the project area (in Madera County and the City of Madera as well as in Fresno, Clovis, and several other rural neighborhoods). It is expected that the businesses along State Route 41 between Avenue 14 and Avenue 15 may be able to relocate within the project vicinity, either within the existing commercial area in Rolling Hills or in the areas of the new developments planned for commercial or light industrial use. The ability of the businesses to rebuild and/or reestablish in the Bonadelle Ranchos Number 9 area is highly unlikely because the remaining commercially zoned parcels, on the east side of Huntington Road, are already occupied; however, the businesses could potentially relocate to the surrounding areas. At this time, potential reestablishment areas are Madera Ranchos along Avenue 12, Rolling Hills along State Route 41 south of Avenue 12, and in the city of Madera.

- The County of Madera and the immediate surrounding areas (Fresno, Clovis and other rural neighborhoods) have sufficient resources to absorb the project's displacement needs. If the resources of the immediate area are available, businesses usually prefer to relocate as close as possible to their existing location. Displaced employees also prefer to reside and work in the same location allowing them to remain in the same school districts and their immediate familial and cultural settings. This may be possible because of future planned housing subdivisions under construction and the current market supply of housing in southern Madera County.

- Caltrans would provide relocation assistance payments 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 advisory services for assistance

in the moving process, a replacement housing payment, payments for moving expenses, and assistance with closing costs on replacement housing.

- Per state and federal statutes, persons affected by personal property moves from rented storage units would be eligible for moving expenses under the Caltrans Relocation Assistance Program.

Utilities and Emergency Services

Utilities
No mitigation measures are required for impacts to utilities. The following avoidance and minimization measures are required:

- Consultation with PG&E began in spring 2015 and would be ongoing throughout the life of the project. Early discussions with other utility companies with facilities in the project corridor would be initiated as needed and would be ongoing during the life of the project.

- On June 29, 2015, Caltrans submitted an Application for Permit for Archaeological Investigations (ARPA permit) to the Bureau of Reclamation to evaluate the project's potential impacts to the Madera Canal and the Lateral 6.2 canal. On July 23, 2015, the Bureau of Reclamation issued the permit.

- Consultation with the Madera Irrigation District began in May 2015 and would be ongoing throughout the life of the project.

- During the design phase of the project, a more detailed study would be conducted to determine the necessary relocation of additional utilities. Caltrans would meet with the affected utilities to coordinate the details for relocations and easements to avoid or minimize any interruption in services.

Emergency Services
No mitigation measures are required for impacts to emergency services. The following avoidance and minimization measures are required:

A traffic management plan would be developed to minimize delays and maximize safety during construction. The traffic management plan could include, but is not limited to, the following:

- Release of information through brochures and mailers, press releases, and notices from the Caltrans public information office.

- Use of fixed and portable changeable message signs.

- Incident management through the Construction Zone Enhancement Enforcement Program and the transportation management plan.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Traffic and Transportation
No mitigation measures are required for impacts to traffic and transportation. The following avoidance and minimization measures are required:

- During construction, a Traffic Management Plan would be developed to handle local traffic patterns and reduce delay, congestion, and the likelihood of accidents. The Traffic Management Plan includes notifying the public of construction activities via changeable message signs, construction strategies, and the Caltrans District 6 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 mitigation measures are required for impacts to pedestrian and bicycle facilities. The following avoidance and minimization measures are required:

- A Class III Bikeway or Bike Route could be incorporated into the expressway and would be considered during the design phase of the project.

Public Transportation
No avoidance, minimization, and mitigation measures are required.

Visual
The following avoidance and minimization measures are recommended to preserve the visual quality of the highway facility in this segment of State Route 41:

- To comply with the Highway Design Manual and the Project Planning and Design Guide (PPDG 2010), Section 3 Design Program Responsibility - Landscape Architecture, if a slope design is steeper than a 4:1 ratio (h:v), the District Landscape Architect would prepare or approve an erosion control plan. If the slopes are 2:l (h:v) or steeper, Geotechnical Services would prepare a Geotechnical Design Report and the District Landscape Architect should prepare or approve an erosion control plan. The District Landscape Architect should be involved early in the design phase to help make the determination on slope design. The Professional Engineer (PE) in collaboration with the District Landscape Architect would need to provide justification as to why the slopes cannot meet the 4:1 (h:v) or flatter slope design.

- Materials and planting compositions should be regionally appropriate and visually compatible with local indigenous plant communities or surrounding landscape planting. Plantings should be designed according to the perspective of the viewer.
- Contour grading and planting with consideration for the safety of maintenance workers and the public.
- Maximum recommended slopes for this project are 1:2 with transitions to 1:4 side slopes as soon as possible. The newly constructed slopes would be designed to aesthetically blend with the surrounding landscape, and be adequate for planting of trees, native shrubs, and grasses.
- Any new right-of-way fencing should keep with the existing rural fence. However, highway facility type (i.e., freeway or expressway) and adjacent zoning/land use would also factor into the type of fence that is selected.
- Any walls would be designed with aesthetic treatments to match treatments on other structures.
- If night construction is necessary, light spillage from portable sources would be minimized. At a minimum, the construction contractor would be required to minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights would be used. Portable lights would be operated at the lowest allowable wattage and height, and would be raised to a height no greater than 20 feet. All lights would be screened and directed downward toward work activities and away from the night sky, highway users and highway neighbors, to the maximum extent possible. The number of nighttime lights used would be minimized to the greatest extent possible.

Proposed Mitigation Measures
No mitigation measures are required for the crossings at the Madera Canal and the Lateral 6.2 canal if box culverts are installed.

Minimization for visual impacts would be required for the new southbound bridge undercrossing at Avenue 11. The new bridges would require aesthetic enhancements and texture on the slope paving under the bridge abutments. Aesthetic treatments would minimize the adverse visual effects and enhance the positive visual effects of the project. Also, areas beyond the gore would require contrasting surface treatment. Any retaining walls would be designed with aesthetic treatments to match treatments on other structures.

Cultural Resources

Cultural Resources/Archaeology/Architectural Resources
Caltrans has consulted the State Office of Historic Preservation regarding the Finding of Effect and has determined a Finding of No Adverse Effect Without Standard Conditions for the project. A Caltrans Principal Architectural Historian will review construction plans at 60 percent and 95 percent constructability and monitor construction activities at Madera Canal Lateral 6.2.

Consultation with Native Americans and notifications of the project updates, revisions, and changes to the project are ongoing and would continue throughout the life of the proposed project.

Water Quality
No mitigation is required for impacts to water quality. The following avoidance and minimization measures are required:

Construction
The following temporary Construction Site Best Management Practices would be incorporated into the project:

- 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 prior to any clearing or grading activities.

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

- A site-specific spill prevention plan shall be implemented for potential hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed 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.

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

Paleontology
The following mitigation measures are recommended to mitigate potential impacts of the project:

- All open excavations more than 5 feet deep in native sediments of the Modesto and Turlock Lake Formations should be monitored full-time by a qualified paleontologist.

- During grading, sand interbeds within the Riverbank Formation should be monitored part-time by a qualified paleontologist. Sand interbeds are the sand layers interspersed among layers of other soil material, like silt or clay.

- During grading, the gravels of the Riverbank Formation, North Merced Gravel unit of the Merced Formation, and Mehrten, Auberry, and Ione Formations should be spot checked by a qualified paleontologist.

- During grading, full-time monitoring of the Mehrten and Riverbank Formations may be required as determined by the Principal Paleontologist depending on conditions encountered.

- The Principal Paleontologist would meet the qualifications outlined under preparer qualifications in the Caltrans Standard Environmental Reference, Volume 1, Chapter 8, and would be responsible to implement the mitigation plan and maintain professional standards of work.

- All project personnel shall receive training by a qualified paleontologist before the start of work.

- Recovered fossils would be prepared to the point of identification and placed in an approved paleontological repository.

Hazardous Waste

The following avoidance and minimization measures are recommended to minimize potential impacts of the project:

- A Preliminary Site Investigation and/or a Detailed Site Investigation will be conducted prior to the construction of Phase 2.
- The Chevron gas station owner or operator will remove all pumps, tanks, piping and appurtenances and will remove all identified contamination.
- If contamination is present that cannot be removed, ownership of any residual contamination will remain with the Chevron gas station owner or operator.
- Acquisition of any contaminated property will be conducted as required by Caltrans policies including policy PD-02.
- Caltrans Standard Special Provisions and Non-Standard Special Provisions pertaining to hazardous waste would be provided during the Plans, Specifications and Estimates phase of the project prior to construction.
- The appropriate special provision would be provided to address aerially deposited lead and lead found in white and yellow striping/paint/pavement markings.

Air Quality

No mitigation is required for impacts to air quality. The following avoidance and minimization measures are required:

- The addition of paved shoulders in the project area would minimize particulate matter (PM10 emissions) by eliminating the emission of road dust when vehicles pull off of the roadway.
- This 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 two tons of either PM_{10} and/or NO_X 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 that the California state average” or if emissions exceed the limits, the contractor can make the payment of fees paid to the San Joaquin Valley Air Pollution Control District.

- Caltrans Standard Specifications pertaining to dust control and dust palliative requirement 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

No measures are required for the operation of Alternative 2, and a soundwall is recommended for the operation of Alternative 4.

Results of the abatement (soundwall) analysis indicated that a 16-ft soundwall placed on the shoulder of the roadway would be needed if Alternative 4 is selected as the preferred alternative to reduce noise levels by the minimum required 5 decibels at locations where predicted noise levels would be approaching or exceeding noise abatement criteria requirements (67 decibels).

The following measures are required to minimize noise and vibration disturbances at sensitive receptors during periods of construction for both Build Alternatives.

Equipment Noise Control

- Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers’ recommended noise abatement features, such as mufflers and engine enclosures, and also ensure that engine vibration isolators are intact and operational. Newer equipment would generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices(e.g., mufflers and shrouding, etc.).

- Use construction methods or equipment that would provide the lowest level of noise and ground vibration impact such as alternative low noise pile installation methods.

- Turn off idling equipment.

- Use and relocate temporary noise barriers, as needed, to protect sensitive receptors against excessive noise from construction activities. Noise barriers can be made of heavy plywood or moveable insulated sound blankets.

Administrative Measures

- Ensure noise levels associated with construction activities are in compliance with applicable allowable limits set forth in noise

ordinances of the County of Madera. Implement a construction noise and/or vibration monitoring program to limit the impacts.

- Limit construction activities to daytime hours, if possible. If nighttime construction is absolutely necessary, obtain the proper permits.
- Keep noise levels relatively uniform, and avoid impulsive noises.
- Maintain good public relations with the community to minimize objections to the unavoidable construction impacts. Provide frequent activity updates of all construction activities.

A combination of techniques with equipment noise control and administrative measures can be selected to provide the most effective means to minimize effects of the construction activity impacts. Application of these measures would reduce construction-related noise impacts; however, a temporary increase in noise and vibration may still occur.

Natural Communities - Vernal Pool Communities
The following Caltrans policies would be implemented prior to and during construction:

- Work will be conducted outside the rainy season when flows are absent or low.
- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.
- Any portions of Northern Claypan Vernal Pools or other sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be identified on the Construction Plans and included in the Plans, Specifications, and Estimates section of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.

- A qualified biologist would be present during initial ground disturbance, including clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals), would be restricted to the designated construction staging areas.
- Best Management Practices (BMPs) were included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.
    - Installation of measures to ensure that water quality is protected, both during and after construction.
    - Installation of measures to prevent long-term erosion occurring after construction is complete.
- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

Proposed Compensatory Mitigation for Impacts to Vernal Pool Communities

- Caltrans would submit a request to the U.S. Army Corps of Engineers for a Jurisdictional Determination. All wetlands determined to be jurisdictional by the U.S. Army Corps of Engineers would be mitigated for by Caltrans pursuant to the Clean Water Act.
- Caltrans would coordinate with the California Department of Fish and Wildlife to develop a compensatory mitigation plan consistent with the U.S. Army Corps of Engineers and the Environmental Protection Agency's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 Code of Federal Regulations Parts 325 and 332 and 40 Code of Federal Regulations Part 230).

- Caltrans would apply appropriate compensatory ratios for the loss of habitat determined during coordination and consultation with U.S. Fish and Wildlife Service and in cooperation with the California Department of Fish and Wildlife. Based on formal consultation with the U.S. Fish and Wildlife Service, Caltrans plans to mitigate for permanent impacts at a 5:1 compensation ratio, indirect impacts will be compensated at a 1.75:1 ratio, and temporary impacts with be compensated for at a 1.1:1 ratio.

- Caltrans' preferred method of compensation for impacts would be to purchase credits at a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved mitigation bank, if one is available within the project service area prior to the start of construction. However, if a bank is not available with the project service area, then permittee-responsible mitigation would be completed.

Wetlands and Other Waters

Best management practices would be included so the smallest practical footprint would be in place to minimize temporary, indirect, and permanent impacts to waters of the U.S.

If the waters within the project area are determined to be jurisdictional, Caltrans would obtain permits from the U.S. Army Corps of Engineers (404 Individual Permit), California Regional Water Quality Control Board (401 Certification) and California Department of Fish and Wildlife (Streambed Alteration Agreement). These permits would identify measures to address impacts to all jurisdictional waters. All proposed permits are listed in Section 1.7 "Permits and Approvals Needed" in this report.

The following Caltrans policies would be implemented to avoid and minimize potential impacts from construction:

- Work will be conducted outside the rainy season when flows are absent or low.

- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.

- Any portions of Northern Claypan Vernal Pools or other sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be identified on the Construction Plans and included in the Plans, Specifications, and Estimates section

of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.

- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.
- A qualified biologist would be present during initial ground disturbance, including clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals), would be restricted to the designated construction staging areas.
- Best Management Practices (BMPs) were included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.
    - Installation of measures to ensure that water quality is protected, both during and after construction.
    - Installation of measures to prevent long-term erosion occurring after construction is complete.
- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

Proposed Compensatory Mitigation for Impacts to Wetlands and Other Waters of the U.S.

- Caltrans would submit a request to the U.S. Army Corps of Engineers for a Jurisdictional Determination. All wetlands determined to be jurisdictional by the U.S. Army Corps of Engineers would be mitigated for by Caltrans pursuant to the Clean Water Act.

- Caltrans would coordinate with the California Department of Fish and Wildlife to develop a compensatory mitigation plan consistent with the U.S. Army Corps of Engineers and the Environmental Protection Agency's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 Code of Federal Regulations Parts 325 and 332 and 40 Code of Federal Regulations Part 230).

- Caltrans would apply appropriate compensatory ratios for the loss of habitat determined during coordination and consultation with U.S. Fish and Wildlife Service and in cooperation with the California Department of Fish and Wildlife. Based on formal consultation with the U.S. Fish and Wildlife Service, Caltrans plans to mitigate for permanent impacts at a 5:1 compensation ratio, indirect impacts will be compensated at a 1.75:1 ratio, and temporary impacts with be compensated for at a 1.1:1 ratio.

- Caltrans' preferred method of compensation for impacts would be to purchase credits at a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved mitigation bank, if one is available within the project service area prior to the start of construction. However, if a bank is not available with the project service area, then permittee-responsible mitigation would be completed.

Plant Species

Spiny-sepaled button celery was identified within the project impact area. Potentially suitable habitat for Sanford's arrowhead and brassy bryum were also identified in the project impact area. The following measures would be implemented to ensure that no effects occur to these special-status species:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans right-of-way once Caltrans biologists can access all properties within the Action Area. If these species are observed, they would be avoided and protected with an Environmentally Sensitive Area if possible. If avoidance is not possible, additional impact minimization measures may be implemented, which could include the collection and

stockpiling of the top 4-6 inches of soil for re-application once construction is complete, with the goal of preserving this species spores within the soil.

- Work will be conducted outside the rainy season when flows are absent or low.
- A Stormwater Pollution Prevention Plan will be prepared specifically for this project.
- Any portions of sensitive resources that will not be permanently impacted by the project and can be avoided during construction will be protected from unnecessary impacts with an established Environmentally Sensitive Area (ESA) demarcation, unless specifically determined to be unfeasible. All Environmentally Sensitive Areas will be identified on the Construction Plans and included in the Plans, Specifications, and Estimates section of the construction contract. The Environmentally Sensitive Areas will be fenced with brightly colored dual-purpose fencing prior to the start of construction, with a qualified biologist on-site to oversee its installation. In addition, the qualified biologist will make weekly site visits to ensure the fencing is maintained throughout the duration of construction.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any ground-breaking activities to review the specific avoidance and minimization measures in place to eliminate unnecessary impacts to vernal pools and other sensitive resources.
- A qualified biologist would be present during initial ground disturbance, including during clearing and grubbing.
- The stockpiling of materials, equipment (including portable equipment), vehicles and supplies (e.g., chemicals), would be restricted to the designated construction staging areas.
- Best Management Practices (BMPs) were included in the project design, and they will include at least the following:
    - Installation of measures to temporarily control erosion during construction.
    - An Emergency Spill Prevention Plan will be prepared that includes measures to minimize the risk of fluids or other materials (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering vernal pools, waterways, or sensitive uplands.

  - Installation of measures to ensure that water quality is protected, both during and after construction.
  - Installation of measures to prevent long-term erosion occurring after construction is complete.

- Any temporary impacts to Northern Claypan Vernal Pools or other sensitive resources that are not treated as permanent impacts and thus mitigated for in-kind will be entirely restored to pre-project conditions.
- Once construction is complete, all areas disturbed by the project will be re-seeded with a native species seed mix.

Animal Species

In addition to the measures in place for wetlands and other waters of the U.S., the following are Standard Special Provisions that will ensure that impacts to species are avoided:

Burrowing Owl

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit this species.

Pallid Bat and Western Mastiff Bat

- A qualified biologist shall conduct visual and acoustic bat surveys to determine if bats are currently using the Action Area and to determine if additional avoidance and minimization measures are needed. Additional avoidance and minimization measures may include but are not limited to the installation of bat exclusion measures in areas used for roosting. Any exclusion measures would be implemented in coordination with the California Department of Fish and Wildlife.

No compensatory mitigation is proposed; however, if feasible, roosting habitat may be included in the structure that will be constructed over the Lateral 6.2 canal. In addition, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit these species. In addition, due to requirements for the reduction of greenhouse gases, all trees removed to construct the project must be mitigated. Though the locations and replacement species have not been determined at this time, this too is expected to benefit these species by replacing habitat.

Western Spadefoot Toad

- Pre-construction surveys for this species would occur during the breeding season prior to construction, at the time when spadefoots are observed emerging in nearby areas of suitable habitat. Any spadefoots

observed in the project footprint may be relocated to areas of suitable habitat beyond the project footprint, to minimize impacts to any on-site individuals. Any relocation efforts would be conducted in coordination with the California Department of Fish and Wildlife.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to California tiger salamander habitat will also benefit this species.

American Badger

- Prior to construction, surveys would be completed in areas of potentially suitable habitat to confirm that no badgers are using the Action Area for denning. If any dens that resemble those of the badger are observed, Caltrans would coordinate additional avoidance and minimization measures with the California Department of Fish and Wildlife.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit this species.

Northern Harrier

- Preconstruction migratory nesting bird surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.

- If any nesting pairs of northern harriers are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds. Measures may include but are not limited to:

    - The establishment of a protective Environmentally Sensitive Area (ESA) and a 500-foot “no-walk” buffer.

    - A biological monitor would be present during construction activities that occur in close proximity to the nest.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit this species.

Loggerhead Shrike

- Preconstruction migratory nesting bird surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.

- If any nesting pairs of loggerhead shrike are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds. Measures may include but are not limited to:

- The establishment of a protective Environmentally Sensitive Area (ESA) and a 500-foot “no-walk” buffer.
- A biological monitor would be present during construction activities that occur in close proximity to the nest.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit this species.

Migratory Birds

- Clearing and grubbing will be completed outside of the nesting season, unless otherwise deemed unfeasible, to avoid unnecessary impacts to migratory birds.
- A qualified biologist would conduct preconstruction surveys for migratory birds should construction begin within the nesting season (February 1 through September 30), or prior to any clearing and grubbing during the nesting season.
- A mandatory Worker Environmental Awareness Training (WEAT) will be provided for all construction personnel prior to the start of any clearing, grubbing, or ground-breaking activities to review the importance of avoiding impacts to nesting migratory birds observed on the project.
- Any nests discovered during the migratory bird clearance surveys will be Environmentally Sensitive Area (ESA) protected, with an appropriate “no-work” buffer, to protect young birds until they are able to fledge from their nest.

Proposed Compensatory Mitigation for Impacts to Animal Species

No compensatory mitigation is required.

Threatened and Endangered Species

A Biological Assessment was prepared, and Section 7 formal consultation was initiated with the U.S. Fish and Wildlife Service in December 2018 for potential effects to federally listed species. The Biological Opinion was issued by the U.S. Fish and Wildlife Service on August 29, 2019 and is included in this final document (see Appendix J). Caltrans began coordination with the California Department of Fish and Wildlife in November 2014 about the potential for take of state listed species (see Appendix G) and will enter coordination with them again when Caltrans obtains an Incidental Take Permit (ITP) for the project.

Animal Species

California Tiger Salamander

The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the California tiger salamander, along with the following:

- The dual-purpose Environmentally Sensitive Area fencing to be installed will also serve to exclude California tiger salamanders and shall be additionally applied to off-site areas adjacent to the project footprint that contain suitable upland grassland habitat or aquatic features that may be used by this species.

- Prior to construction and after the installation of the Environmentally Sensitive Area fencing, potentially suitable burrows will be hand-excavated by a U.S. Fish and Wildlife Service- and California Department of Fish and Wildlife-approved biologist. Any California tiger salamanders that are discovered will be relocated to a suitable upland burrow outside of the project footprint, based on prior coordination and approval from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.

- If a 70% or greater chance of rainfall is predicted within 24 hours of a project activity, a qualified biologist shall survey the project site, for the presence of migrating California tiger salamanders, prior to the start of construction each day that rain is forecasted.

- No project work that could impact migrating California tiger salamanders shall occur during or within 48 hours following significant rain events, defined as ¼-inch or more of rain in a 24-hour period.

- For work conducted during the California tiger salamander migration season (November 1–May 31) a qualified biologist will survey active work areas (including access roads) in the morning, following measurable precipitation that measures less than ¼-inch. Construction may not begin until a biologist has confirmed that no California tiger salamanders are in the work area.

- Basins and/or trenches greater than 6 inches deep will be required to be covered or have an escape ramp present. These will be checked daily for trapped California tiger salamanders and other wildlife. Before the basins and/or trenches are filled in, they will be inspected thoroughly for trapped wildlife.

- Any pipes or culverts stored on-site must be capped to prevent entry by a California tiger salamander. Pipes must be inspected before installation to ensure that California tiger salamanders have not taken

cover inside. If any California tiger salamanders are found in pipes or culverts, the assigned Caltrans biologist will be notified.

- Vehicle travel will be limited to established roadways unless otherwise designated. Any travel beyond the paved highway shall adhere to a 20-mile-per-hour daytime speed limit and 10-mile-per-hour nighttime speed limit.

Proposed Compensatory Mitigation for Impacts to California Tiger Salamander:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase, Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, temporary impacts will be compensated for at a 1.1:1 ratio and impacts to temporary aquatic habitat will be compensated for at a 0.5:1 ratio.

Vernal Pool Fairy Shrimp
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the vernal pool fairy shrimp.

Proposed Mitigation Measures for Impacts to Vernal Pool Fairy Shrimp:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase, Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.

- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, and temporary impacts will be compensated for at a 1.1:1 ratio.

San Joaquin Kit Fox
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the San Joaquin kit fox, as well as the following:

- Pre-construction surveys would be completed no more than 30 days prior to the start of construction to ensure no San Joaquin kit foxes are in or adjacent to the project area.
- If any San Joaquin kit foxes are observed during the course of project activities, they would be allowed to leave the area unharmed and on their own volition and Caltrans would notify the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine additional measures to protect the species.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grasslands, vernal pools, wetlands, and other waters will also benefit this species.

Swainson's Hawk
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the Swainson's hawk, as well as the following:

- Pre-construction Swainson's hawk surveys will be conducted to ensure no birds are nesting in or adjacent to the project footprint.
- If any nesting pairs are discovered, additional avoidance and minimization measures would be implemented to avoid impacting birds. Measures may include but are not limited to: the establishment of a protective Environmentally Sensitive Area and a 500-foot "no-work" buffer and having a biological monitor present during construction activities that occur in close proximity to the nest.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to species that occur in non-native grassland habitat will also benefit this species. In addition, due to requirements for the reduction of greenhouse gases, all trees removed to construct the project must be mitigated. Though the locations and replacement species have not been determined at this time, this too is expected to benefit this species by replacing habitat.

Tricolored Blackbird
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the tricolored blackbird.

No compensatory mitigation is proposed. However, the mitigation that will be completed to compensate for impacts to non-native grasslands, vernal pools, and wetlands will also benefit this species.

Crotch Bumble Bee
The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for the Crotch bumble bee, as well as the following:

- Preconstruction surveys will be completed by qualified biologists to determine if Crotch bumble bees occur on the project site. If any individual Crotch bumble bees are observed during the survey, then a more extensive survey(s) would be conducted to determine if the species is nesting within the Action Area.

- A 50-foot "no-work" buffer would be established to protect any known nests that can be avoided during construction of the project. If any nests are discovered that cannot be avoided, coordination with the California Department of Fish and Wildlife may be necessary.

Proposed Mitigation Measures for Impacts to Crotch Bumble Bee:

- No compensatory mitigation is proposed. However, based on the results of the preconstruction survey and the listing status of the Crotch bumble bee prior to construction, Caltrans may need to coordinate with the California Department of Fish and Wildlife to obtain a 2081 Incidental Take Permit, which could include the need for compensatory mitigation, though the mitigation that will be completed to compensate for impacts to upland habitat for the California tiger salamander would likely also benefit this species.

Plant Species
Hartweg's Golden Sunburst, Hairy Orcutt Grass, San Joaquin Valley Orcutt Grass, Succulent Owl's Clover
Though none of these plant species was found during the 2015 surveys, San Joaquin Valley orcutt grass was incidentally observed in the Action Area in 2016. The existing environment within the Action Area suggests there is potential for the Hartweg's golden sunburst, hairy orcutt grass, and succulent owl's clover to occur. The same avoidance and minimization measures listed under Section 2.3.2 for Wetlands and Other Waters will be implemented to further avoid and minimize impacts to potential habitat for these species, as well as the following:

- Pre-construction botanical surveys, following the 2018 California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, will be completed throughout the new Caltrans right-of-way once Caltrans biologists can access all properties within the Action Area.

- If any of these species are observed, it would be avoided and protected with an Environmentally Sensitive Area, if possible. In cases where avoidance is not possible, Caltrans would initiate formal consultation with the U.S. Fish and Wildlife Service and obtain an Incidental Take Permit from the California Department of Fish and Wildlife to address any adverse effects to the species and propose additional forms of impact minimization efforts, which may include, but would not be limited to the following:
    - The collection and stockpiling of the top 4-6 inches of soil (during construction) and re-application in areas of suitable habitat (once construction is complete) with the goal of preserving this species seeds in the on-site soils.
    - Transplanting individual plants to a suitable location outside of the project impact area.
    - Seed collection.

Proposed Mitigation Measures for Impacts to Joaquin Valley Orcutt Grass and Hairy Orcutt Grass:

- Mitigation for Phases 1 and 2 of the project will be accomplished independently and prior to the start of construction. Likewise, prior to construction of each phase, Caltrans will verify the area of impacts that will result from the project, with consideration of the approved developments planned in close proximity, to confirm the amount of compensatory mitigation that will be sufficient.
- All permanent impacts will be compensated for at a 3:1 ratio, indirect impacts will be compensated for at a 1.75:1 ratio, and temporary impacts will be compensated for at a 1.1:1 ratio. Tables 2.33 and 2.34 outline the permanent, indirect, and temporary impact areas, compensation ratios, and mitigation areas that will be used to compensate for impacts to these species for Phases 1 and 2 of the project.

California Jewelflower
If this species is found on-site and cannot be entirely avoided, Caltrans would coordinate with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to determine additional minimization and/or mitigation measures.

<u>Invasive Species</u>

No mitigation measures are required to mitigate impacts to invasive species. The following policies would be implemented to ensure that the spread of invasive species will not occur:

- All areas disturbed by project construction will be re-seeded with native species suitable for the project location.
- A non-standard special provision will be included in the construction contract that requires construction equipment and vehicles be cleaned prior to entering and exiting the project.

Additional specifications to prevent the spread of, or eradicate, invasive species may be included in the construction contract.

Appendix F U.S. Fish and Wildlife Service Species List

U.S. Fish and Wildlife Service Query for Species List, Page 1 of 8

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: September 18, 2019
Consultation Code: 08ESMF00-2016-SLI-0365
Event Code: 08ESMF00-2019-E-09842
Project Name: Madera 41 South Expressway

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.

U.S. Fish and Wildlife Service Query for Species List, Page 2 of 8

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.

U.S. Fish and Wildlife Service Query for Species List, Page 3 of 8

Attachment(s):

- Official Species List

U.S. Fish and Wildlife Service Query for Species List, Page 4 of 8

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

U.S. Fish and Wildlife Service Query for Species List, Page 5 of 8

Project Summary

Consultation Code: 08ESMF00-2016-SLI-0365

Event Code: 08ESMF00-2019-E-09842

Project Name: Madera 41 South Expressway

Project Type: TRANSPORTATION

Project Description: The project proposes to construct a four-lane divided expressway with controlled access between post-miles 1.5 and 7.6 in Madera County, California. The project will be constructed in two phases and when complete, the four-lane expressway will extend from the existing terminus of the four-lane freeway from the Fresno metropolitan area to north of Avenue 15.
The four-lane expressway will follow the same footprint previously identified as Alternative 4 in the December 2016 Draft Environmental Impact Report/Environmental Assessment and Section 4(f) Evaluation.

Project Location:
Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.946719404888675N119.79457787650108W

Counties: Madera, CA

U.S. Fish and Wildlife Service Query for Species List, Page 6 of 8

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

NAME	STATUS
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* 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 *Vulpes macrotis mutica* 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 *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

U.S. Fish and Wildlife Service Query for Species List, Page 7 of 8

Amphibians

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

Fishes

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

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* 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 *Branchinecta lynchi* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
Hairy Orcutt Grass *Orcuttia pilosa* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2262	Endangered
San Joaquin Orcutt Grass *Orcuttia inaequalis* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5506	Threatened

U.S. Fish and Wildlife Service Query for Species List, Page 8 of 8

Critical habitats

There are 5 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* https://ecos.fws.gov/ecp/species/2076#crithab	Final
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* https://ecos.fws.gov/ecp/species/8095#crithab	Final
Hairy Orcutt Grass *Orcuttia pilosa* https://ecos.fws.gov/ecp/species/2262#crithab	Final
San Joaquin Orcutt Grass *Orcuttia inaequalis* https://ecos.fws.gov/ecp/species/5506#crithab	Final
Vernal Pool Fairy Shrimp *Branchinecta lynchi* https://ecos.fws.gov/ecp/species/498#crithab	Final

Appendix G California Natural Diversity Database Species List

California Natural Diversity Database Summary Table, Page 1 of 3

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Daulton (3711918) OR Little Table Mtn. (3711917) OR Lanes Bridge (3611987) OR Millerton Lake West (3711916) OR Gregg (3611988) OR Friant (3611986) OR Herndon (3611978) OR Fresno North (3611977) OR Clovis (3611976))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calicina mesaensis Table Mountain harvestman	ILARAU8070	None	None	G1	S1	
Calycadenia hooveri Hoover's calycadenia	PDAST1P040	None	None	G2	S2	1B.3
Castilleja campestris var. succulenta succulent owl's-clover	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Cryptantha hooveri Hoover's cryptantha	PDBOR0A190	None	None	GH	SH	1A
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	

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California Natural Diversity Database Summary Table, Page 2 of 3

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

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys nitratoides exilis Fresno kangaroo rat	AMAFD03151	Endangered	Endangered	G3TH	SH	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Egretta thula snowy egret	ABNGA06030	None	None	G5	S4	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Euderma maculatum spotted bat	AMACC07010	None	None	G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Imperata brevifolia California satintail	PMPOA3D020	None	None	G4	S3	2B.1
Leptosiphon serrulatus Madera leptosiphon	PDPLM09130	None	None	G3	S3	1B.2
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lupinus citrinus var. citrinus orange lupine	PDFAB2B103	None	None	G2T2	S2	1B.2
Lytta moesta moestan blister beetle	IICOL4C020	None	None	G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G2	S1S2	
Mylopharodon conocephalus hardhead	AFCJB25010	None	None	G3	S3	SSC
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	

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California Natural Diversity Database Summary Table, Page 3 of 3

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

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Orcuttia inaequalis San Joaquin Valley Orcutt grass	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Orcuttia pilosa hairy Orcutt grass	PMPOA4G040	Endangered	Endangered	G1	S1	1B.1
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Pseudobahia bahiifolia Hartweg's golden sunburst	PDAST7P010	Endangered	Endangered	G2	S2	1B.1
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Sycamore Alluvial Woodland Sycamore Alluvial Woodland	CTT62100CA	None	None	G1	S1.1	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Tuctoria greenei Greene's tuctoria	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 55

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Appendix H California Native Plant Society Species List

California Native Plant Society Species List, Page 1 of 1

CNPS California Native Plant Society Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

18 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3711917, 3611987, 3711918, 3711916, 3611988, 3611978, 3611986 3611977 and 3611976;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Bryum chryseum	brassy bryum	Bryaceae	moss		4.3	S3	G5
Calycadenia hooveri	Hoover's calycadenia	Asteraceae	annual herb	Jul-Sep	1B.3	S2	G2
Castilleja campestris var. succulenta	succulent owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	(Mar)Apr-May	1B.2	S2S3	G4?T2T3
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	1B.1	S1	G1
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	Apr-May	1A	SH	GH
Delphinium hansenii ssp. ewanianum	Ewan's larkspur	Ranunculaceae	perennial herb	Mar-May	4.2	S3	G4T3
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.2	S2	G2
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	2B.1	S3	G4
Leptosiphon serrulatus	Madera leptosiphon	Polemoniaceae	annual herb	Apr-May	1B.2	S3	G3
Lupinus citrinus var. citrinus	orange lupine	Fabaceae	annual herb	Apr-Jul	1B.2	S2	G2T2
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	1B.1	S1	G1
Orcuttia pilosa	hairy Orcutt grass	Poaceae	annual herb	May-Sep	1B.1	S1	G1
Pseudobahia bahiifolia	Hartweg's golden sunburst	Asteraceae	annual herb	Mar-Apr	1B.1	S2	G2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	1B.1	S1	G1

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 18 September 2019].

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About the Rare Plant Program
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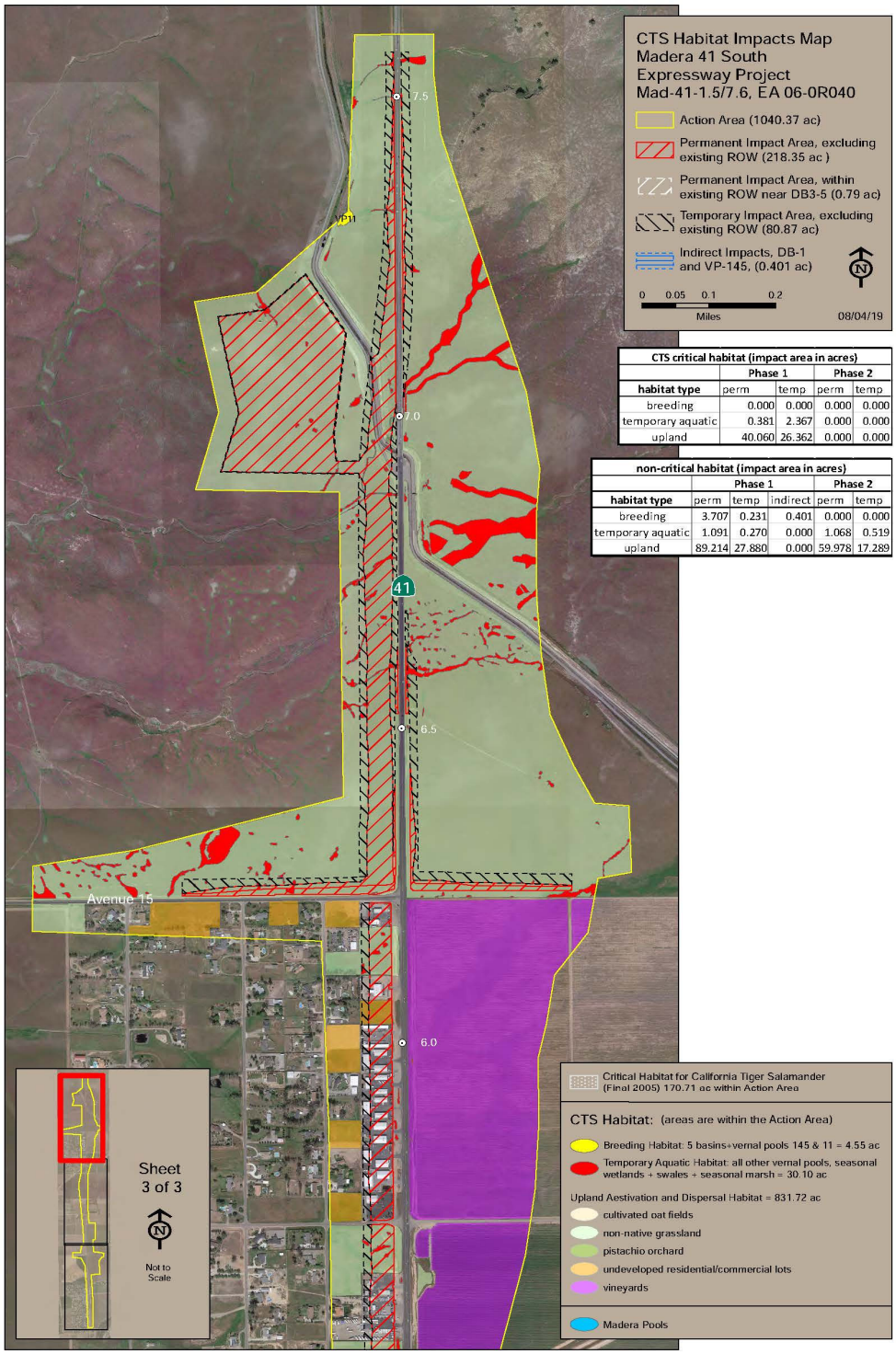
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

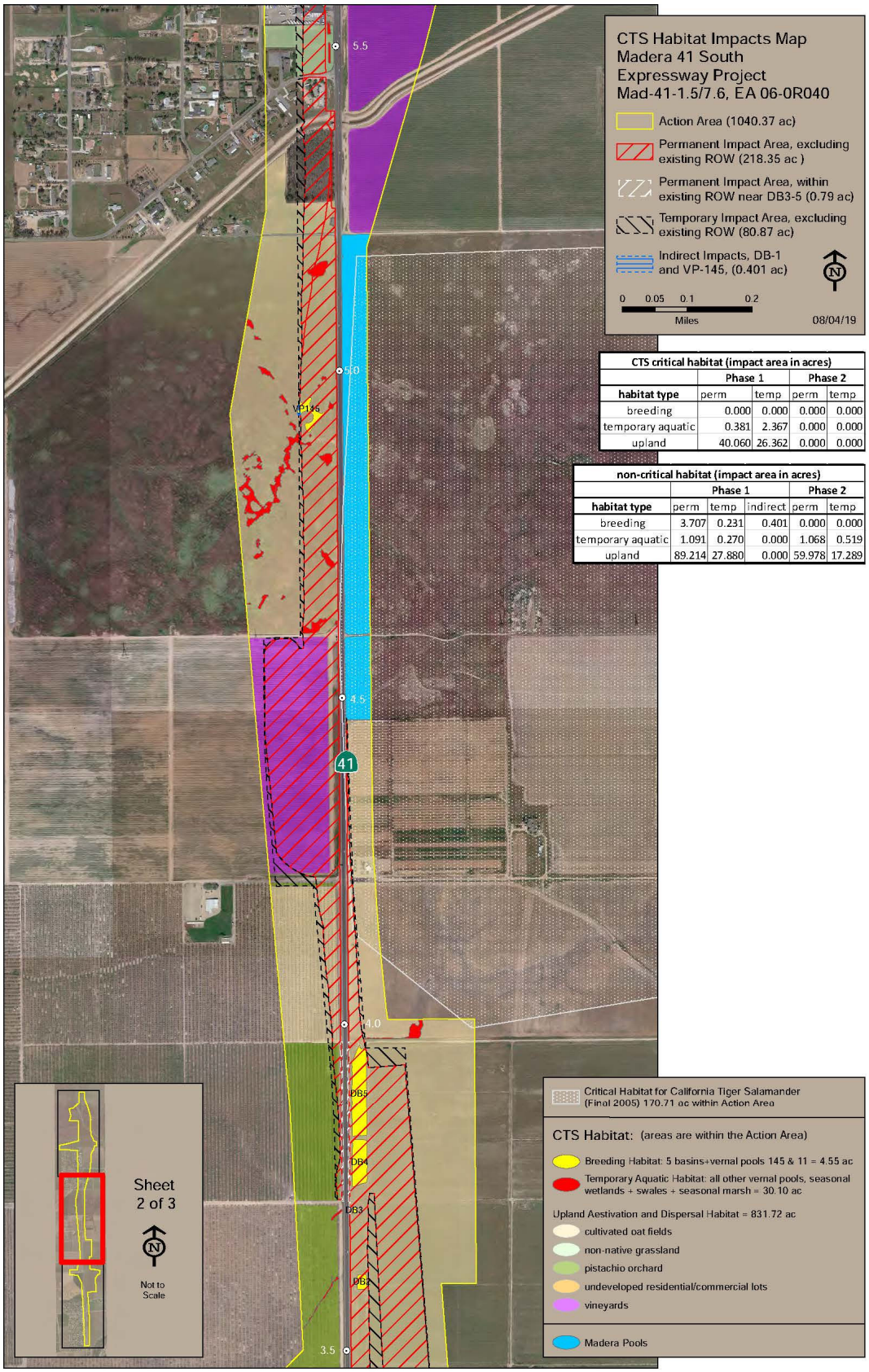
Appendix I Maps of Critical Habitat

California Tiger Salamander Habitat and Critical Habitat



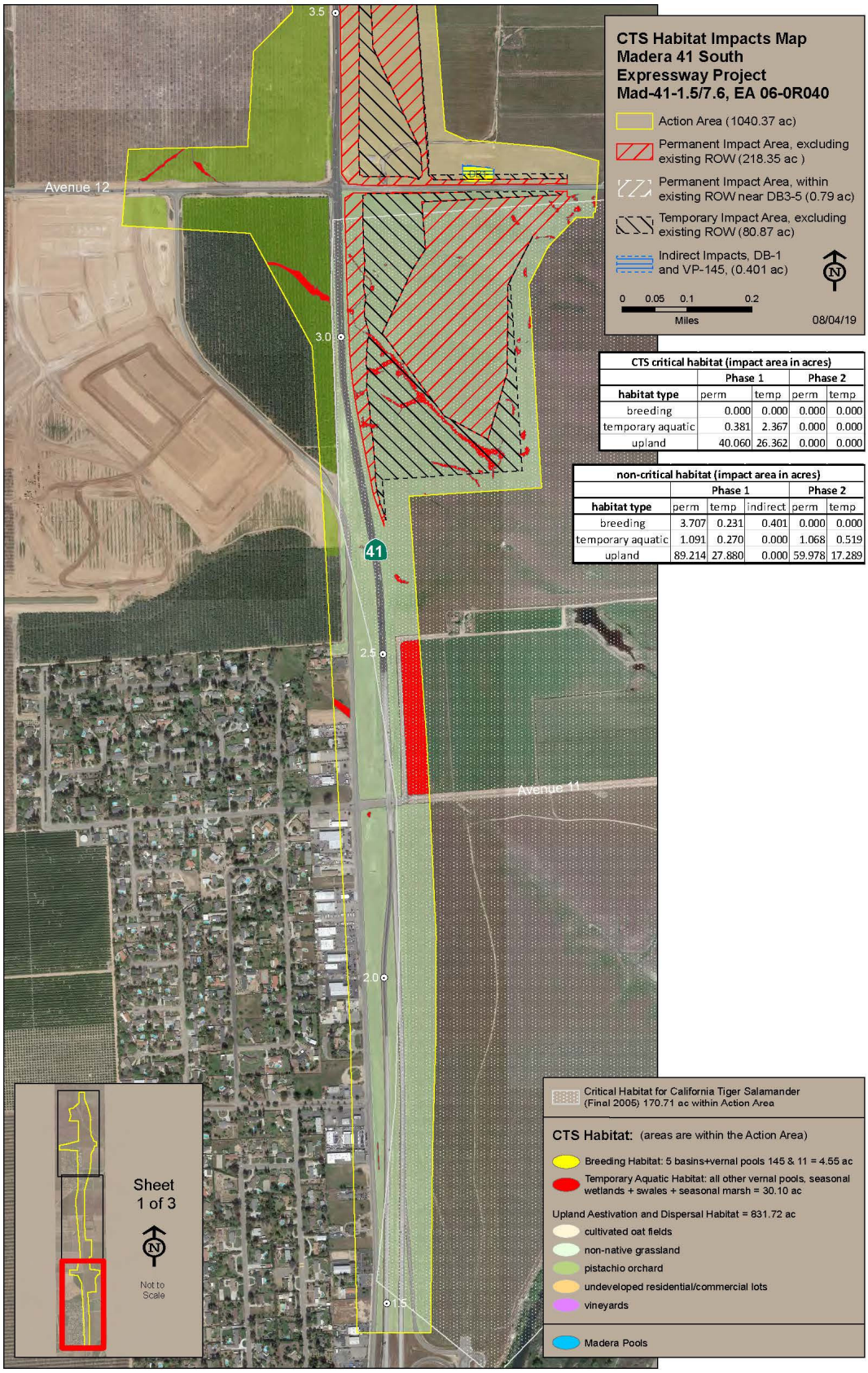
CTS critical habitat (impact area in acres)				
	Phase 1		Phase 2	
habitat type	perm	temp	perm	temp
breeding	0.000	0.000	0.000	0.000
temporary aquatic	0.381	2.367	0.000	0.000
upland	40.060	26.362	0.000	0.000

non-critical habitat (impact area in acres)					
	Phase 1			Phase 2	
habitat type	perm	temp	indirect	perm	temp
breeding	3.707	0.231	0.401	0.000	0.000
temporary aquatic	1.091	0.270	0.000	1.068	0.519
upland	89.214	27.880	0.000	59.978	17.289



CTS critical habitat (impact area in acres)				
	Phase 1		Phase 2	
habitat type	perm	temp	perm	temp
breeding	0.000	0.000	0.000	0.000
temporary aquatic	0.381	2.367	0.000	0.000
upland	40.060	26.362	0.000	0.000

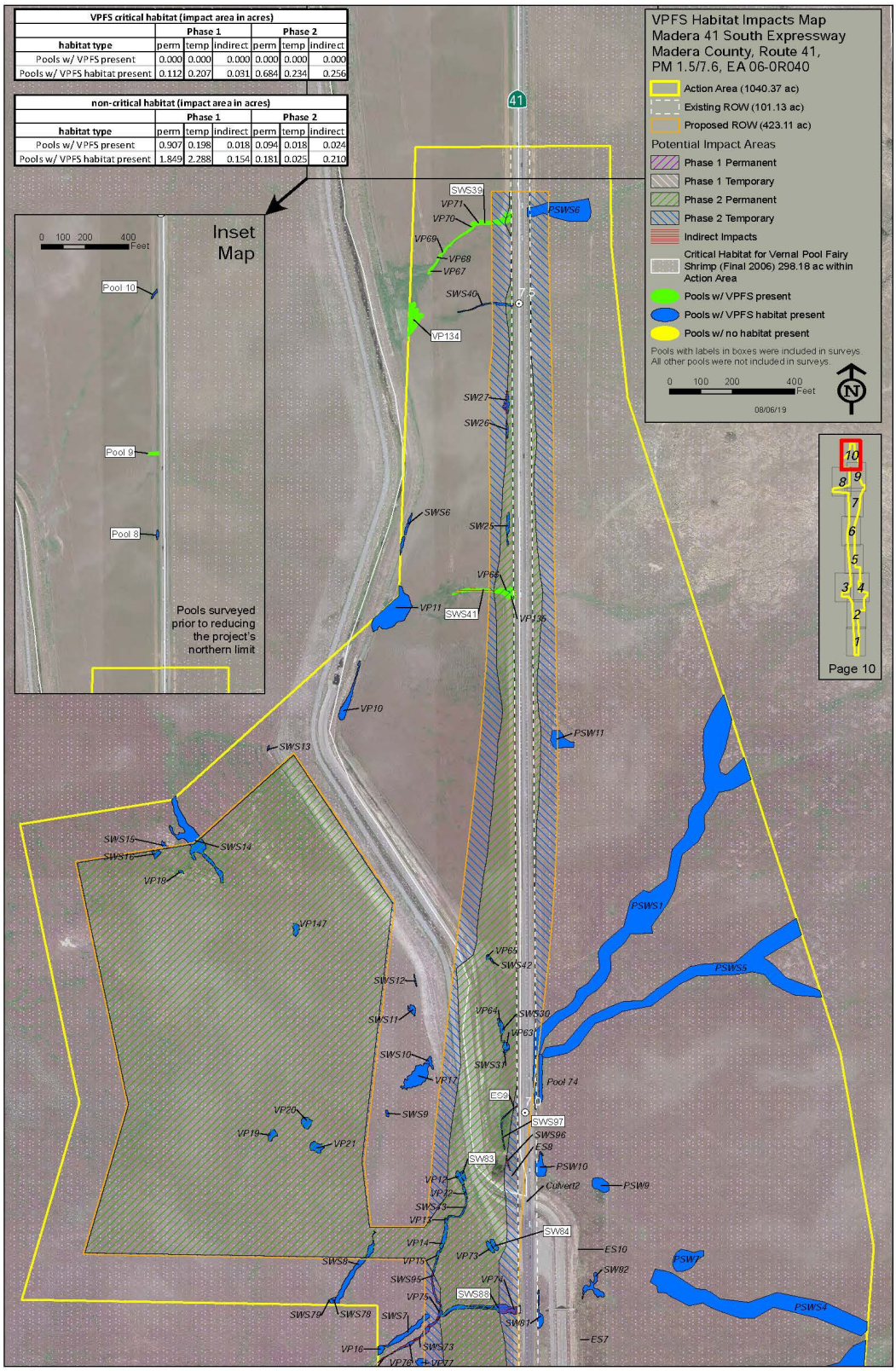
non-critical habitat (impact area in acres)					
	Phase 1			Phase 2	
habitat type	perm	temp	indirect	perm	temp
breeding	3.707	0.231	0.401	0.000	0.000
temporary aquatic	1.091	0.270	0.000	1.068	0.519
upland	89.214	27.880	0.000	59.978	17.289



CTS critical habitat (impact area in acres)				
	Phase 1		Phase 2	
habitat type	perm	temp	perm	temp
breeding	0.000	0.000	0.000	0.000
temporary aquatic	0.381	2.367	0.000	0.000
upland	40.060	26.362	0.000	0.000

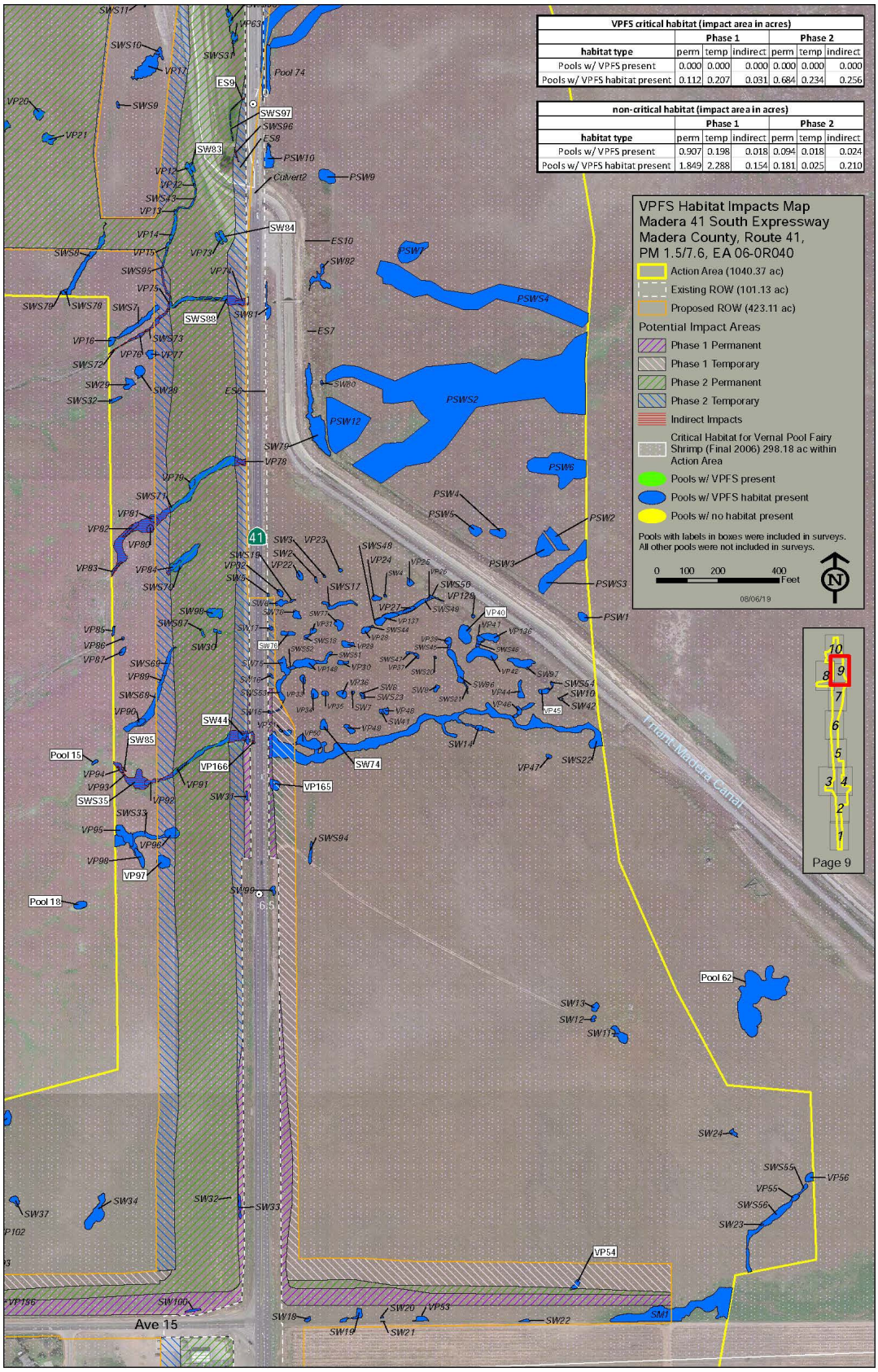
non-critical habitat (impact area in acres)					
	Phase 1			Phase 2	
habitat type	perm	temp	indirect	perm	temp
breeding	3.707	0.231	0.401	0.000	0.000
temporary aquatic	1.091	0.270	0.000	1.068	0.519
upland	89.214	27.880	0.000	59.978	17.289

Vernal Pool Fairy Shrimp and Critical Habitat Map



VPFS critical habitat (impact area in acres)						
	Phase 1			Phase 2		
habitat type	perm	temp	indirect	perm	temp	indirect
Pools w/ VPFS present	0.000	0.000	0.000	0.000	0.000	0.000
Pools w/ VPFS habitat present	0.112	0.207	0.031	0.684	0.234	0.256

non-critical habitat (impact area in acres)						
	Phase 1			Phase 2		
habitat type	perm	temp	indirect	perm	temp	indirect
Pools w/ VPFS present	0.907	0.198	0.018	0.094	0.018	0.024
Pools w/ VPFS habitat present	1.849	2.288	0.154	0.181	0.025	0.210



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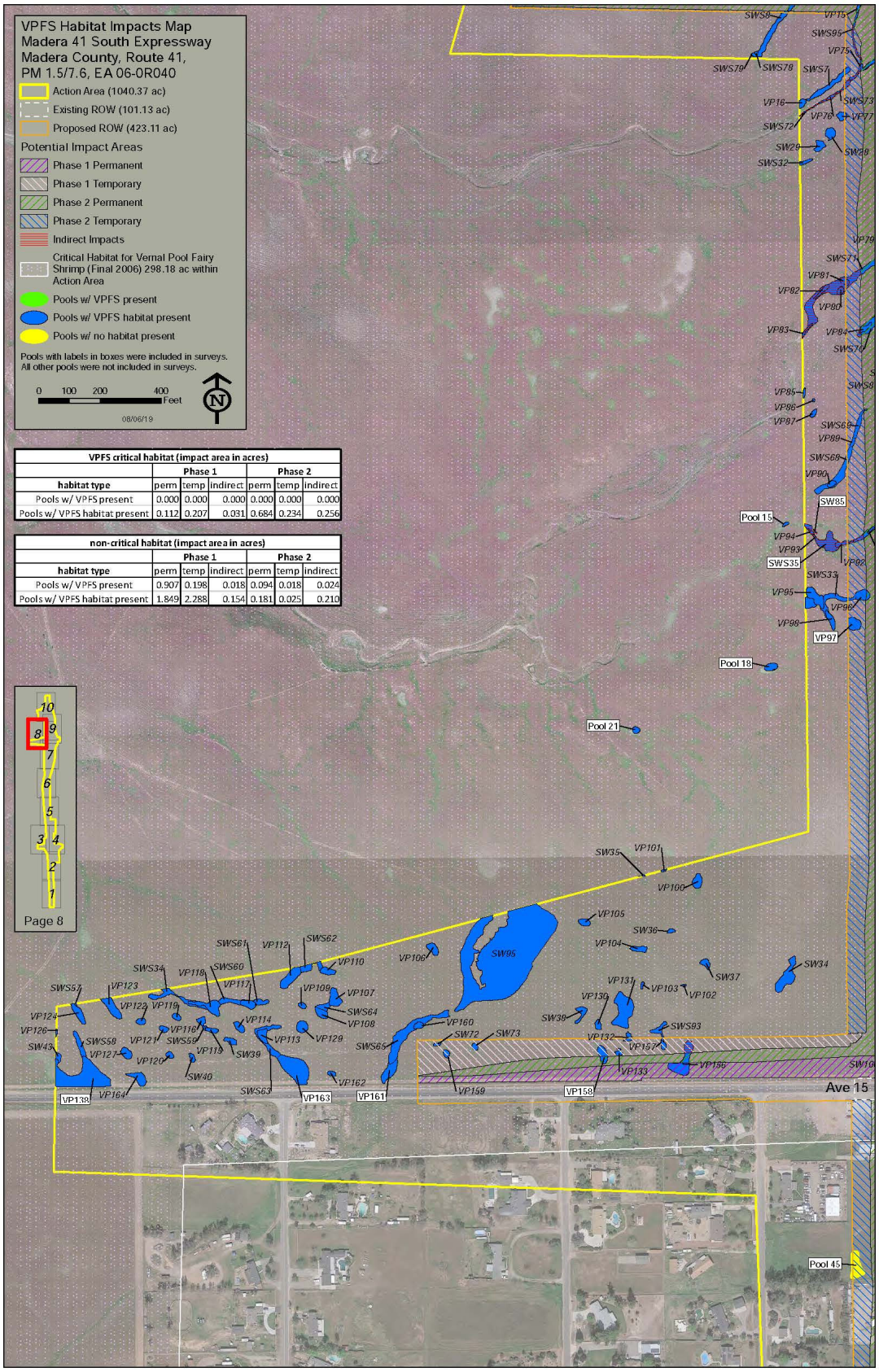

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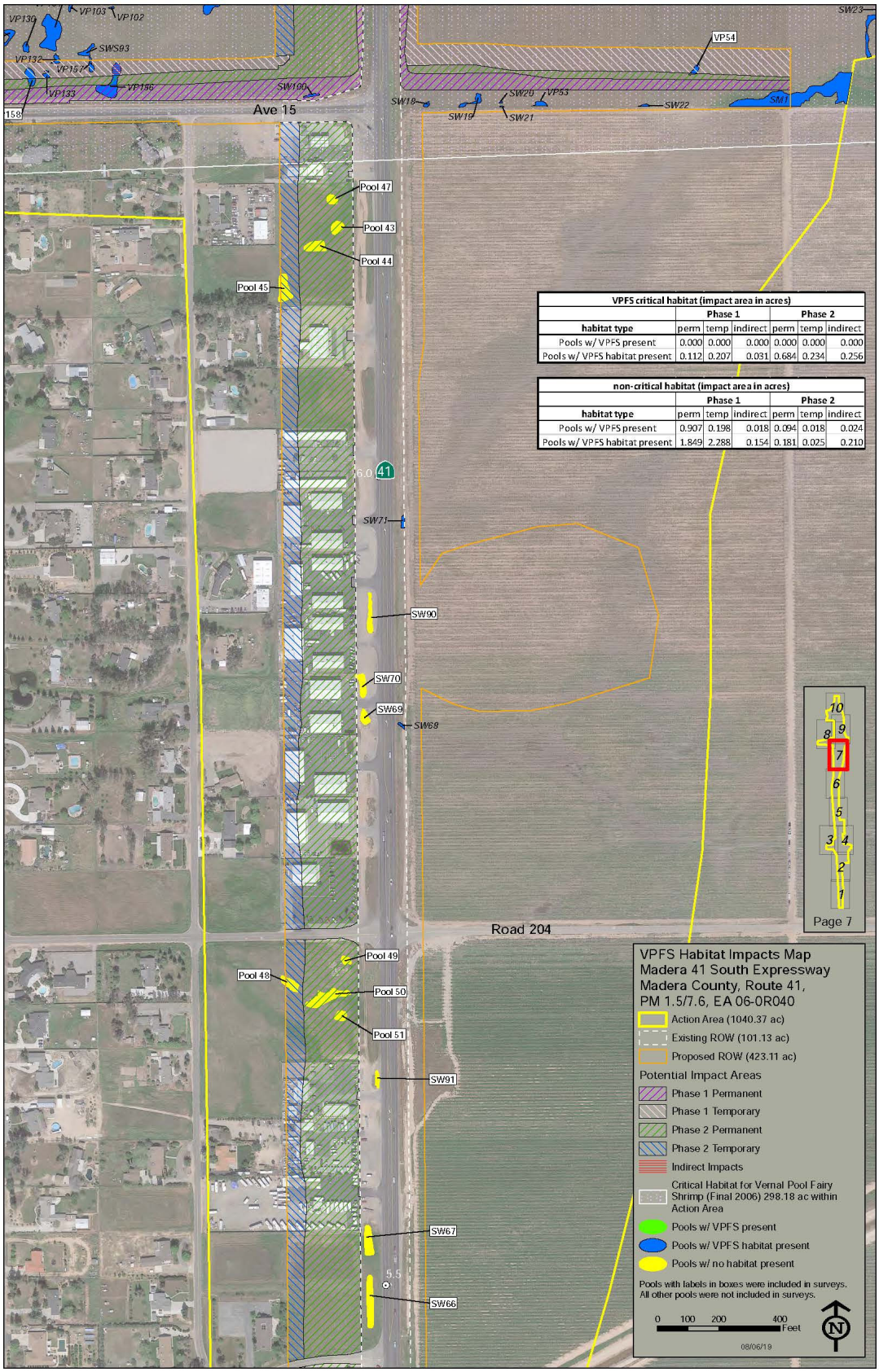

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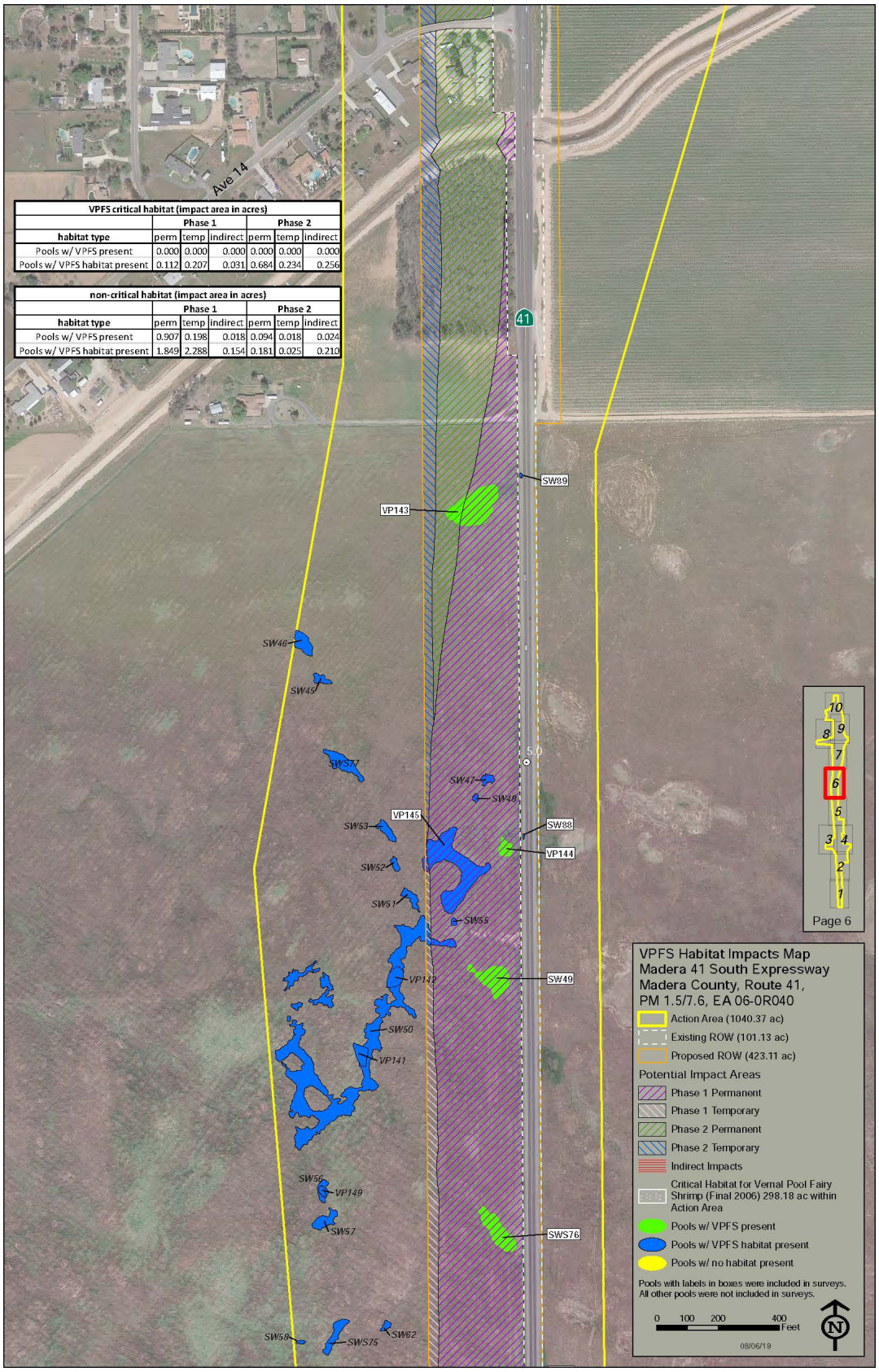

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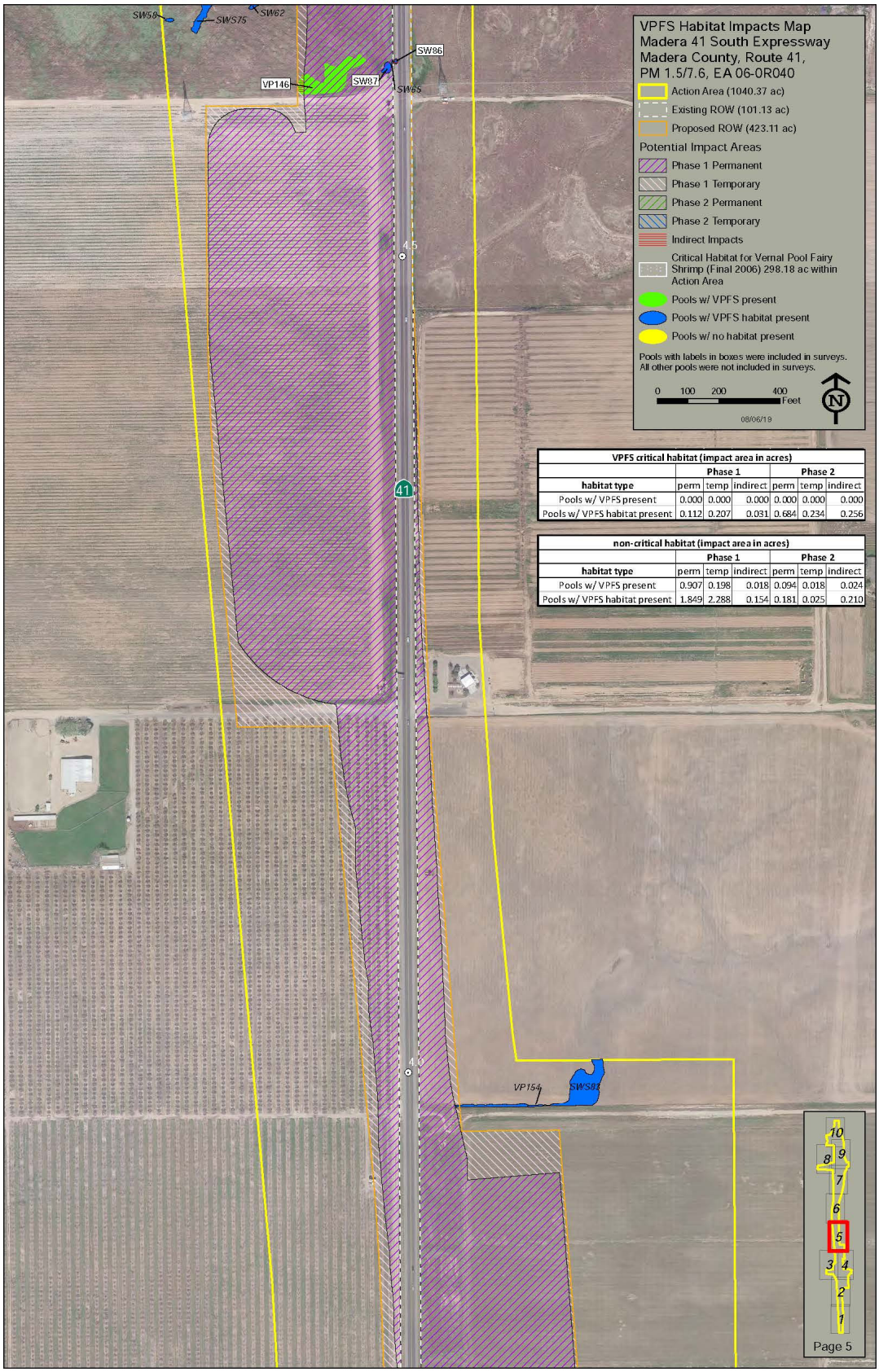

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	Phase 1			Phase 2		
habitat type	perm	temp	indirect	perm	temp	indirect
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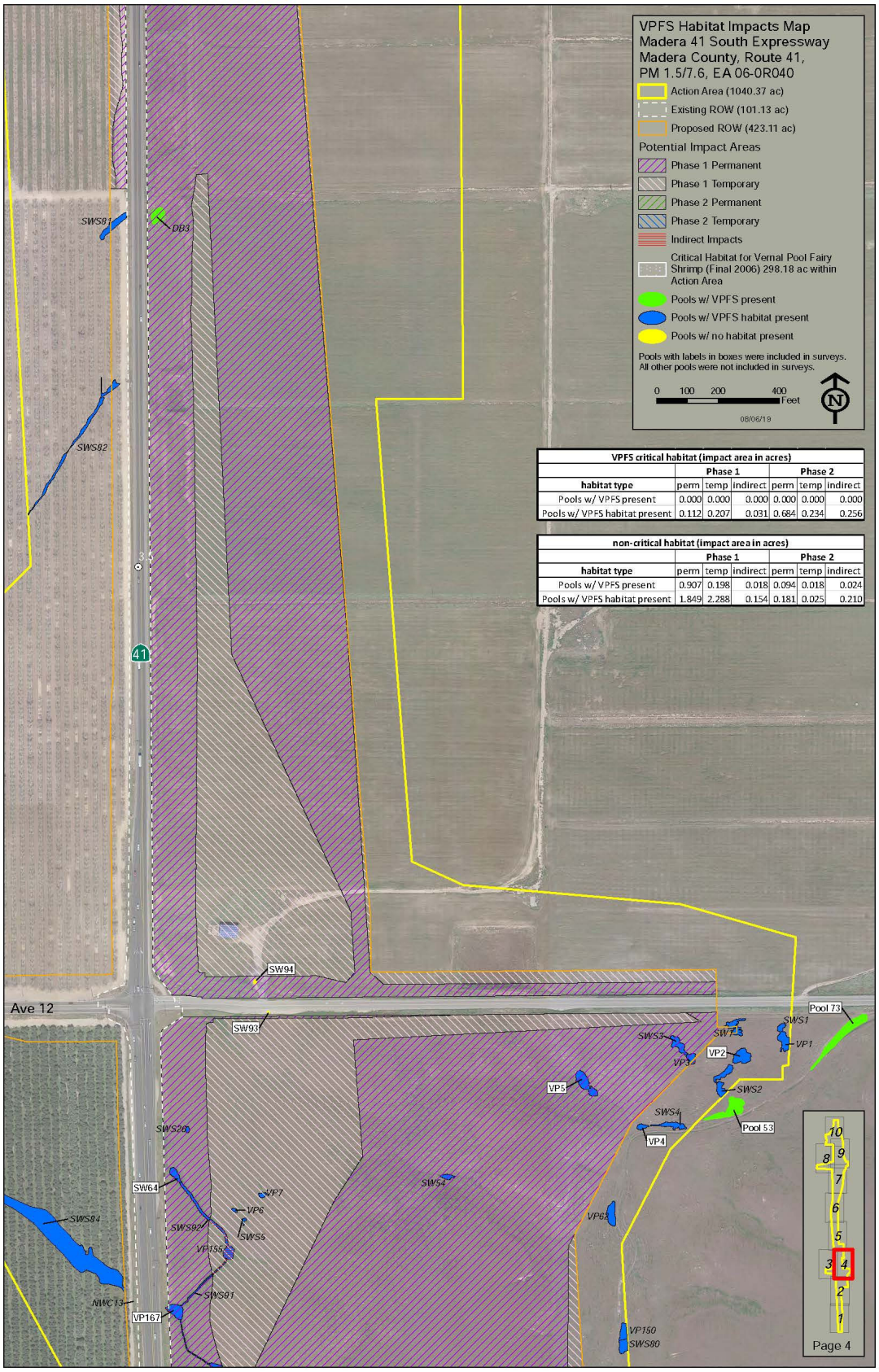

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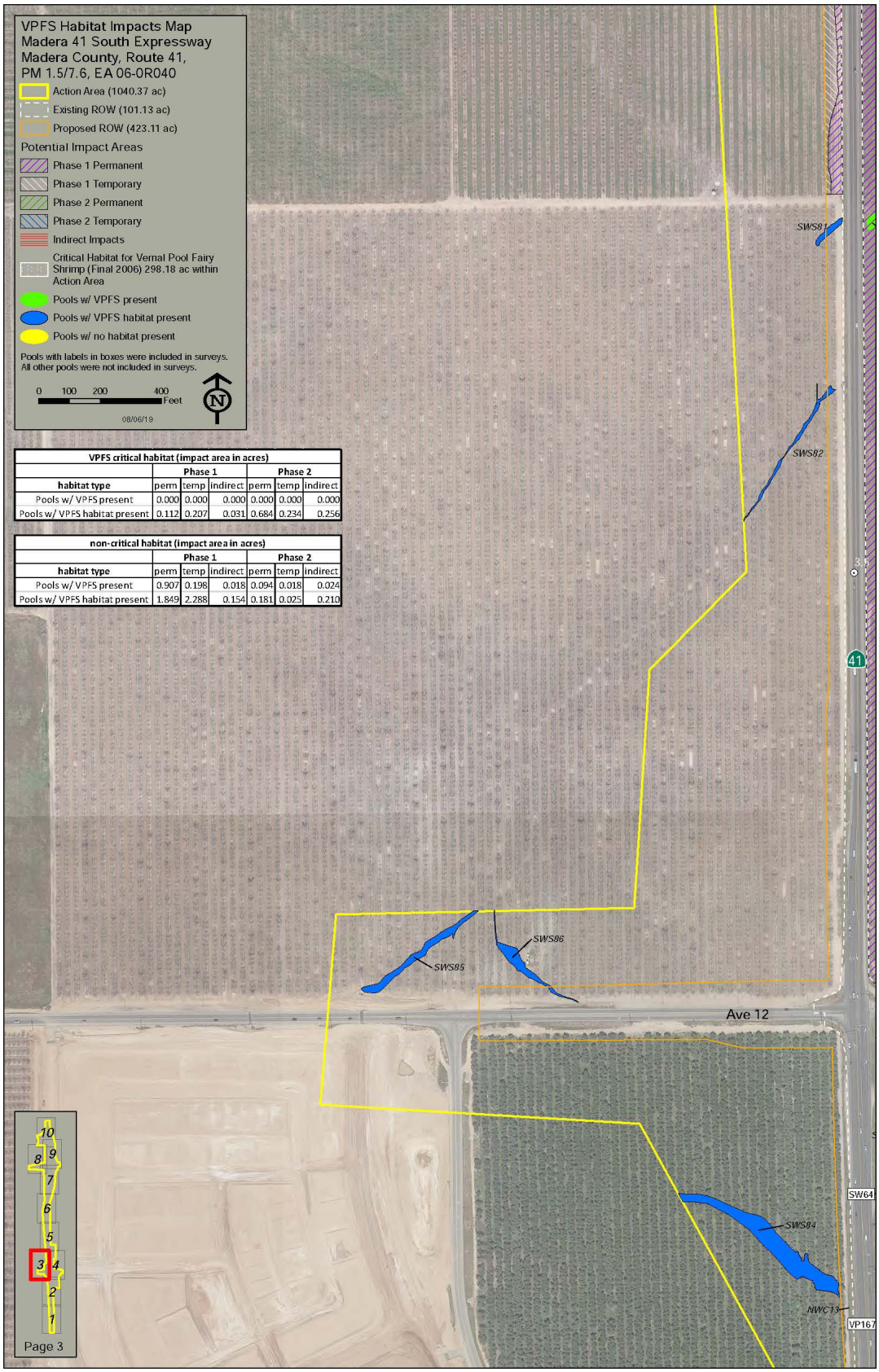

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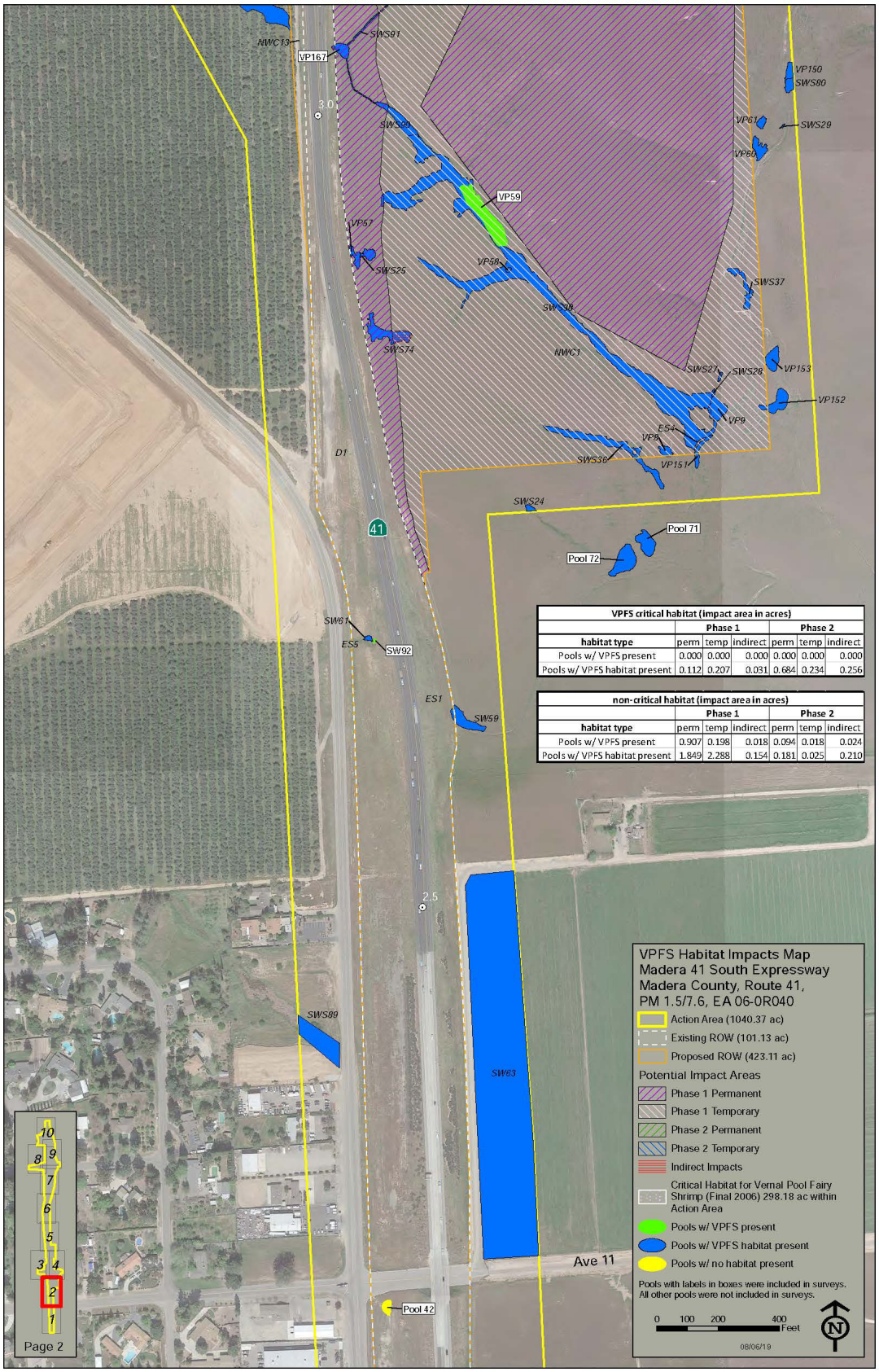

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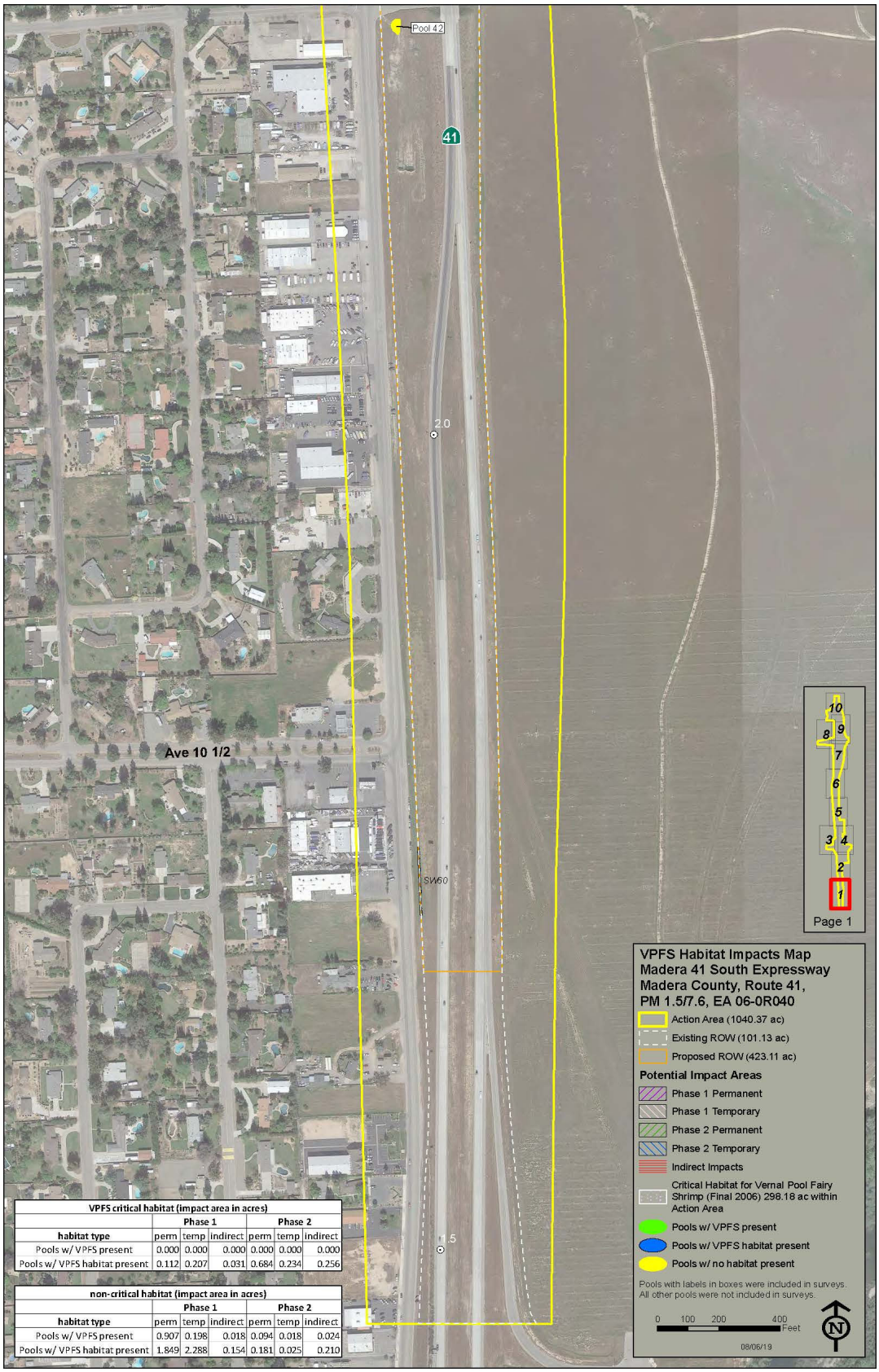

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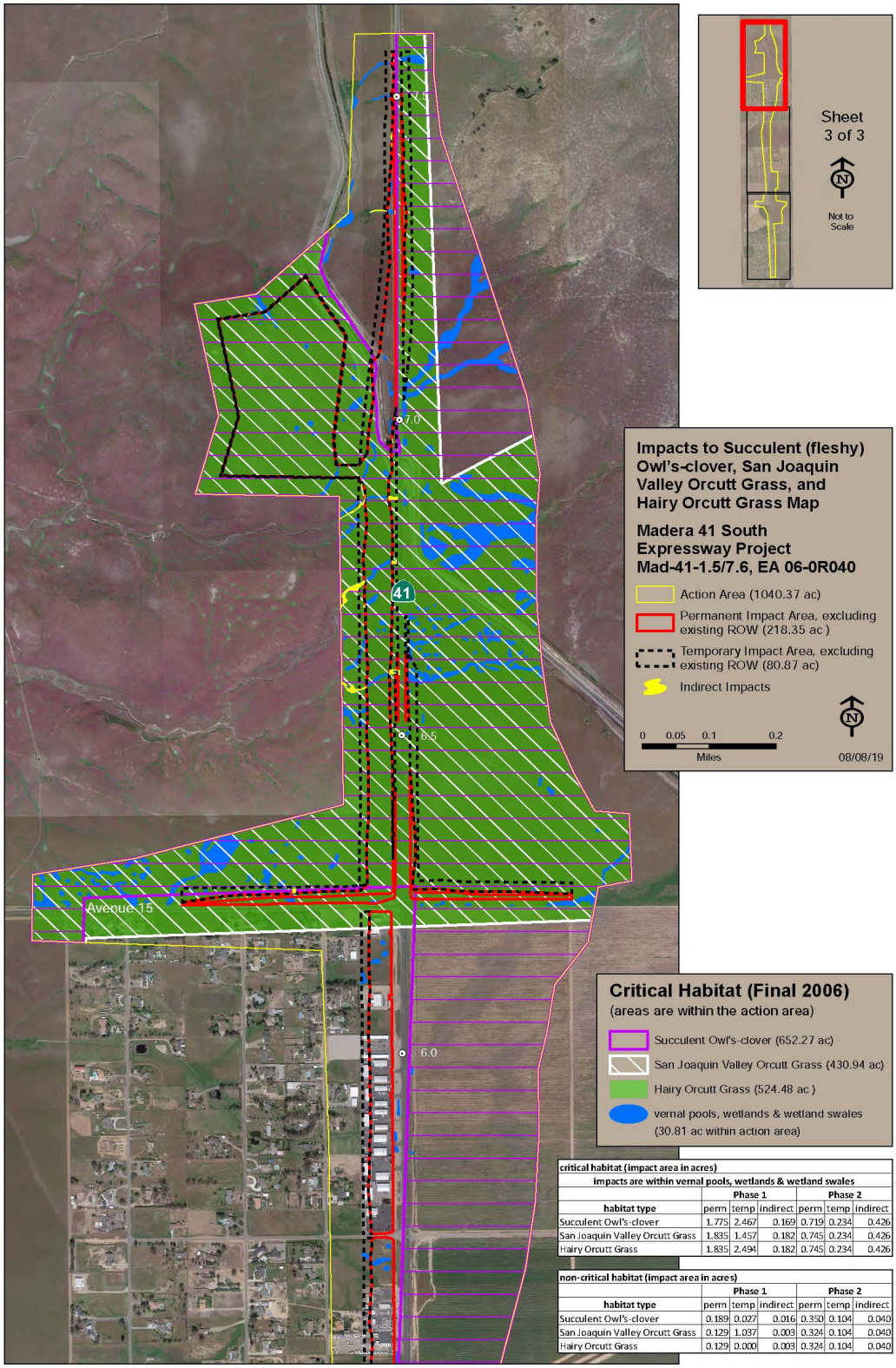
Succulent (Fleshy) Owl's Clover, Hairy Orcutt Grass, and San Joaquin Valley Orcutt Grass Habitat and Critical Habitat Map

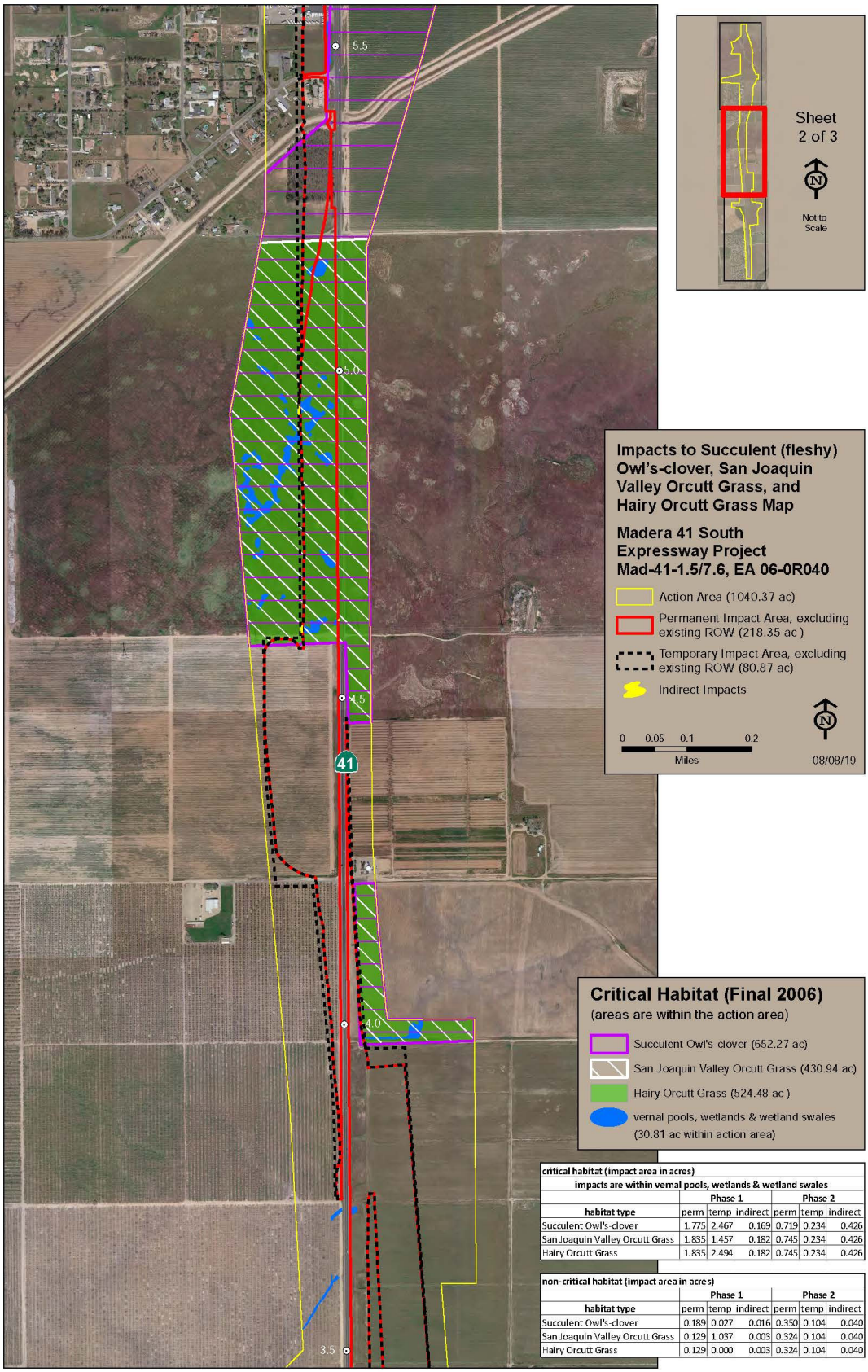


critical habitat (impact area in acres)
impacts are within vernal pools, wetlands & wetland swales

	Phase 1			Phase 2		
habitat type	perm	temp	indirect	perm	temp	indirect
Succulent Owl's-clover	1.775	2.467	0.169	0.719	0.234	0.426
San Joaquin Valley Orcutt Grass	1.835	1.457	0.182	0.745	0.234	0.426
Hairy Orcutt Grass	1.835	2.494	0.182	0.745	0.234	0.426

non-critical habitat (impact area in acres)

	Phase 1			Phase 2		
habitat type	perm	temp	indirect	perm	temp	indirect
Succulent Owl's-clover	0.189	0.027	0.016	0.350	0.104	0.040
San Joaquin Valley Orcutt Grass	0.129	1.037	0.003	0.324	0.104	0.040
Hairy Orcutt Grass	0.129	0.000	0.003	0.324	0.104	0.040



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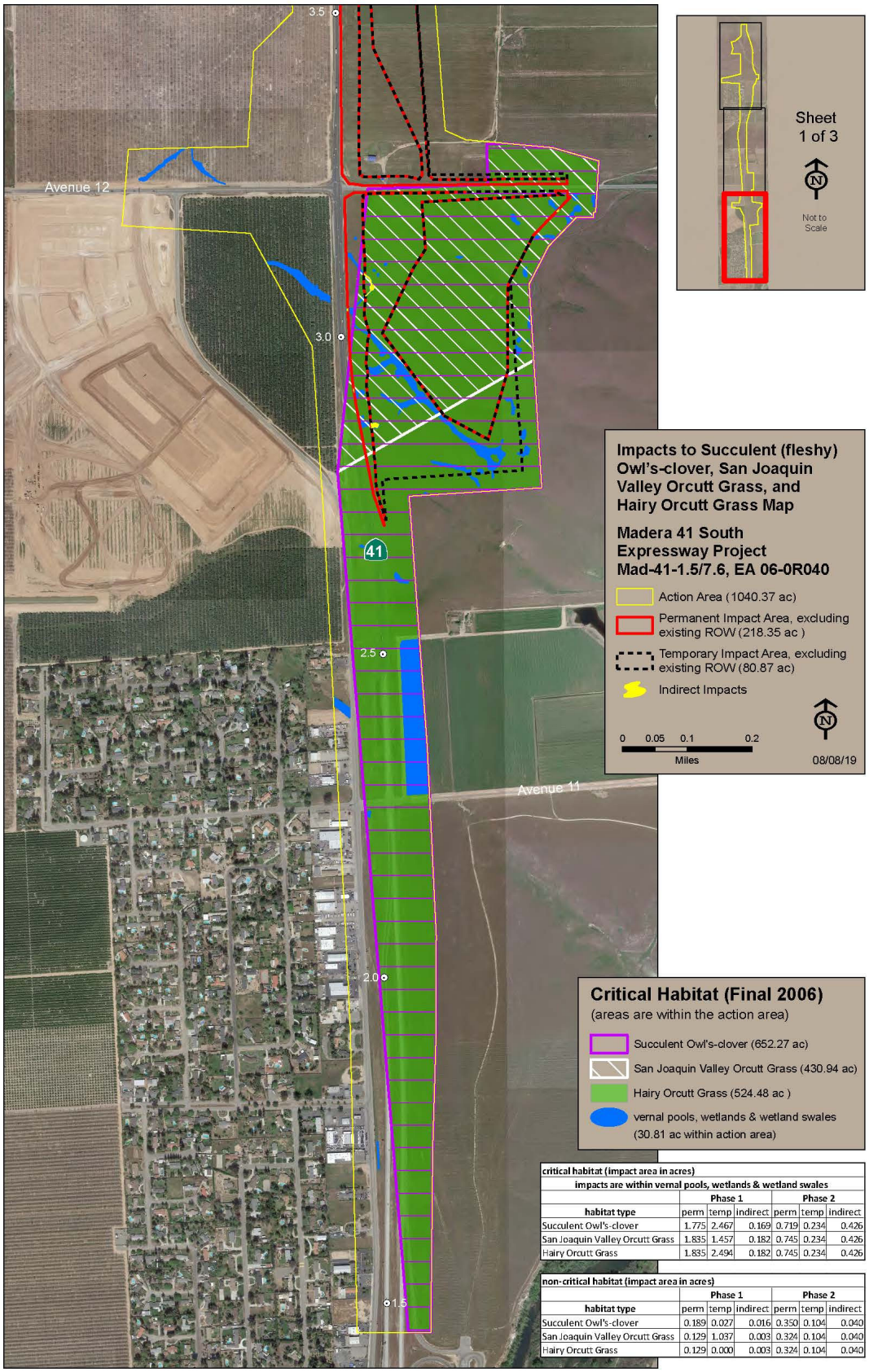

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	Phase 1			Phase 2		
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Appendix J Biological Opinion

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2015-F-0038-1

AUG 2 9 2019

Dena Gonzalez
Chief, Central Region Biology Branch
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Formal Consultation on the State Route 41 South Expressway Project, Madera County, California (California Department of Transportation 06-MAD-41-PM 1.5/7.6; EA 06-0R040)

Dear Ms. Gonzalez:

This letter is in response to the California Department of Transportation's (Caltrans) request to initiate formal consultation with the U.S. Fish and Wildlife Service (Service) on its action to construct the proposed State Route (SR) 41 South Expressway Project (project) in Madera County, California. Your initial request was received by the Service on December 17, 2018. At issue are the proposed project's effects on the Central California distinct population segment of the federally-threatened California tiger salamander (*Ambystoma californiense*; Central California tiger salamander), the federally-threatened vernal pool fairy shrimp (*Branchinecta lynchi*), fleshy owl's clover (*Castilleja campestris* spp. *succulenta*), San Joaquin Orcutt grass (*Orcuttia inaequalis*), and the federally-endangered San Joaquin kit fox (*Vulpes macrotis mutica*), hairy Orcutt grass (*Orcuttia pilosa*), and Hartweg's golden sunburst (*Pseudobahia bahiifolia*). Also at issue are the proposed project's effects on designated critical habitat for the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass. This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Caltrans has assumed the Federal Highway Administration's (FHWA) responsibilities for formal section 7 consultation per the Act, in accordance with 23 U.S.C. 327, and as described in the *Memorandum of Understanding* (MOU) *between the FHWA and Caltrans concerning the State of California's participation in the Surface Transportation Project Delivery Program pursuant to 23 U.S.C. 327* (renewed on December 23, 2016 for a term of five years, and finalized effectively on March 30, 2017). The MOU allows Caltrans to assume the FHWA's environmental responsibilities for highway projects in California under the National Environmental Policy Act and other federal laws.

The federal action on which we are consulting is Caltrans' proposal to widen 6.1 miles (mi) of SR 41 in Madera County, and to convert segments of the roadway to a four-lane expressway/four-lane conventional highway. Pursuant to 50 CFR 402.12(j), Caltrans submitted a biological assessment for our review of the findings presented therein. Following our requests for additional information, Caltrans subsequently submitted a draft revised biological assessment in April 2019, and a second revised biological assessment in August 2019 for our review. These findings concluded that the

proposed project may affect, but is not likely to adversely affect the San Joaquin kit fox, fleshy owl's clover, hairy Orcutt grass, and Hartweg's golden sunburst; may affect, and is likely to adversely affect the Central California tiger salamander, vernal pool fairy shrimp, and San Joaquin Orcutt grass; and may affect, and is likely to adversely affect designated critical habitat for the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass.

In considering your request, we based our evaluation on the following: (1) Caltrans' original December 14, 2018, letter and its supporting *Madera 41 South Expressway Biological Assessment*, revised in April 2019 (first revised Biological Assessment; draft version) and again in August 2019 (second revised Biological Assessment; final version); (2) email and telephone correspondence between the Service and Caltrans; (3) a site visit attended by Caltrans and the Service on September 27, 2018; and (4) other information available to the Service.

Species Discussion:

San Joaquin Kit Fox

Although Caltrans' biologists did not carry out focused surveys for the San Joaquin kit fox, they did not detect any individuals, potential dens, or other sign of the species during the course of other biological surveys conducted for the project. Even so, they identified suitable foraging habitat for the San Joaquin kit fox in the forms of cattle-grazed non-native grasslands, undeveloped residential and commercial lots, and cultivated oat fields; the grasslands and oat fields in particular support healthy populations of California ground squirrels (*Otospermophilus beecheyi*) and likely other small mammals, which indicate the presence of a sustainable prey base. The grasslands, as well as the existing drainage basins (when water is absent) also provide suitable denning habitat for the species. All of these lands together provide a means for the species to move and disperse across the landscape. However, despite the existence of suitable habitat, as well as the project's location within a linkage recovery area for the San Joaquin kit fox (Service, 2010), the species has not been detected on the eastern side of the San Joaquin Valley for a considerable period of time and so is unlikely to occur within the action area. The closest satellite recovery area for the species is the Western Madera County subpopulation (S4), which currently is presumed to be extirpated (Service, 2010). According to the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB) (2019), only one unspecified record (from the 1990s) for the San Joaquin kit fox exists within 10 mi of the center of the project on SR 41.

Caltrans anticipates that there will be a permanent loss of 171.25 acres (ac) of suitable denning, foraging, and dispersal habitat for the species across the entire project, as well as temporary disturbance to 71.23 ac of similar suitable habitat. However, because the likelihood is very low that the species even occurs within or near the action area, this loss and disturbance to habitat is unlikely to adversely affect the San Joaquin kit fox.

Fleshy owl's clover and hairy Orcutt grass

The vernal pools, seasonal wetlands, and seasonal wetland swales on-site may provide suitable habitat for both species of plant, but are less likely to do so in years of below average rainfall when there is insufficient water to support adequate hydroperiods. Soil types associated with these species and with vernal pool and wetland habitats (e.g., loams and clays) are found in two particular areas of non-native grasslands located north of Avenue 15 and south of Avenue 12. However, heavy grazing by cattle could disturb the habitat to an extent that the species are unable to maintain viable populations; also, competition with widespread invasive grasses and forbs could further reduce the

potential for the fleshy owl's clover and the hairy Orcutt grass to occur and persist there. In 2015, Caltrans' biologists conducted focused botanical surveys for both species of plant, appropriately timed to occur during their respective blooming seasons. These surveys covered most of the project footprint, with the exception of two areas to which Caltrans was denied permission to enter: 1) an approximately 0.70 mi segment on the east side of SR 41 between the Madera Canal and the project's northern terminus, and 2) two commercial properties on the west side of SR 41 between Road 204 and Avenue 15. Caltrans' biologists did not detect any individuals of either species during the surveys. However, because surveys occurred during a drought year, it is possible that conditions were not ideal for plant development or for detection by surveyors, and that the species could emerge during a year with average/above average rainfall.

According to the CNDDB (2019), there are 13 records of the fleshy owl's clover within 10 mi of the center of the project on SR 41; only one of these overlaps with the action area and last dates from 2017. This particular record consists of many hundreds of plants (and even thousands identified in 2010), that have been documented over time within Caltrans' proposed mitigation bank site, known as Madera Pools, which is located adjacent to the project site on the east side of SR 41 and south of the Madera 6.2 Lateral Canal. Caltrans' biologists attempted to use Madera Pools as a reference population for the species during the course of their 2015 botanical surveys of the project site, but did not discover any fleshy owl's clover present. However, the fleshy owl's clover has been detected in numerous wetlands within Madera Pools in 2010, 2011, 2016, and 2017 (in years with average or above average precipitation).

According to the CNDDB (2019), there are seven records for the hairy Orcutt grass within 10 mi of the center of the project on SR 41; two of these are located within the action area, including one overlapping with Madera Pools, and date from 1986 and 1995. However, the 1986 identification was later deemed questionable because in 1992, the plants at this same location were identified as San Joaquin Orcutt grass.

Caltrans anticipates that within the 423.11 ac project footprint, construction will result in the permanent loss of a total of 3.04 ac of suitable habitat for the fleshy owl's clover, in temporary disturbance to 2.83 ac, and in indirect effects to 0.66 ac across the entire project extent (covering Phases 1 and 2). Caltrans also anticipates that the project will result in the permanent loss of a total of 3.04 ac of suitable habitat for the hairy Orcutt grass, in temporary disturbance to 2.82 ac, and in indirect effects to 0.65 ac across the entire project extent (Phases 1 and 2; see Table 9).

Caltrans has determined that the proposed project is not likely to adversely affect the fleshy owl's clover or the hairy Orcutt grass. The Service concurs with this conclusion for the following reasons: 1) although both species have been discovered in the past within the larger-scale action area, they have not been detected within the actual project footprint (neither historically nor recently), so the likelihood is low that the species will occur within the extremely small areas of suitable aquatic habitat due to be lost, disturbed, and indirectly affected as a result of the project (for each species, these affected areas comprise only 1.5 percent of the entire project footprint); and 2) Caltrans proposes to implement several conservation measures that will reduce the potential for adverse effects to the species.

Hartweg's golden sunburst

Upland areas of non-native grasslands underlain by Rocklin soil types may provide suitable habitat for the species within the action area, including north of Avenue 11 (on both sides of the highway), in the southeast quadrant of the Avenue 12 intersection, and between the Madera 6.2 Lateral Canal and Avenue 15 (on the west side of SR 41).

According to the CNDDB (2019), there are five records of the species within 10 mi of the project's center on SR 41, the most recent of which dates from 2010. However, none of these is located within the action area. Caltrans' biologists carried out botanical surveys for the species in 2015, covering all suitable habitat and appropriately timed to occur during the plant's blooming season, but they did not detect any individuals.

Of the total 72.31 ac of suitable habitat for the species present within the action area, Caltrans anticipates that there will be a permanent loss of 28.73 ac of suitable habitat for the species, and temporary disturbance to 21.05 ac of habitat during Phase 1 of the project. Caltrans does not anticipate any effects to suitable habitat for the species during Phase 2.

Caltrans has determined that the proposed project is not likely to adversely affect the Hartweg's golden sunburst. The Service concurs with this conclusion for the following reasons: 1) even though suitable habitat for the species exists within the action area, there are no records of the plant occurring there (either historically or more recently during Caltrans' survey efforts), so the likelihood is low that the species will be detected prior to, or during construction; and 2) Caltrans proposes to implement several conservation measures that will reduce the potential for adverse effects to the species.

Caltrans has incorporated conservation measures specifically addressing the San Joaquin kit fox, fleshy owl's clover, hairy Orcutt grass, and Hartweg's golden sunburst in the Conservation Measures section of the biological opinion.

For the reasons described above, the potential for the action to adversely affect the San Joaquin kit fox, fleshy owl's clover, hairy Orcutt grass, and Hartweg's golden sunburst is discountable. Therefore, the Service concurs with Caltrans' determinations that the proposed action may affect, but is not likely to adversely affect any of these species. The remainder of this document provides our biological opinion on the effects of the proposed project on the Central California tiger salamander and its designated critical habitat, the vernal pool fairy shrimp and its designated critical habitat, the San Joaquin Orcutt grass and its designated critical habitat, and designated critical habitat for the fleshy owl's clover and hairy Orcutt grass.

Consultation History

November 5, 2014:	Caltrans, the Service, and the U.S. Army Corps of Engineers (Corps) held a meeting to discuss early project alternatives, approaches to proposed surveys, impacts to critical habitat, and compensatory mitigation.
November 18-26, 2014:	Caltrans and the Service exchanged emails regarding Caltrans' proposed survey plan for vernal pool branchiopods during the 2014/2015 wet season.
February - June, 2015:	Caltrans and the Service exchanged numerous emails and telephone calls regarding Caltrans' proposal to conduct geo-archaeological work on the project site. The Service recommended that Caltrans initiate consultation given that these activities may affect the species. The geo-archaeological work eventually was put on hold.
July 15, 2015:	The Service received Caltrans' vernal pool branchiopod wet season survey report.

November 6, 2015:	The Service received Caltrans' dry season survey report for large federally-listed branchiopods (as prepared by its consultant, ECORP Consulting, Inc.).
November 17, 2015 – February 25, 2016:	Caltrans and the Service exchanged multiple emails and telephone calls regarding Caltrans' plans to conduct further large branchiopod surveys, as well as botanical and Central California tiger salamander surveys. They also discussed the potential for various plant species to occur on the project site.
December 19, 2017:	Caltrans emailed the Service to request guidance on conducting vernal pool branchiopod sampling in critical habitat areas. The Service clarified some of their previous inter-agency correspondence from 2014.
September 5 & 10, 2018:	During a telephone discussion, Caltrans indicated to the Service that there was renewed movement on the project. They agreed to set up a teleconference to discuss the project in greater detail. Caltrans sent the Service electronic map files displaying the chosen build alternative and the proposed project footprint.
September 13, 2018:	Caltrans and the Service held a teleconference to discuss the latest developments relating to the project description, the detection of certain species on the project site, effects to the species, potential compensation methods and species determinations, and housing development projects adjacent to Caltrans' site.
September 27, 2018:	Caltrans and the Service visited the project site where they discussed preliminary project details and viewed areas where certain project elements would be constructed, as well as areas where Caltrans had surveyed and sampled for listed species. They also met with the Sierra Foothills Conservancy at the nearby Fenston Ranch property, which Caltrans was exploring as an option for its proposed compensatory mitigation.
October 11-12, 2018:	Caltrans emailed the Service to respond to questions asked during the site visit. Caltrans also provided the Service with a draft version of its proposed conservation measures for the Service's early input and comments. The Service provided several suggestions but noted that its comments were only preliminary given that Caltrans had not yet submitted its Biological Assessment.
December 17, 2018:	The Service received hard copies of Caltrans' Biological Assessment and its December 14, 2018, letter requesting initiation of formal consultation.
February 5, 2019:	Caltrans emailed the Service to inform it that Caltrans planned to reduce both its area of impacts and its associated proposed compensatory mitigation. Caltrans noted that it was working on updating its project maps.

March 21, 2019:	The Service emailed Caltrans to request additional information about the Biological Assessment.
April 8-9, 2019:	Caltrans emailed the Service to request clarification on one of the Service's questions/comments pertaining to critical habitat. Caltrans indicated that it was in the process of preparing a revised Biological Assessment.
April 18-19, 2019:	Caltrans and the Service exchanged emails pertaining to excavating burrows suitable for the Central California tiger salamander, and relocating the species.
April 30, 2019:	Caltrans responded to the Service's request for additional information, and submitted an electronic draft version of its first revised Biological Assessment for the Service's review. The first revised Biological Assessment featured changes based on Caltrans' responses to the Service's comments and questions; it also highlighted modifications made by Caltrans to the amount of affected habitat for various species as well as to the amount of affected designated critical habitat. Caltrans noted that it would finalize the document once the Service had reviewed it and agreed with the proposed changes.
June 25-26, 2019:	The Service emailed Caltrans to confirm that the changes made to the draft revised Biological Assessment were sufficient. The Service followed-up with further questions and comments. Caltrans responded to the Service's questions.
July 12 & 15-16, 2019:	Caltrans emailed the Service to discuss changes in how it proposed to address 'temporary aquatic habitat' for the Central California tiger salamander; consequently, Caltrans proposed to modify a component of its compensatory mitigation.
July 24-26, 2019:	The Service emailed Caltrans to ask a series of final questions about the project and its draft revised Biological Assessment. Caltrans responded to the majority of these questions. They also discussed and reviewed the proposed conservation measures in draft form.
July 29 - August 2, 2019:	Caltrans emailed the Service to follow-up with its responses to the Service's remaining questions about habitat impact mapping for various species. They also discussed updating the analysis of project impacts to account for indirect effects to habitat for the Central California tiger salamander, vernal pool fairy shrimp, and vernal pool plants. They further discussed an appropriate ratio to use in calculating compensation for indirect effects.
August 14-15, 2019:	Caltrans submitted to the Service an electronic copy of its second revised Biological Assessment, which introduced indirect effects to species' habitat as well as updated habitat impact mapping, impact tables, and compensatory mitigation calculations. The Service and

	Caltrans exchanged emails further clarifying how the indirect effects were assessed.
August 15, 2019:	The Service received a hard copy of Caltrans' second revised Biological Assessment.

BIOLOGICAL OPINION

Description of the Action

Caltrans, in coordination with Madera County (County), proposes to upgrade 6.1 mi of SR 41 beginning 0.8 mi south of the Avenue 11 undercrossing and ending 1.4 mi north of Avenue 15 (postmiles (PM) 1.5 - 7.6) north of Fresno in Madera County (see Figure 1). The purpose of the project is to improve the circulation of local roads and connectivity to SR 41, improve continuity and interregional mobility, accommodate future high traffic demands, and relieve existing congestion along this segment of SR 41. Caltrans, in coordination with the County, plan to construct the project in two phases.

Phase 1: This segment will extend from 0.8 mi south of the Avenue 11 undercrossing to 0.4 mi north of Avenue 15 (PM 1.5 - 6.6). Caltrans will:

- Widen the existing roadway from a 3-lane expressway to a 4-lane expressway from Avenue 10 to Avenue 12;
- Widen the existing roadway from a 2-lane conventional highway to a 4-lane expressway from Avenue 12 to Avenue 14;
- Widen the existing roadway from a 2-lane conventional highway to a 4-lane conventional highway from Avenue 14 to Avenue 15; and
- Raise the northbound lane profile between PM 1.5 - 3.8 and the southbound lane profile between PM 1.5 - 4.9.

1. Caltrans will clear and grub all areas within both the existing and proposed right-of-way (ROW) using heavy equipment such as excavators, scrapers, bulldozers, and dump trucks to remove existing vegetation and soils.

2. Caltrans will grade all areas previously cleared and grubbed, including those where portions of the northbound and southbound lanes will be constructed; where four of the five new detention basins will be constructed, i.e., DBs 1, 2, 2a, and 3; and where the embankment at the Avenue 11 undercrossing will be built. Subsurface soils that are excavated for the creation of the detention basins will be re-used for work on the embankment.

3. Once the new embankment is completed, Caltrans will construct a new undercrossing under the southbound SR 41 lanes to provide access along Avenue 11. This will involve excavating areas in preparation for installing abutments and bent footings, constructing columns and erecting falsework for the construction of the bridge structure. Based on the final design, Caltrans also may place piles below the footings to support the foundation. Caltrans then will install slope paving below the bridge on the abutment embankment.

4. Caltrans will replace the existing box culvert at the Madera 6.2 Lateral Canal with two 84-inch-diameter Reinforced Concrete Pipe (RCP) culverts to accommodate the wider roadway. Caltrans will:

a. Remove the upstream and downstream portions of the existing concrete-lined segment of the canal.
b. Place partial lengths of the two RCP culverts on the upstream and downstream sides of the box culvert.
c. Build a headwall and backfill the RCP culverts with concrete and soil.
d. Install a paved detour on top of the backfilled RCP culverts in order to divert traffic.
e. Remove the existing box culvert bridge.
f. Place the remaining lengths of the two RCP culverts on the upstream and downstream sides and join these with the initial RCP placements (see b above).
g. Construct the headwall and backfill the new RCP culverts.
h. Place riprap on the downstream side of the RCP culverts, within the canal.

5. Once the grading and earthwork are complete, Caltrans will pave the majority of the proposed southbound lanes within the limits of the project as well as portions of the northbound lanes near Avenue 12.

6. Once work on the southbound lanes is finished, Caltrans will shift traffic to the new southbound lanes so that work on the northbound lanes, including removal of the existing pavement, can be completed.

7. Caltrans will pave the entire median between Avenue 14 and Avenue 15, and install curb and gutter to create turn pockets to allow for access to SR 41 from local streets.

Phase 2: This segment will extend from Avenue 14 to 1.4 mi north of Avenue 15 (PM 3.8 – 7.6). Caltrans will:

- Widen the existing roadway between PMs 3.8 - 7.6 from a 4-lane conventional highway (built during Phase 1) to a 4-lane expressway; and
- Raise the northbound lane profile between PMs 3.8 - 7.6 and the southbound lane profile between PMs 4.9 - 7.6; both lane profiles will be raised between 2 ft. and 26 ft. in elevation.

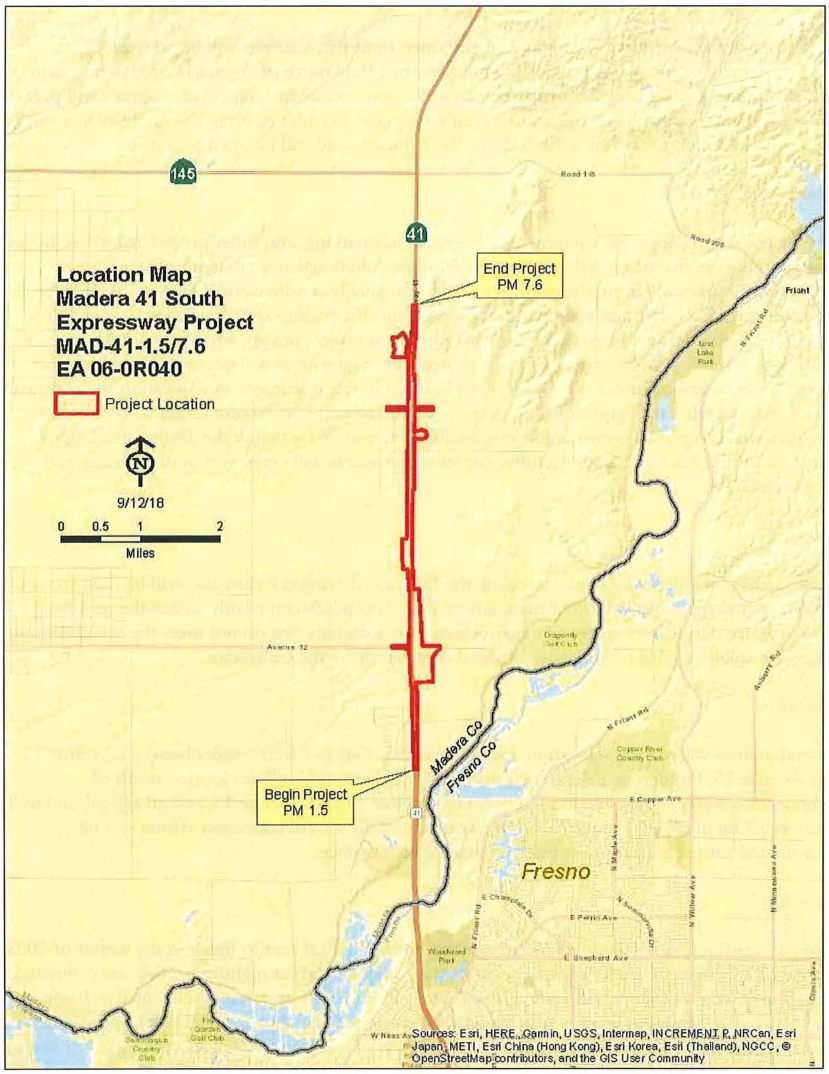
1. Caltrans will clear and grub all areas situated within both the existing and proposed ROWs in the northbound direction from 0.7 mi north of Avenue 12 to the northern limits of the project, as well as in the southbound direction, from 0.5 mi south of Avenue 14 to the northern limits of the project.

2. Caltrans will grade the areas where the remaining segments of the northbound and southbound lanes will be constructed; where the last of the five new detention basins will be constructed, i.e., DB 4; and where the embankment at the Madera Canal will be built. Subsurface soils that are excavated for the creation of the detention basin will be re-used for work on the embankment.

3. Caltrans will build two new bridges to span the Madera Canal. This will involve excavating areas in preparation for installing abutments and bent footings, constructing columns, and erecting falsework for the construction of the bridge structure. Based on the final design, Caltrans also may place piles below the footings to support the foundation. Caltrans then will install slope paving below the bridge on the abutment embankment.

4. Once the grading and earthwork are complete, Caltrans will pave the northbound lanes from 0.7 mi north of Avenue 12 to the northern limits of the project, as well as the southbound lanes from 0.5 mi south of Avenue 14 to the northern limits of the project.

Figure 1: Project Location (map prepared by Caltrans)



5. Once the majority of general paving operations are finished, Caltrans will implement a series of traffic shifts to accommodate pavement work from the southern limits of the project to 1.0 mi north of Avenue 12; this will facilitate completion of the final southbound paving and the filling in of a gap on the northbound lanes. Caltrans also will implement a series of traffic shifts to accommodate pavement work at the northern limits of the project in order to tie-in

the new four-lane expressway with the two-lane conventional highway situated north of the project.

6. Once the expressway is completed and open to traffic, Caltrans will begin work on a segment of the old alignment extending from 1.0 mi north of Avenue 12 to 0.6 mi north of Avenue 15. This segment will become a two-way county frontage road. Caltrans will perform some minor grading work and a pavement overlay in order to bring the roadway to a state of good repair. Once this work is done, the frontage road will be open to traffic.

Staging Areas & Access

Designated staging areas for equipment storage, vehicle parking, and other project-related activities could include the five proposed detention basin sites. Additional areas that are expected to be temporarily impacted, but not designated as environmentally sensitive areas, also are likely to be used for staging vehicles and equipment. However, specific staging areas identified on-site will depend on Caltrans' decisions during the final phases of project design, and after the construction contractor is hired. For the purpose of this project, all staging areas will occur within the project footprint, as described under the Action Area heading in this document. Any location the contractor uses that is outside the footprint will need to be evaluated and may require Caltrans to revise its consultation. Temporary construction easements likely will be located at the Madera 6.2 Lateral Canal and at the Madera Canal. All other construction access will occur within the existing and proposed ROW.

Borrow

Those areas that will be excavated to create the five new detention basins also will be used for soil borrow, as needed. Soils and other materials may be stockpiled temporarily within the proposed ROW for use during later stages of construction. Any materials that do not meet the specifications for re-use will be hauled off-site and disposed of properly by the contractor.

Utilities

Several utilities will require relocation, including Pacific Gas & Electric poles between Avenue 12 and Avenue 15, Ponderosa Telephone Fiber Optic underground utilities located north of Avenue 15, a water supply line located between Avenue 14 and Avenue 15, and an agricultural well situated 0.7 mi north of Avenue 12 on the west side of SR 41. All relocation efforts will be coordinated with the appropriate utility companies in advance.

Scheduling

Phase 1 construction is scheduled to begin in the spring of 2021 and to finish in the winter of 2023. A total of approximately 480 working sessions (i.e., daytime and/or nighttime work) are estimated, including 300 days of work and 180 nights of work. Phase 2 construction is scheduled to begin in the spring of 2035 and to finish in the winter of 2037. A total of approximately 480 working sessions are estimated for this second phase, including 380 days of work and 100 nights of work. For both phases, construction is anticipated to occur year-round with no seasonal shutdowns.

Operation and Maintenance

Routine, periodic maintenance activities will continue within the action area following construction of the new highway and stormwater detention basins. Areas of disturbed soils within the proposed

ROW will receive additional maintenance associated with the re-establishment of vegetation once erosion control and BMPs have been implemented.

Conservation Measures

Caltrans, in coordination with the County, and their contractors will implement the following conservation measures for the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, San Joaquin kit fox, fleshy owl's clover, hairy Orcutt grass, and Hartweg's golden sunburst to reduce any potential adverse effects to these species.

General/Multi-Species

1. Prior to the start of work, a Service-approved biologist(s) will provide worker environmental awareness training for all construction personnel, including contractors, subcontractors, and contractors' representatives, covering the status of all listed species as well as areas of designated critical habitat; how to identify these species and their habitats; the importance of avoiding impacts to the species; the laws that protect them; and what to do if an individual is encountered during construction. New construction personnel who are added to the project after the training is first conducted also will be required to take the training. Documentation of the training, including sign-in sheets, will be kept on-file.

2. Standard construction best management practices (BMPs) (Caltrans, 2017) will be developed for the project and will be implemented throughout the course of construction in order to avoid adverse effects to water quality. BMPs associated with an erosion control plan will be prepared for avoiding discharge of pollutants from vehicle/equipment cleaning into aquatic habitats. Caltrans personnel and the contractor will perform routine inspections of the construction area to verify that BMPs are being properly implemented and maintained, and are operating effectively as designed. A water quality inspector will inspect the site before and after a rain event to ensure that stormwater BMPs are adequate.

    a. An Emergency Spill Prevention Plan (ESPP) will be prepared to minimize the risk of fluids or other materials (oils, transmission and hydraulic fluids, cement, fuel) from entering water features and sensitive upland habitats. The ESPP will be kept on-site and will be easily accessible throughout the course of construction.

    b. Vehicle and equipment fueling and maintenance operations will occur at least 50 ft. away from watercourses, except at established commercial gas stations or vehicle maintenance facilities. All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.

    c. Heavy equipment will be washed clean of organic material prior to moving into a given work location.

    d. Water trucks and dust palliatives will be used to control dust in excavation and fill areas, and for covering temporary stockpiles of dirt or other loose construction materials when weather conditions require.

3. Prior to being moved, vehicles and equipment will be checked for any sensitive wildlife sheltering underneath them. In the event that an animal is observed, the vehicles/equipment will not be moved until the individual has vacated the area of its own accord.

4. All project-related vehicles will observe a daytime speed limit of no more than 20 mi per hour (mph) and a nighttime speed limit of no more than 10 mph in all project areas, except on the highway.

5. The use of temporary artificial lighting on-site will be limited, except when necessary for construction, or for driver and pedestrian safety. Any artificial lighting used during construction, particularly at night, will be confined to areas within the construction footprint and directed away from surrounding sensitive habitat. Caltrans will limit non-target casting of light by installing shielding behind and underneath the light source to confine the illumination further so as to minimize its effects on the species.

6. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed daily from the project site in order to reduce the potential for attracting predator species.

7. To eliminate the potential for disturbance or injury to, or death of, any species resulting from the presence of pets and firearms, neither (with the exception of firearms carried by authorized law enforcement officials) will be allowed on the project site.

8. In order to control erosion and restore habitat value, all areas within the action area that are disturbed during construction (e.g., graded, denuded) will be re-contoured if necessary and stabilized as soon as possible; following the completion of construction, areas will be revegetated via hydro-seeding with an appropriate, weed-free native plant seed mixture.

Central California tiger salamander

1. A Service-approved biologist(s) will conduct visual encounter preconstruction surveys of upland habitat for the Central California tiger salamander no more than 14 days prior to the start of groundbreaking or other general construction activities in any given part of the footprint. The surveys will pay particular attention to detecting burrows that could be used as refugia by the species. If any burrows are discovered, they will be flagged or otherwise marked, and avoided by at least 50 ft. If the burrows cannot be avoided, they will be inspected and excavated by the Service-approved biologist(s) in accordance with the procedures and methodology established in a CDFW- and Service-approved burrow excavation and relocation plan (Relocation Plan). If an individual is found, it will be relocated to a suitable burrow outside of the project footprint, but as close as possible to its original capture location. Both the preconstruction surveys and subsequent burrow excavations will occur prior to the installation of exclusion fencing around the boundary of the project footprint (see measure #2 below) so as to ensure the footprint is cleared and to minimize the risk of individuals becoming trapped within the fenced area. Caltrans will provide the Service with a written report that sufficiently documents the survey efforts. If construction stops for a period of two weeks or longer, a new preconstruction survey will be completed no more than 24 hours prior to restarting work.

2. Prior to the start of work, and immediately following preconstruction surveys and any burrow excavations, temporary silt fencing (or other types of fencing materials that will not entangle the species), will be installed around the limits of the project footprint to preclude construction equipment, vehicles, and personnel from encroaching on areas outside of these limits and to prevent the Central California tiger salamander from entering the work zones. Installation of the exclusion fencing will focus on where work areas abut suitable upland and/or aquatic habitats. Fencing also will include one-way funnels placed at regular intervals

(to be determined in coordination with the Service) to allow any individuals that become trapped inside the fenced area to leave, but not re-enter the project footprint. Fencing will measure at least 3 ft. tall and be buried at least 6 inches below the ground to prevent individuals from attempting to burrow or move under the structure. In order to provide shelter for any individuals trapped along the exclusion fence, coverboards will be installed along the interior fence line at regular intervals.

3. For all work occurring during the rainy season (i.e., defined as approximately November 1 through May 31, which is when breeding adults are likely to be above-ground and actively migrating to and from aquatic habitat to breed), the proposed exclusion fencing must be in place prior to the onset of rain in order to prevent individuals from moving into active construction zones where they could be disturbed, injured, or killed by construction activities, equipment, or crews.

4. No construction activities will be conducted in upland or aquatic habitat areas where the Central California tiger salamander may occur if: 1) it is raining, 2) there is a greater than 70 percent chance of rain based on the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service forecast on any given work day, or 3) a rain event greater than 0.25 inch has occurred within the past 48 hours.

    a. Following a rain event, a Service-approved biologist(s) will conduct visual encounter surveys for the species in all active work areas (including access roads and staging areas) prior to the resumption of construction activities and the use of access routes and staging areas.

5. In addition to conducting worker environmental awareness training and preconstruction surveys, a Service-approved biologist(s) will be present on-site to monitor for the species during the installation, replacement, and removal of all exclusion fencing. (S)he also will be present on-site at least once per week, over the entire course of construction, to inspect the fencing for damage and to clear the fenced area. Furthermore, this individual(s) will be present on-site during ground-disturbing activities (i.e., clearing, grubbing, grading, excavation, filling, etc.) whenever there is a greater than 70 percent chance of rain based on NOAA's National Weather Service forecast on any given work day, and for five days following a rain event greater than 0.25 inch. Anytime the Service-approved biologist(s) is present on-site, (s)he will check for any Central California tiger salamanders trapped within the fenced area and under the coverboards prior to the start of each workday. When not present on-site, the Service-approved biologist(s) will be available on-call during all construction periods in the event that the species is detected.

    a. If a live Central California tiger salamander is encountered at any point during preconstruction or construction activities, work will stop in the vicinity of the individual and will not resume until the Service-approved biologist(s) either has monitored the individual and allowed it to move away unharmed, or has relocated it in accordance with the Relocation Plan. If a dead individual is found, the Service-approved biologist(s) will follow the instructions described in the **Salvage and Disposition of Individuals** section of this document. Caltrans will notify the Service of any such encounter (live or dead) within one working day and provide a summary of the date(s), location(s), description of the habitat in which it was found, and any other pertinent information.

6. To avoid entangling the Central California tiger salamander, erosion control methods will not utilize plastic, monofilament, jute, or similarly tightly woven fiber netting or other such materials. Acceptable substitutes include coconut coir matting, tackified hydro-seeding compounds, or other similar materials.

7. To prevent the inadvertent entrapment of the Central California tiger salamander or other animals during construction, all excavated, steep-walled holes or trenches measuring more than 6 inches deep either will be covered at the close of each working day using plywood or similar materials (without openings), or will be provided with one or more escape ramps constructed of earth fill or wooden planks in the event that the holes/trenches cannot be fully covered. All holes or trenches will be checked daily for trapped wildlife. Before such holes or trenches are filled, they will be thoroughly inspected for trapped wildlife.

8. All construction pipes, culverts, or similar structures that are stored on the construction site for one or more overnight periods will be capped or sealed with tape (or similar materials), or stored at least 3 ft. above ground level. They will be inspected thoroughly for the Central California tiger salamander before being buried, capped, or otherwise used. If an individual is discovered during this inspection, the Service-approved biologist(s) will be notified immediately. The biologist(s) will decide whether to leave the individual to move away on its own, or to intervene and relocate it.

9. The County, in coordination with Caltrans, proposes to provide compensatory mitigation for adverse effects to the Central California tiger salamander resulting from construction impacts to aquatic and upland habitats. The County, in coordination with Caltrans, will compensate for the permanent loss of a total of 6.25 ac of aquatic habitat and 189.25 ac of upland habitat; for temporary disturbance to a total of 3.39 ac of aquatic habitat and 71.53 ac of upland habitat; and for indirect effects to a total of 0.40 ac of aquatic habitat (using a 3:1 [ac:ac] compensation ratio for permanent effects to breeding and upland habitats, a 1.1:1 compensation ratio for temporary effects to breeding and upland habitats, a 0.5:1 compensation ratio for permanent and temporary effects to temporary aquatic habitat, and a 1.75:1 compensation ratio for indirect effects to breeding habitat) ((192.96 ac x 3) + (71.76 ac x 1.1) + (5.7 ac x 0.5) + (0.40 ac x 1.75)= 661.38 ac of compensation covering Phases 1 and 2 of construction) (see Table 1). Prior to the start of work on each phase, Caltrans will verify the areas of impacts and proposed compensation. If the amount of affected habitat increases, Caltrans may need to consider reinitiating formal consultation.

    a. The County, in coordination with Caltrans, proposes either to 1) purchase a total of 661.38 ac worth of credits at a Service-approved conservation bank whose service area covers the project area (credits for Phase 1 and Phase 2 will be purchased independently, i.e., prior to the start of groundbreaking for each respective phase); or 2) place conservation easements on a total of 661.38 ac of land (easements for Phase 1 and Phase 2 will be recorded independently, and prior to the start of construction for each respective phase). Should one or more Service-approved conservation easements be established, each will be held by a Service-approved third-party entity, and managed according to a Service-approved long-term management plan (LTMP). A Service-approved endowment will be established to fund the long-term management, maintenance, and monitoring activities on the site. The final LTMP, along with an endowment analysis, will be submitted to the Service for approval prior to recordation of the conservation easement for each respective phase of construction. The County, in coordination with Caltrans, is exploring various options, including a potential collaboration with the Sierra Foothills Conservancy

regarding the purchase of land at the Fenston Ranch property, which is located northwest of the project area, between Avenue 15 and SR 145 in Madera County. The Service will review and approve any proposed preservation lands.

Table 1: Proposed compensatory mitigation for effects to habitat for the Central California tiger salamander

Phase 1

Habitat	Effects		Compensation Ratio	Compensation Amount (in acres)
	Type	(acres)		
Aquatic - Breeding	Permanent	3.71	3:1	11.13
Aquatic - Temporary*		1.47	0.5:1	0.74
Subtotal (Aquatic)		5.18	-	11.87
Upland		129.27	3:1	387.81
Total		**134.45**	-	**399.68**
Aquatic - Breeding	Temporary	0.23	1.1:1	0.25
Aquatic - Temporary*		2.64	0.5:1	1.32
Subtotal (Aquatic)		2.87	-	1.57
Upland		54.24	1.1:1	59.67
Total		**57.11**	-	**61.24**
Aquatic - Breeding	Indirect	0.40	1.75:1	0.70
Aquatic - Temporary*		-	-	-
Upland		-	-	-
Total		**0.40**	-	**0.70**
Total Phase 1		***191.96***	-	***461.62***

Phase 2

Habitat	Effects		Compensation Ratio	Compensation Amount (in acres)
	Type	(acres)		
Aquatic - Breeding	Permanent	-	-	-
Aquatic - Temporary*		1.07	0.5:1	0.54
Subtotal (Aquatic)		1.07	-	0.54
Upland		59.98	3:1	179.94
Total		**61.05**	-	**180.48**
Aquatic - Breeding	Temporary			
Aquatic - Temporary*		0.52	0.5:1	0.26
Subtotal (Aquatic)		0.52	-	0.26
Upland		17.29	1.1:1	19.02
Total		**17.81**	-	**19.28**
Aquatic - Breeding	Indirect	-	-	-
Aquatic - Temporary*		-	-	-
Upland		-	-	-
Total		-	-	-
Total Phase 2		***78.86***	-	***199.76***
GRAND TOTAL		**270.82**		**661.38**

* Water features that have the potential to serve as temporary stop-off habitat for individuals that may be migrating or dispersing through the area. Even during years of average/above average rainfall, however, these features are unlikely to hold sufficient water for long enough to support successful breeding.

Vernal pool fairy shrimp

1. Access, egress, and ground-disturbing activities will be sited so as to avoid vernal pools and other aquatic resources as much as possible.

2. The County, in coordination with Caltrans, proposes to provide compensatory mitigation for adverse effects to the vernal pool fairy shrimp resulting from impacts to aquatic habitat. The County, in coordination with Caltrans, will compensate for the permanent loss of a total of 3.82 ac of aquatic habitat; for temporary disturbance to 2.98 ac of aquatic habitat; and for indirect effects to 0.69 ac of aquatic habitat (using a 3:1 [ac:ac] compensation ratio for permanent effects, a 1.1:1 ratio for temporary effects, and a 1.75:1 compensation ratio for indirect effects) ((3.82 ac x 3) + (2.98 ac x 1.1) + (0.69 ac x 1.75) =15.95 ac of compensatory mitigation) (see Table 2). The County, in coordination with Caltrans, proposes to compensate for these effects either 1) through the purchase of 15.95 ac worth of credits at a Service-approved conservation bank whose service area covers the project area, or 2) through 15.95 ac of permittee-responsible compensatory mitigation (refer to measure #9.a. under the Central California tiger salamander heading for more details). Prior to the start of work on each construction phase, Caltrans will verify the areas of impacts and proposed compensation. If the amount of affected habitat increases, Caltrans may need to consider reinitiating formal consultation. The County, in coordination with Caltrans, will complete its proposed compensatory mitigation for Phase 1 and Phase 2 independently and prior to the start of groundbreaking for each respective phase.

Table 2: Proposed compensatory mitigation for effects to habitat for the vernal pool fairy shrimp

Phase 1				
Habitat	**Effects**		**Compensation Ratio**	**Compensation Amount (in acres)**
	Type	**(acres)**		
Aquatic*	Permanent	2.87	3:1	8.61
	Temporary	2.70	1.1:1	2.97
	Indirect	0.2	1.75:1	0.35
Total Phase 1		**5.77**	-	**11.93**

Phase 2				
Habitat	**Effects**		**Compensation Ratio**	**Compensation Amount (in acres)**
	Type	**(acres)**		
Aquatic*	Permanent	0.95	3:1	2.85
	Temporary	0.28	1.1:1	0.31
	Indirect	0.49	1.75:1	0.86
Total Phase 2		**1.72**	-	**4.02**
GRAND TOTAL (Phase 1+2)		**7.49**	-	**15.95**

*includes vernal pools, pools, seasonal wetlands, seasonal wetland swales, and drainage basins

San Joaquin kit fox

1. Preconstruction surveys will be conducted by a Service-approved biologist(s) no more than 30 days prior to the beginning of ground disturbance and/or construction activities. Surveys for the San Joaquin kit fox and its dens will be performed throughout the project footprint, as well as in areas 200 ft. out from the edge of the footprint that are accessible and/or visible with binoculars.

a. Prior to the start of ground disturbance and/or construction, Caltrans will submit to the Service an email report and map showing the results of the surveys and the location of any potential and/or known dens.

2. Disturbance to any potential, known, or natal dens identified during preconstruction surveys and/or construction will be avoided. If any dens are discovered either within the project footprint or 200 ft. out from the edge of the footprint, Caltrans will implement the following:

   a. Potential dens that are located at least 50 ft. from construction will be protected by a 50 ft. exclusion zone. Known dens that are located at least 100 ft. from construction will be protected by a 100 ft. exclusion zone. In instances where 50 ft. or 100 ft. exclusion zones cannot be maintained, potential and/or known dens will be monitored for three consecutive nights using tracking medium and/or a remote sensor camera, and once they are verified to be unoccupied, reduced exclusion zones (determined in coordination with the Service) will be established. The exclusion zones will be demarcated by types of fencing or flagging that do not entangle the San Joaquin kit fox or prevent ingress/egress.

3. In the unlikely event that the San Joaquin kit fox or its sign is detected during the course of the project, Caltrans will notify the Service as soon as possible for any additional guidance, and to determine if reinitiation of formal consultation to address adverse effects to the species is warranted, along with any proposed compensatory mitigation.

San Joaquin Orcutt grass, fleshy owl's clover, hairy Orcutt grass, and Hartweg's golden sunburst

1. The County, in coordination with Caltrans, proposes to provide compensatory mitigation for adverse effects to the San Joaquin Orcutt grass resulting from impacts to suitable aquatic habitat. The County, in coordination with Caltrans, will compensate for the permanent loss of a total of 3.04 ac of habitat, for temporary disturbance to 2.83 ac of habitat, and for indirect effects to 0.65 ac of habitat (using a 3:1 [ac:ac] compensation ratio for permanent effects; a 1.1:1 compensation ratio for temporary effects; and a 1.75:1 compensation ratio for indirect effects) ((3.04 ac x 3) + (2.83 ac x 1.1) + (0.65 ac x 1.75)=13.37 ac of compensatory mitigation) (see Table 3). The County, in coordination with Caltrans, proposes to compensate for these effects either 1) through the purchase of 13.37 ac worth of credits at a Service-approved conservation bank whose service area covers the project area, or 2) through 13.37 ac of permittee-responsible compensatory mitigation (refer to measure #9.a. under the Central California tiger salamander heading for more details). Prior to the start of work on each construction phase, Caltrans will verify the areas of impacts and proposed compensation. If the amount of affected habitat increases, Caltrans may need to consider reinitiating formal consultation. The County, in coordination with Caltrans, will complete its proposed compensatory mitigation for Phase 1 and Phase 2 independently and prior to the start of groundbreaking for each respective phase.

Table 3: Proposed compensatory mitigation for effects to habitat for the San Joaquin Orcutt grass

Phase 1

Habitat	Effects		Compensation Ratio	Compensation Amount (acres worth)
	Type	(acres)		
Vernal pools, seasonal wetlands, & seasonal wetland swales	Permanent	1.97	3:1	5.91
	Temporary	2.50	1.1:1	2.75
	Indirect	0.18	1.75:1	0.32
Total *Phase 1*		**4.65**		**8.98**

Phase 2

Habitat	Effects		Compensation Ratio	Compensation Amount (acres worth)
	Type	(acres)		
Vernal pools, seasonal wetlands, & seasonal wetland swales	Permanent	1.07	3:1	3.21
	Temporary	0.33	1.1:1	0.36
	Indirect	0.47	1.75:1	0.82
Total *Phase 2*		**1.87**		**4.39**
GRAND TOTAL		**6.52**		**13.37**

2. Prior to the start of construction, a Service-approved biologist(s) will conduct a preconstruction botanical survey of the entire project extent (covering both the existing ROW and proposed ROW) during the appropriate blooming season(s) for all species. If individuals are found during these survey efforts, exclusion fencing, or some other type of barrier/marker will be installed to protect them from encroachment by construction activities, equipment, and personnel. Caltrans will coordinate with the Service to determine if any further actions are necessary to avoid effects to the species.

    a. If the fleshy owl's clover, hairy Orcutt grass, or Hartweg's golden sunburst are detected during the preconstruction botanical surveys, or during construction, and cannot be avoided, Caltrans will reinitiate formal consultation with the Service to address adverse effects to those species that are identified on-site. The County, in coordination with Caltrans, will propose corresponding compensatory mitigation. If any listed species is found, Caltrans will implement additional minimization efforts such as transplanting (to a suitable location outside of the project footprint); collecting seed; or collecting, stockpiling, and re-applying duff.

Action Area

The action area is defined in 50 CFR 402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." The action area for the proposed project is composed of the 423.11 ac project footprint, which encompasses the area impacted by construction-related activities, equipment, and personnel (i.e., operations, access, storage, staging, and temporary construction easements).

The project footprint consists of 1) 6.1 mi of existing roadway infrastructure and pavement/ hardscape; and 2) a mosaic of habitat types within Caltrans' existing and proposed ROWs, including developed/undeveloped residential and commercial lands, agricultural lands, and non-native grasslands interspersed with various aquatic features. The action area also includes land and water features extending an average of approximately 250 ft. from the edge of the footprint (> 250 ft. in some areas and less than 250 ft. in other areas), which will experience further-reaching effects of

construction activities such as noise, visual disturbance, and hydrologic modifications. Should the County, in coordination with Caltrans, choose to undertake permittee-responsible mitigation, the action area further includes the property/ies that will be placed under conservation easement.

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed federal action, and any cumulative effects, on the range-wide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed federal action and the effects of any interrelated or interdependent activities on the species; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the action area on the species.

Analytical Framework for the Adverse Modification Determination

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to destroy or to adversely modify designated critical habitat. A final rule revising the regulatory definition of "destruction or adverse modification" (DAM) was published on February 11, 2016 (81 FR 7214). The final rule became effective on March 14, 2016. The revised definition states:

> "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features."

The DAM analysis in this biological opinion relies on four components: (1) the *Status of Critical Habitat*, which describes the range-wide condition of the critical habitat in terms of the key components (i.e., essential habitat features, primary constituent elements, or physical and biological features) that provide for the conservation of the listed species, the factors responsible for that condition, and the intended value of the critical habitat overall for the conservation/recovery of the listed species; (2) the *Environmental Baseline*, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the value of the critical habitat in the action area for the conservation/recovery of the listed species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed federal action and the effects of any interrelated and interdependent activities on the key components of critical habitat that provide for the conservation of the listed species, and how those impacts are likely to influence the conservation value of the affected critical habitat; and (4) *Cumulative Effects*, which evaluate the effects of future non-federal activities that are reasonably certain to occur in the action area on the key components

of critical habitat that provide for the conservation of the listed species and how those impacts are likely to influence the conservation value of the affected critical habitat.

For purposes of making the DAM determination, the Service evaluates if the effects of the proposed federal action, taken together with cumulative effects, are likely to impair or preclude the capacity of critical habitat in the action area to serve its intended conservation function to an extent that appreciably diminishes the range-wide value of critical habitat for the conservation of the listed species. The key to making that finding is understanding the value (i.e., the role) of the critical habitat in the action area for the conservation/recovery of the listed species based on the *Environmental Baseline* analysis.

Status of the Species

Central California tiger salamander

For the most recent comprehensive assessment of the species' range-wide status, please refer to the *Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander* (Service, 2017; Central CTS Recovery Plan). Threats evaluated during preparation of the Central CTS Recovery Plan and discussed in the final document have continued to act on the species since the 2017 Central CTS Recovery Plan was finalized, with loss and fragmentation of habitat being the most significant effect. While there have been continued losses of Central California tiger salamander habitat throughout the various recovery and management units defined in the Central CTS Recovery Plan, including the Southern San Joaquin Recovery Unit/Little Table Mountain Management Unit in which the proposed project is located, to date, no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species.

Vernal pool fairy shrimp

For the most recent comprehensive assessment of the range-wide status for each species, please refer to the Vernal Pool Fairy Shrimp 5-Year Review (Service, 2007). No change in the listing status for the species was recommended in the 5-year review. Threats evaluated during the review and discussed in the final documents have continued to act on the species since the 2007 5-year review was finalized, with loss and fragmentation of habitat being the most significant effect. While there have been continued losses of vernal pool fairy shrimp habitat throughout the various vernal pool regions identified in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service, 2005c; Vernal Pool Recovery Plan), including within the Southern Sierra Foothills vernal pool region and the Madera Core Area in which the proposed project is located, to date, no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species.

San Joaquin Orcutt grass

For the most recent comprehensive assessment of the range-wide status for each species, please refer to the *San Joaquin Valley Orcutt Grass 5-Year Review* (Service, 2013). No change in the listing status for the species was recommended in the 5-year review. Threats evaluated during the review and discussed in the final documents have continued to act on the species since the 2013 5-year review was finalized, with loss and fragmentation of habitat being the most significant effect to its survival and recovery. While there have been continued losses of San Joaquin Orcutt grass habitat throughout the various vernal pool regions as identified in the Vernal Pool Recovery Plan, including within the Southern Sierra Foothills vernal pool region and the Madera Core Area in which the

proposed project is located, to date, no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species.

Status of Critical Habitat

Central California tiger salamander

The Service published a final rule designating critical habitat for the Central California tiger salamander on August 23, 2005 (70 FR 49380) (Service, 2005b). The rule became effective on September 22, 2005, when the Service designated approximately 199,109 ac of critical habitat for the species. The critical habitat comprises 31 units throughout four geographic regions (Central Valley Region, Southern San Joaquin Valley Region, East Bay Region, and Central Coast Region), located within 19 California counties (Service, 2005b). These final critical habitat units constitute the Service's best assessment, at the time of publication of the final rule, of the areas that contain those habitat features essential for the conservation of the Central California tiger salamander that may require special management.

Based on the life history, biology, and ecology of the species, and the habitat requirements for sustaining the essential life-history functions of the species, the Service determined that the Primary Constituent Elements (PCEs) and the associated physical and biological features (PBFs) essential to the conservation of the Central California tiger salamander consist of three components (Service, 2005b):

1. Standing bodies of fresh water (including natural and manmade (e.g., stock)) ponds, vernal pools, and other ephemeral or permanent water bodies), which typically support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall. This requisite aquatic habitat is essential for providing the space, food, and cover necessary to support reproduction, and to sustain early life history stages of larval and juvenile Central California tiger salamanders.

2. Upland habitats situated adjacent to, and accessible to and from breeding ponds, which contain small mammal burrows or other underground habitat that the species depends upon for food, shelter, and protection from the elements and predation. Essential upland habitats containing underground refugia are essential for the survival of adult and juvenile Central California tiger salamanders that have recently undergone metamorphosis.

3. Accessible upland dispersal habitat between occupied locations that allow for movement between such sites. Protecting the ability of Central California tiger salamanders to move freely across the landscape in search of suitable aquatic and upland habitats is essential in maintaining gene flow and for recolonization of sites that may become temporarily extirpated.

Vernal pool fairy shrimp

The Service published a final rule on August 6, 2003 (Service, 2003), which was subsequently revised on August 11, 2005 (Service, 2005a), and again on February 10, 2006 (Service, 2006), designating approximately 597,821 ac of critical habitat for the vernal pool fairy shrimp. The critical habitat comprises 35 units located within portions of 24 California counties and one Oregon county (Service, 2006). These final critical habitat units constitute the Service's best assessment, at the time of publication of the final rule, of those areas that were determined to be occupied at the time of listing, and that contain the primary constituent elements (PCEs) essential for the conservation of

the vernal pool fairy shrimp that may require special management. Based on the life history, biology, and ecology of the species, and the habitat requirements for sustaining the essential life-history functions of the species, the Service determined that the PCEs and the associated PBFs essential to the conservation of the vernal pool fairy shrimp consist of four components (Service, 2006):

1. Topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described below in #2, providing for dispersal and promoting hydroperiods of adequate length in the pools.

2. Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a minimum of 18 days, in all but the driest years; thereby providing adequate water for incubation, maturation, and reproduction.

3. Sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-cell bacteria, algae, and dead organic matter, to provide for feeding.

4. Structure within the pools consisting of organic and inorganic materials, such as living and dead plants, rocks, and other debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass

The Service published a final rule on August 6, 2003 (Service, 2003), which was subsequently revised on August 11, 2005 (Service, 2005a), and again on February 10, 2006 (Service, 2006), designating approximately 136,312 ac of critical habitat for the San Joaquin Orcutt grass; 175,873 ac of critical habitat for the fleshy owl's clover; and 79,608 ac of critical habitat for the hairy Orcutt grass. Critical habitat for the San Joaquin Orcutt grass comprises six units spanning portions of five California counties while critical habitat for the fleshy owl's clover and hairy Orcutt grass is composed of six units each, spanning portions of seven California counties (Service, 2006).

Based on the life history, biology, and ecology of each species, and the habitat requirements for sustaining the essential life-history functions of each species, the Service determined that the PCEs and the associated PBFs essential to the conservation of the San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass consist of two components (Service, 2006):

1. Topographic features characterized by an isolated mound and inter-mound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in depressional features, including swales, that connect the pools described below in #2, and which provide for dispersal and promote hydroperiods of adequate length in the pools; and

2. Depressional features, including isolated vernal pools with underlying restrictive soil layers, that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote the germination, flowering, and seed production of predominantly annual native wetland species and that typically exclude both native and non-native upland plant species. Because the features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.

With the designation of critical habitat, the Service intends to conserve the geographic areas containing the PBFs that are essential to the conservation of each species through the identification of the appropriate quantity and spatial arrangement of the PCEs that are sufficient to support the life-history functions of the species. Because not all life-history functions require all of the PCEs, not all areas designated as critical habitat will contain all of the PCEs.

For a comprehensive assessment of the designation and status of critical habitat for the Central California tiger salamander, please refer to the *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population; Final Rule* (Service, 2005b); and for the vernal pool fairy shrimp and vernal pool plants, please refer to the *Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for Four Venal Pool Crustaceans and Eleven Vernal Pool Plants; Final Rule - Administrative Revisions* (Service, 2006). While there have been losses of critical habitat for each species since its designation, to date, no project has proposed a level of effects for which the Service has issued a biological opinion of DAM for critical habitat for the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, fleshy owl's clover, or hairy Orcutt grass.

Environmental Baseline

Within the action area, it is reasonably likely that the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, and their respective designated critical habitats, plus critical habitat for the fleshy owl's clover and hairy Orcutt grass have all been adversely affected by past and ongoing events, including: 1) the introduction of both transportation infrastructure like SR 41 and various local roads (e.g., Avenues 11, 12, and 15) and water conveyance structures (the Madera 6.2 Lateral Canal and Madera Canal), which have removed and fragmented previously contiguous habitat; 2) roadway- and vehicle-related risks, which likely have caused injury and mortality to the species, and are likely to continue to do so; and 3) conversions of once natural uplands and aquatic features through agricultural operations and development.

Within the action area, there are two federal actions that have already completed formal consultation with the Service and that have affected/continue to affect several of the same species and designated critical habitats described in this biological opinion: these are 1) Caltrans' proposed Madera Pools Mitigation Site Project (Service file number 1-1-07-F-0095, and as amended in Service file number 1-1-07-F-0247), which involved preserving existing on-site wetland habitat and restoring, enhancing, and creating additional on-site wetland habitats for the purpose of establishing a future mitigation bank with which to satisfy off-site compensatory mitigation for the effects from future transportation projects. The Madera Pools site is located on the east side of SR 41, just south of the Madera Lateral 6.2 Canal; and 2) the Tesoro Viejo Master Planned Community Development Project (Service file number 08ESMF00-2015-F-0982), which addresses several actions, including an additional point of water delivery on the Madera Lateral 6.2 Canal; land use authorizations associated with the County's activities within the U.S. Bureau of Reclamation's ROW; and a Section 404 Clean Water Act permit authorization in relation to the Tesoro Viejo Development involving the construction of new housing units as well as commercial, retail, office, public, and industrial spaces across approximately 1,600 ac. This large-scale development is situated east of SR 41 and predominantly south of Avenue 15. Within the action area, there also are two private actions that have already occurred on the landscape: 1) the disking of grassland habitat on the Rio Mesa 7 property (which contained documented breeding habitat for the Central California tiger salamander as well as documented occurrences of the vernal pool fairy shrimp). This property is located between the San Joaquin River and the southeast corner of SR 41 and Avenue 11, east of SR 41; and 2) the Riverstone Master Planned Community Development, which covers approximately 2,000 ac west of SR 41 and spans both sides of Avenue 12; construction here has already impacted,

and will continue to impact, areas previously occupied by pistachio, olive, almond, and citrus orchards.

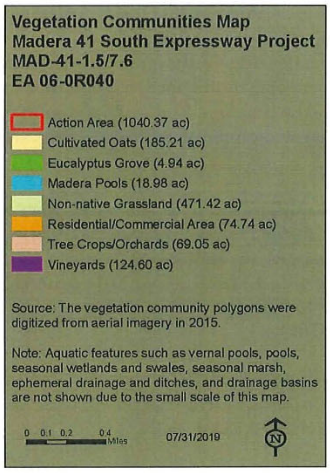
The action area encompasses a variety of different vegetation communities and habitat types (see Figure 2 and Table 4), but is composed predominantly of 471.42 ac of non-native grasslands (comprising approximately 45 percent of the action area); these lands are located primarily south of Avenue 12 on the east side of SR 41 and north of Avenue 15 on both sides of the highway. The action area also includes 74.74 ac of developed and undeveloped residential and commercial properties (containing landscaped and/or weedy species in some areas), which are situated on the west side of SR 41 between Avenues 10 and 12 and south of Avenue 15; agricultural lands (124.60 ac of vineyards, which are located on both sides of SR 41 south of Avenue 15; 69.05 ac of pistachio and olive orchards, which are situated on the west side of the highway to the north and south of Avenue 12; and 185.21 ac of cultivated oat fields, which are located on both sides of SR 41 between Avenue 12 and the Madera 6.2 Lateral Canal); and a 4.94 ac grove of densely planted eucalyptus trees (*Eucalyptus globulus*), which is located on the west side of SR 41 just south of the Madera Lateral 6.2 Canal. Although Madera Pools does not fall within the project footprint, 18.98 ac of the site are contained within the wider action area. The action area further includes 91.43 ac of existing highway hardscape/pavement.

The action area also encompasses a variety of aquatic features (see Table 5), including approximately 5 ac of vernal pools (comprising 158 features), which are dispersed patchily within the non-native grasslands; approximately 25 ac of seasonal wetlands and swales (comprising 111 wetlands and 111 swales), which are distributed irregularly within the grasslands and along the margins of some of the agricultural lands; approximately 0.40 ac of seasonal pools (comprising 10 features) - these features do not meet the criteria for being classified as either vernal pools or wetlands and are located within the grasslands, cultivated oat fields, and roadside areas (particularly those next to commercial properties); approximately 0.37 ac of seasonal marsh (comprising one feature) located in the eastern part of the grasslands on the north side of Avenue 15; approximately 0.57 ac of ephemeral drainages and ditches (comprising 13 drainages, most notably Root Creek and Little Dry Creek; and two ditches) - the drainages are located in grasslands in the southeastern and northern part of the action area, while the ditches are associated with agricultural activities and are concentrated along roadsides; approximately 3.87 ac of existing drainage basins (comprising five basins in total), which are located in a cultivated oat field on the east side of SR 41, north of Avenue 12; approximately 0.05 ac of culverts associated with the highway (comprising nine features); and approximately 3.36 ac of canals (comprising two features: the Madera Canal is an engineered, concrete-lined channel that crosses the northern part of the action area, north of Avenue 15, while the Madera Lateral 6.2 Canal is an engineered, partially concrete-lined channel that crosses the action area south of Avenue 15 and Road 204).

Table 4: Vegetation communities/habitat types within the action area

Habitat Type	Quantity (ac)	Percent of Action Area (%)
Non-native grasslands	471.42	45.3
Residential/Commercial	74.74	7.2
Vineyards	124.60	12.0
Tree Crops/Orchards	69.05	6.6
Cultivated Oat Fields	185.21	17.8
Eucalyptus Grove	4.94	0.50
Madera Pools	18.98	1.8
Highway/Paved	91.43	8.8
	1040.37	**100**

Figure 2: Impacts to vegetation communities/ habitat types within the action area (map prepared by Caltrans)



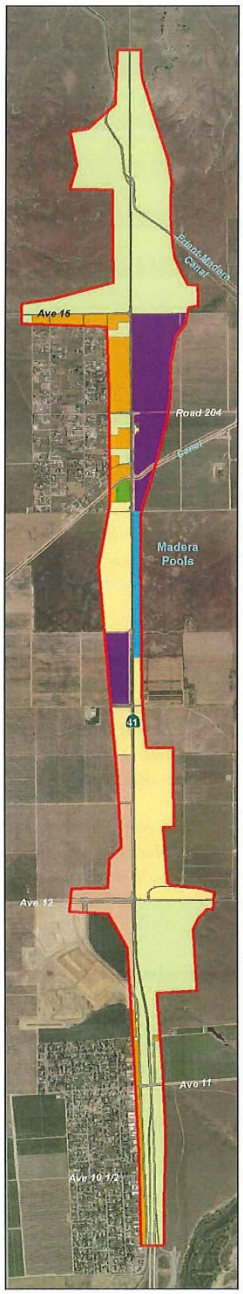


Table 5: Hydrological resources within the action area

Habitat Type	Quantity (ac)
Wetlands	
Seasonal wetland	10.86
Seasonal wetland swale	14.20
Seasonal marsh	0.37
Vernal pool	4.99
Pool	0.36
Total	**30.78**
Other Waters	
Canal	3.36
Culvert	0.05
Ditch	0.01
Drainage Basin	3.86
Ephemeral stream	1.60
Non-wetland channel	0.56
Total	**9.44**
GRAND TOTAL	**40.22**

Caltrans' existing ROW is the subject of routine roadside maintenance activities, including shoulder repairs and the annual application of herbicide (during the dry season) to areas within 5 ft. of the edge of the highway shoulder. Accordingly, much of the existing ROW is unlikely to provide suitable habitat for sensitive species because of these ongoing disturbances to vegetation and soil. The existing ROW comprises 101.13 ac of land, while the proposed ROW is made up of 321.98 ac of land; this equals 423.11 ac covering both the existing and proposed ROWs, i.e., the extent of Caltrans' project footprint.

The consultant, ECORP Consulting, Inc., conducted a delineation of wetlands and other waters from May 11-14, 2015. Due to changes in the project design after the completion of the 2015 delineation (the addition of five new detention basins), the subsequent consultant, H.T. Harvey & Associates, completed additional delineation field work on March 28-31, 2016; April 15, 2016; May 25-27, 31, 2016; June 2, 27, 2016; and July 17, 2016; Caltrans' biologists also carried out a delineation of wetlands and other waters on June 30, 2016.

Caltrans' biologists surveyed all parts of the project footprint with the exception of 1) the east side of SR 41 north of the Madera Canal up to the project's northern terminus, and 2) two commercial properties on the west side of SR 41 between Road 204 and Avenue 15.

Species Baseline

Central California tiger salamander

Within the action area, there is both suitable aquatic and upland habitat in which the Central California tiger salamander can breed, forage, shelter, migrate, and disperse. Suitable breeding habitat within the action area includes five existing drainage basins and two large vernal pools (VP-11 and VP-145), comprising 4.55 ac. Numerous other vernal pools, seasonal wetlands and swales, and seasonal marshes are expected to provide short-term stop-off habitat for any individuals migrating or dispersing through the area. However, even during years of average/above average rainfall, these features are unlikely to hold sufficient water for long enough to support successful breeding and metamorphosis. Caltrans therefore has identified these particular features as "temporary aquatic habitat;" altogether, they comprise 30.10 ac.

Given the presence of populations of California ground squirrels and other small mammals, abundant burrows are available for the Central California tiger salamander to use as refugia; upland and dispersal habitat within the action area consists of non-native grasslands, undeveloped residential and commercial lots, and some agricultural areas.

Caltrans' consultant, H.T. Harvey & Associates, conducted aquatic larval surveys for the Central California tiger salamander within the action area on March 9, 2016; the surveys focused on dip-netting and seining four water features (drainage basins #2, 3, 4, and 5) that were considered to be suitable habitat for the species and that held water for long enough to survey in that year; the consultant also focused on identifying and inspecting the entrances of California ground squirrel burrows near the basins that had potential to be used as refugia by the Central California tiger salamander. These burrows were located in upland habitat between the edges of the basins and up to a distance of 250 ft. from the edges. The consultant conducted a follow-up aquatic larval survey on April 19, 2016, which included the same four drainage basins surveyed previously in March, as well as two additional water features (VP-11 and VP-145). The consultant did not find any California tiger salamander juveniles or adults in the burrows, but did capture 14 larvae in drainage basin #4 and two larvae in drainage basin #5 during the March 2016 survey, as well as one larvae in drainage basin #4 during the April 2016 survey (for a total of 17 larvae).

Per the Service's Central CTS Recovery Plan, the action area is located within the Southern San Joaquin Recovery Unit and within the smaller-scale Little Table Mountain Management Unit (Service, 2017). According to the CNDDB (2019), there are 53 records of the Central California tiger salamander within 10 mi of the center of the project on SR 41; one of these is located within the action area and dates from 2016.

There is known breeding habitat for the species at Madera Pools; although only a small slice of the Madera Pools site is situated within the action area, the remaining portion of the site immediately adjoins it. The action area also is surrounded by suitable upland habitat through which the species can move and disperse, encompassing extensive non-native grasslands (particularly neighboring the northern end of the project) and agricultural areas containing small mammal burrows.
Because 1) the action area is located within the range of the species; 2) there is suitable aquatic and upland habitat available both within, and adjacent to, the action area that can support the species in its individual life stages (egg, larval, juvenile, and adult stages); and 3) there are known occurrences of the species (historical and more recent) located both within the action area and in relative proximity to it, the Central California tiger salamander occurs within the action area.

Vernal pool fairy shrimp

Within the action area, the vernal pools and seasonal wetlands and swales offer suitable habitat for the vernal pool fairy shrimp. Per the Service's Vernal Pool Recovery Plan, the action area is located within the Southern Sierra Foothills vernal pool region; part of the action area east of SR 41 is situated within the smaller-scale Madera Core Area (Service, 2005c).

According to the CNDDB (2019), there are 51 records of the vernal pool fairy shrimp within 10 mi of the project's center on SR 41; four of these are located within the construction footprint and date from 2004, 2016, and 2017. Caltrans' biologists conducted protocol-level surveys for the vernal pool fairy shrimp over multiple seasons, beginning November 8, 2004 through April 12, 2005; although these surveys were carried out for a different, separate project called the Madera Culverts Rehabilitation Project, four of the 12 pools sampled then are located within the current project's action area. Caltrans' biologists later conducted protocol-level surveys for the species during the 2014/2015 wet season in 24 pools (December 17-19, 23, 2014; January 7-8, 21, 2015;

February 4, 18, 2015; March 5-6, 18, 2015; and April 1, 2015), and during the 2015/2016 wet season in 33 pools (January 6-8, 19-21, 2016; February 2, 4-5,16-17,19, 2016; and March 1, 15-16, 30, 2016). An additional 16 pools, located in vernal pool fairy shrimp critical habitat, were delineated during the 2014/2015 wet season but not sampled in order to minimize the impacts to these areas; instead, Caltrans assumed that the species was present in these features. On August 20, 2015, the consultant, ECORP Consulting, Inc., conducted dry season surveys in 14 aquatic features (located outside of vernal pool fairy shrimp critical habitat) in which branchiopod species were not identified during the 2014/2015 wet season. They inspected the soil samples for large branchiopod eggs and identified to genus; further branchiopod identifications were carried out using genetic analysis at California State University, Los Angeles.

A total of 75 aquatic features were surveyed over the course of the 2004/2005, 2014/2015, and 2015/2016 wet seasons, and during the 2015 dry season. Of these, 61 features were located within the action area. An additional 11 features located outside of the action area also were included in the analysis due to their close proximity to the action area. This makes a total of 72 aquatic features comprising 4.44 ac. Caltrans detected the vernal pool fairy shrimp in 16 of these aquatic features (13 of which were located within the action area). Due to time constraints and the large scale effort required to survey, Caltrans' surveys focused on a subset of a much larger number of aquatic features located within the project footprint and the wider action area; accordingly, its surveys did not encompass all features present within the action area. However, Caltrans did identify and map all aquatic features.

Because 1) the action area is located within the range of the species; 2) there is suitable aquatic habitat available both within, and adjacent to, the action area that can support the species; and 3) there are known occurrences of the species located both within the action area and in relative proximity to it, the vernal pool fairy shrimp occurs within the action area.

San Joaquin Orcutt grass

The vernal pools, seasonal wetlands, and seasonal wetland swales situated within the action area also offer suitable habitat for the San Joaquin Orcutt grass, particularly north of Avenue 15 and south of Avenue 12 where acidic soil types typically associated with this plant, such as sandy loams and gravelly loams, are present in much of the non-native grasslands within the action area. According to the CNDDB (2019), there are 10 records of the plant within 10 mi of the project's center on SR 41; two of these are located within the action area and date from 1992 and 2017.

Caltrans' biologists, as well as biologists from ECORP Consulting, Inc., conducted botanical surveys during the appropriate blooming period for the species within all accessible parts of the action area on February 24-25, 2015; March 5, 2015; April 14-15, 2015; May 11-14, 2015; and June 15-18, 2015. They did not detect any individuals during the course of these surveys. However, the species was observed adjacent to the action area at Madera Pools when the site was used as a reference population in 2015. In May 2016, the species was observed incidentally within the action area by another consultant, H.T. Harvey and Associates, during a California Rapid Assessment Method survey. During this effort, the consultant found approximately 2,000 plants growing in VP-145, located within a cultivated oat field opposite to Madera Pools. Thousands of San Joaquin Orcutt grasses have been documented in this same oat field over the years, i.e., in 1986, 1992, and 2010 (CNDDB, 2019).

Because 1) the distribution of the species is restricted to the Southern Sierra Foothills vernal pool region and the project is located within this region (Service, 2005c); 2) there is suitable habitat for the species within the action area, and 3) there are numerous known occurrences of the plant

situated both within the action area and in proximity to it, the San Joaquin Orcutt grass occurs within the action area.

Critical Habitat Baseline

Central California tiger salamander critical habitat

Much of the southern, eastern half of the action area is situated within Unit 1b of designated critical habitat for the Central California tiger salamander. Unit 1b, in conjunction with Unit 1a, comprises the Millerton Unit in Madera County; the Millerton Unit as a whole is bounded to the west by SR 41, to the south and east by the San Joaquin River, and to the north by Road 204. Unit 1b is situated within the Southern Sierra Foothills vernal pool region and is composed of approximately 3,003 ac, all of which is private land. Of this total acreage, 170.71 ac of critical habitat lie within the action area; this encompasses approximately 5.7 percent of critical habitat Unit 1b.

Unit 1b is known to be occupied by the Central California tiger salamander given that five records for the species (presumed to be extant occurrences) exist within its boundaries (CNDDB, 2019). Unit 1b is essential to the conservation of the species because it is needed to maintain the current geographic and ecological distribution of the species within the Southern San Joaquin Geographic Region (Service, 2005b), and because it contains PCE 1 (breeding habitat), PCE 2 (upland habitat), and PCE 3 (dispersal habitat). The portion of the action area that is located within Unit 1b encompasses non-native grasslands and cultivated oat fields situated east of SR 41 at the southern end of the project extent; these grasslands and fields contain small mammal burrows that the Central California tiger salamander can use for shelter and for protection from predators and extreme weather conditions (PCE 2), and also enable the species to move and disperse across the landscape (PCE 3). And interspersed within this upland habitat is a mosaic of aquatic features that provide temporary use aquatic habitat for the Central California tiger salamander; however, none of these aquatic features actually serve as suitable breeding habitat, so there is no PCE 1 present within Unit 1b. Accordingly, the action area contains two of the three PCEs.

The PBFs in Unit 1b may require special management considerations due to urban development, agricultural conversion, and associated infrastructure including road construction; these types of activities are likely to have destroyed, degraded, or fragmented aquatic habitat essential for breeding and species development; upland habitat essential for feeding, sheltering, and resting; and habitat essential for dispersal and connectivity (Service, 2005b). Such activities within this unit are likely to be ongoing and will continue to adversely affect these habitats. Current activities in Unit 1b within the action area include livestock grazing as well as residential and commercial development; the latter activity includes part of the approximately 1,600 ac Tesoro Viejo Master-Planned Community Development Project. The Madera Pools site also lies within Unit 1b.

Vernal pool fairy shrimp critical habitat

The very northern part of the action area is located within Unit 24A (Madera County) of designated critical habitat for the vernal pool fairy shrimp. Unit 24A is situated within the Madera core area of the Southern Sierra Foothills vernal pool region and is composed of approximately 25,030 ac, almost all of which are private/local lands. Of this total, 298.18 ac of critical habitat lie within the action area; this encompasses approximately 1.2 percent of Unit 24A.

Unit 24A is known to be occupied by the vernal pool fairy shrimp given that 16 records for the species (presumed to be extant occurrences) exist within its boundaries (CNDDB, 2019). Unit 24A is essential to the conservation of the vernal pool fairy shrimp because it contains all four PCEs:

a topography featuring connected mounds, swales, and depressions (most notably vernal pools) within a matrix of upland habitat that allow for dispersal and adequate pool hydroperiods (PCE 1 and PCE 2), and sources of food and structural shelter within the vernal pools (PCE 3 and PCE 4); altogether, the four PCEs enable the vernal pool fairy shrimp to incubate, maturate, reproduce, feed, and shelter. The part of the action area that is located within Unit 24A at the northern end of the project extent, on both sides of SR 41, encompasses tracts of non-native grasslands with an interspersed mosaic of aquatic features (vernal pools, and seasonal wetlands and swales), some of which flow seasonally and provide hydroperiods of sufficient duration to support the reproduction and maturation of the vernal pool fairy shrimp; accordingly, the action area contains PCEs 1 and 2. The likelihood that PCEs 3 and 4 persist here is very high given that the species is known to occur on the project site and therefore must have adequate sources of food and shelter that enable them to survive and fulfill their lifecycle functions.

The PBFs in Unit 24A may require special management considerations due to the conversion of habitat to urban uses and intensive agriculture; hydrologic disruptions/modifications that disturb vernal pool habitats and restrict or isolate the distribution of water; livestock grazing, off-road recreational vehicle use, and the spread of invasive plants; these types of activities are likely to have already destroyed, degraded, or fragmented habitat essential for the species, and are likely to be ongoing and so will continue to adversely affect these habitats and their associated PBFs.

San Joaquin Orcutt grass critical habitat

Parts of the action area are located within Unit 3B of designated critical habitat for the San Joaquin Orcutt grass. These encompass non-native grasslands to the south of Avenue 12 and east of SR 41; cultivated oat fields situated south of Madera Pools on the east side of SR 41, as well as opposite to Madera Pools on the west side of the highway; a segment of the Madera Pools site; and non-native grasslands located north of Avenue 15 on both sides of SR 41. Unit 3B is composed of 29,159.75 ac of private/local lands. Of this total, 430.94 ac of critical habitat lie within the action area; this encompasses approximately 1.5 percent of Unit 3B.

Unit 3B is known to be occupied by the San Joaquin Orcutt grass given that five records for the species (presumed to be extant occurrences) exist within its boundaries (CNDDB, 2019). Unit 3B is essential to the conservation of the San Joaquin Orcutt grass because it contains both PCEs: topographic features characterized by mounds, swales, and depressions within a matrix of upland habitat that enable dispersal and adequate pool hydroperiods (PCE 1) and depressional features that become inundated long enough to promote germination, flowering, and seed production (PCE 2). Those parts of the action area that are situated within Unit 3B, particularly the non-native grasslands that comprise aquatic features interspersed across the landscape, contain both PCEs 1 and 2.

Fleshy owl's clover critical habitat

Substantial parts of the action area are located within Unit 4C of designated critical habitat for the fleshy owl's clover. These encompass non-native grasslands to the east of SR 41 (and a narrow segment extending west of SR 41) between Avenue 10 and Avenue 12; cultivated oat fields situated east of SR 41 and south of Madera Pools, as well as opposite to Madera Pools on the west side of SR 41; a segment of the Madera Pools site; vineyards situated north of the Madera 6.2 Lateral Canal on the east side of the highway; and non-native grasslands located north of Avenue 15 on both sides of SR 41. Unit 4C is composed of 38,038.51 ac of private/local lands. Of this total, 652.27 ac of critical habitat lie within the action area; this comprises approximately 1.7 percent of Unit 4C.

Unit 4C is known to be occupied by the fleshy owl's clover given that seven records for the species (presumed to be extant occurrences) exist within its boundaries (CNDDB, 2019). Unit 4C is essential to the conservation of the fleshy owl's clover because it contains both PCEs: topographic features characterized by mounds, swales, and depressions within a matrix of upland habitat that facilitate dispersal and adequate pool hydroperiods (PCE 1) and depressional features that become inundated long enough to promote germination, flowering, and seed production (PCE 2). Those parts of the action area that are situated within Unit 4C, particularly the non-native grasslands with seasonal water features punctuated across the landscape, contain both PCEs 1 and 2.

Hairy Orcutt grass critical habitat

Parts of the action area are located within Unit 6 of designated critical habitat for the hairy Orcutt grass. These encompass non-native grasslands located east of SR 41 (and a narrow segment extending west of SR 41) between Avenues 10 and 12; cultivated oat fields situated south of Madera Pools on the east side of SR 41, as well as opposite to Madera Pools on the west side of the highway; a segment of the Madera Pools site; and non-native grasslands located north of Avenue 15 on both sides of SR 41. Unit 6 is made up of approximately 27,033 ac of private/local lands. Of this total, 524.48 ac of critical habitat lie within the action area; this encompasses approximately 1.9 percent of Unit 6.

Unit 6 is known to be occupied by the hairy Orcutt grass given that four records for the species exist within its boundaries (three are presumed to be extant occurrences and one is possibly extirpated); additionally, one further record exists on the western boundary of the unit and is presumed to be an extant occurrence (CNDDB, 2019). Unit 6 is essential to the conservation of the hairy Orcutt grass because it contains both PCEs: topographic features characterized by mounds, swales, and depressions within a matrix of upland habitat that facilitate dispersal and adequate pool hydroperiods (PCE 1) and depressional features that become inundated long enough to promote germination, flowering, and seed production (PCE 2). Most parts of the action area that are situated within Unit 6, particularly the non-native grasslands across which exists a mosaic of seasonal aquatic features, contain both PCEs 1 and 2.

The PBFs in Units 3B, 4C, and 6 may require special management considerations due to the conversion of habitat to urban uses and intensive agriculture; hydrologic disruptions/modifications that disturb vernal pool and other aquatic habitats, and that restrict or isolate the distribution of water; livestock grazing, off-road recreational vehicle use, and the spread of invasive plants; many of these types of activities have already destroyed, degraded, and/or fragmented habitat essential for the San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass, and are likely to be ongoing; accordingly, such activities will continue to adversely affect these habitats and their associated PBFs.

Effects of the Action

Caltrans considers permanently affected habitats to include those habitats that either will be converted to another use, or that will have permanent structures/features constructed upon them; and temporarily affected habitats to include those habitats that can be returned to pre-project conditions within a limited number of seasons following the completion of construction. Within the 423.11 ac project footprint, Phase 1 of the project will result in the permanent loss of 140.82 ac of habitat due to cut and fill activities associated with the new roadway and its elevated profile, the construction of new detention basins, and the relocation of utilities; and in temporary disturbance to 58.0 ac of habitat stemming from vehicle/equipment staging, construction access, and the stockpiling of soils and other materials within the proposed ROW (see Table 6). Phase 2 of the

project will result in the permanent loss of 77.54 ac of habitat, also due to cut and fill activities associated with the new roadway and its elevated profile, and the relocation of utilities; and in temporary disturbance to 22.88 ac of habitat due to vehicle/equipment staging, construction access, and the stockpiling of soils and other materials within the proposed ROW. Altogether, this equals 299.24 ac (see Table 6). The remaining 123.87 ac within the 423.11 ac project footprint comprise: 1) areas that have already been, or will be, impacted by the neighboring Tesoro Viejo and Riverstone development projects prior to the start of Caltrans' road construction, as well as 2) nearly all of the existing ROW, which Caltrans determined does not provide habitat for the species, due in large part to existing disturbance within this area. The exception to this is a 0.79 ac segment situated adjacent to drainage basins # 3, 4, and 5 that will be permanently lost as a result of construction; Caltrans concluded that this particular area within the existing ROW does provide suitable habitat for the Central California tiger salamander given its contiguity to known breeding ponds.

Table 6: Effects to the project footprint* by construction phase

Project Stage	Permanent Effects (ac)	Temporary Effects (ac)	Totals (ac)
Phase 1	140.82	58.00	**198.82**
Phase 2	77.54	22.88	**100.42**
Totals (ac)	**218.36**	**80.88**	**299.24**

*Total footprint is 423.11 ac

Effects to Species

Central California tiger salamander

Habitat Loss and Disturbance: Within the project footprint, construction-related activities will result in the permanent loss of a total of 6.25 ac of aquatic habitat and in temporary disturbance to 3.39 ac of aquatic habitat for the Central California tiger salamander across both project phases (see Table 7). Within the project footprint, Caltrans has identified VP-145 and drainage basins #1-5 as features that the species either is known to use, or is likely to use for breeding. The other vernal pools, seasonal wetlands and swales, and seasonal marsh located both within the project footprint and outside of the project footprint (but still within the confines of the action area as defined under the Action Area heading in this document) are unlikely to have sufficiently long hydroperiods to support successful breeding, even in average/above average rain years. This conclusion is based on Caltrans' further observations and analysis of these features during the 2017/2018 and 2018/2019 wet seasons, during which the project site received above average rainfall in the 2018/2019 wet season. Although these features are unlikely to function as breeding habitat, Caltrans has indicated that they still have potential to provide temporary use habitat, particularly for those individuals that migrate or disperse through the area.

Construction work also will result in the permanent loss of 189.25 ac of upland habitat and in temporary disturbance to 71.53 ac of upland habitat for the species across both Phases 1 and 2 (see Table 7). Caltrans has identified non-native grasslands, undeveloped residential and commercial lots, and agricultural lands (comprising vineyards, pistachio and olive orchards, as well as cultivated oat fields) as providing suitable upland refugia and migration/dispersal habitats for the Central California tiger salamander. These lands contain ground squirrel and other small mammal burrows suitable for the species to use.

The permanent loss of aquatic and upland habitats due to roadway expansion and profile work will remove opportunities for the Central California tiger salamander to fulfill its life-cycle functions such as breeding, metamorphosing, feeding, seeking refugia, and migrating between burrows and breeding ponds during its different life stages. This in turn could lead to a reduction in the species'

success in finding mates and food, and in locating suitable burrows for protection, thereby diminishing both the reproductive success as well as the fitness of individuals in this area. Without these vernal pools, drainage basins, grasslands, undeveloped areas, and agricultural lands, individuals will need to seek out other suitable aquatic and upland habitats. Alternative locations that are located further afield will increase the amount of time in which an individual travels overland, which could increase its risk of exposure to predation as well as to the elements, thereby reducing the survivorship of individuals in this area. The temporary disturbance to both aquatic and upland habitats from construction will prevent the species from using these areas only in the short-term, i.e., for the duration of construction. Once work is completed, the habitat there will become available once again for the species, albeit potentially as lower quality habitat in its post-construction state; post-construction revegetation efforts to restore habitat value will serve to minimize the effects of this temporary disturbance.

Table 7: Effects to Central California tiger salamander habitat and to critical habitat PCEs

Project Stage	Impacts (ac)	Habitat Type						Totals
		Aquatic - Breeding	Aquatic - Breeding (critical habitat; PCE 1)	Aquatic - Temporary*	Aquatic - Temporary* (in critical habitat)**	Upland	Upland (critical habitat; PCEs 2 and 3)	
Phase 1	Permanent	3.71		1.09	0.38	89.21	40.06	134.45
	Temporary	0.23	-	0.27	2.37	27.88	26.36	**57.11**
	Indirect	0.40						**0.40**
Phase 2	Permanent	-	-	1.07	-	59.98	-	**61.05**
	Temporary			0.52		17.29		**17.81**
	Indirect	-	-	-	-	-	-	**-**
Totals (Phases 1+2)	Permanent	3.71		2.16	0.38	149.19	40.06	**195.50**
	Temporary	0.23	-	0.79	2.37	45.17	26.36	**74.92**
	Indirect	0.40						**0.40**
GRAND TOTALS (all habitat combined)	Permanent	**6.25**				**189.25**		**195.50**
	Temporary	**3.39**				**71.53**		**74.92**
	Indirect	**0.40**				**-**		**0.40**
								270.82

* Water features that provide temporary use habitat for individuals that migrate or disperse through the area, but which do not serve as suitable breeding habitat for the species.
**PCE 1 is not present

For those breeding ponds where direct effects will occur to at least 50 percent of their surface area, indirect effects are expected to occur to the remaining percent of their surface area. Accordingly, Caltrans has identified indirect effects to a total of 0.40 ac of aquatic breeding habitat for the Central California tiger salamander (see Table 7), comprising habitat outside of the project footprint. Parts of VP-145 and drainage basin #1 are located outside of the project footprint and so will not be affected directly by construction. However, these outside portions of the features are likely to be affected indirectly by the ground-disturbing activities that are set to occur within those parts of VP-145 and drainage basin #1 located inside the project footprint (e.g., grading, excavating, filling, paving, etc.). This work will reduce, over time, the suitability of the outside parts of these two features as breeding habitat for the species due to changes in the water regime (e.g., degradation of water quality; changes in the amount of water available; and changes in hydrology influencing the rate, extent, and duration of inundation); the reduction in the footprint of each aquatic feature; and consequently, in the amount of water that each feature is able to hold. Because VP-145 and drainage

basin #1 lie partially outside of the project footprint, they will not be eliminated completely by construction. But the entirety of each of these features will be adversely affected by the project.

As noted previously in the **Description of the Action** section, Caltrans has proposed a set of conservation measures, including the commitment to provide compensatory habitat as a condition of the action. This compensatory habitat is intended to minimize the effects on the Central California tiger salamander resulting from the permanent loss of a total of 195.50 ac of aquatic and upland habitats combined, from temporary disturbance to a total of 74.92 ac of aquatic and upland habitats combined, and from indirect effects to a total of 0.40 ac of aquatic habitat, as described above. The compensatory habitat proposed will be either in the form of conservation credits purchased at a conservation bank, or as part of a larger permittee-responsible mitigation effort, i.e., establishing conservation easements on appropriate land parcels. This component of the action will have the effect of protecting and managing lands for the species' conservation in perpetuity. The compensatory lands will provide suitable habitat for breeding, feeding, or sheltering, commensurate with, or better than, habitat lost and disturbed as a result of the proposed project. Providing this compensatory habitat as part of a relatively large, contiguous block of conserved land may contribute to other recovery efforts for the species.

Construction Activities: The likelihood is high that construction work will adversely affect the Central California tiger salamander. The County, in coordination with Caltrans, therefore will implement a variety of conservation measures to reduce the effects from these activities. Work crews will receive environmental awareness training and a Service-approved biologist(s) will conduct preconstruction visual surveys and monitor the site for the species, so the risk of construction crews or equipment running over, crushing, entombing, unearthing, or otherwise killing juvenile and adult Central California tiger salamanders situated either above- or below-ground during the course of initial groundbreaking and later construction, is less likely to occur (but cannot be discounted). Other proposed conservation measures, such as setting up silt fencing to preclude access to the work areas; and using appropriate erosion control materials, are all designed to minimize the risk of encountering individuals during construction. These measures are particularly important in terms of preventing individuals from becoming trapped, entangled, or otherwise confined, which could lead to prolonged exposure, desiccation, starvation, and/or dehydration.

Work that is scheduled to occur during the rainy season will involve a greater likelihood of encountering adults moving above-ground, as they migrate to and from their burrows in the uplands and the suitable breeding pools and basins within the project footprint and wider action area. Even work that is scheduled to occur during the dry season is likely to coincide with the peak periods in which juveniles leave their natal ponds for the first time and enter upland habitat in search of burrows (i.e., approximately May through July). So, even though conservation measures like conducting preconstruction visual surveys and placing exclusion fencing around the boundary of the project footprint will reduce this risk, there still remains some potential that construction personnel will encounter juveniles and/or adults inside the project footprint (even after the installation of the exclusion fencing), given that such individuals may still be hidden in underground refugia while these measures are implemented.

Burrow Excavation & Capture and Relocation: In the event of encounters between individuals and construction crews, equipment, and materials, the Central California tiger salamander may need to be captured and moved to an area(s) where it will not be adversely affected by project work (i.e., outside of the project footprint, but preferably as close as possible to its original capture location). Such individuals could experience further annoyance, distress, and even injury as a result of being handled during the capture and relocation process. However, the risk of these particular effects should be low given that a Service-approved biologist(s) will be on-hand to move the species

carefully and safely, and in accordance with the Relocation Plan. Individuals also may experience stress and disorientation at being moved to a different location and may prove reluctant to use new burrow sites, which will increase their risk of predation or desiccation. Generally, the survivorship of relocated wildlife is lower due to factors such as intraspecific competition, lack of familiarity with the locations of new breeding, feeding, and refugia habitats, and predation risk. However, given that any relocated individuals will be moved only far enough away so that they avoid immediate interactions with construction activities, equipment, and/or crews, these effects are expected to be minimal. Those Central California tiger salamanders that already inhabit the areas to which new individuals are relocated also are likely to experience a degree of stress and disruption, and even a reduction in fitness due to an increase in competition for resources like burrows and food.

Prior to the start of construction, burrows that are known to be occupied, or could be occupied by the Central California tiger salamander, may need to be excavated. Individuals could be injured or killed during this process (particularly if the excavation is carried out using mechanized equipment rather than by hand) as a result of improper excavation technique, handling, a lack of disease prevention measures, and improper transport of individuals. The County, in coordination with Caltrans, will prepare a Relocation Plan that sets out appropriate procedures and methodologies for undertaking excavation, capture, and relocation activities, while reducing the risk of adverse effects from such activities.

Lighting: The use of temporary artificial lighting during nighttime construction work could disturb adults and juveniles by interfering with their movement patterns in upland habitat, causing disorientation. Increased lighting at night also could attract predator species to the project site, which in turn could prey upon the Central California tiger salamander. However, given that lighting will be confined only to those areas located within the active construction footprint (to which the Central California tiger salamander should not have access due to the installation of exclusion fencing prior to the start of work) and will have shielding installed behind and underneath the light source, effects to the species resulting from the use of temporary artificial lighting will be minimal.

Barriers and Road Mortality: Injury and mortality are likely to occur to the Central California tiger salamander when individuals attempt to cross roads. SR 41 and local roads like Avenues 11, 12, and 15 already serve as existing barriers to movement and pose further hazards to the species in the form of vehicular strikes. Both the highway and local roadways will continue to be hazards for the Central California tiger salamander regardless of Caltrans' proposed expansion activities. Even so, the significant enlargement of SR 41 will exacerbate the existing risk to the species. By increasing the width of the highway hardscape, this will increase the distance across which an individual must travel, thereby increasing the amount of time the individual is exposed on the road surface, leading to an increase in the frequency of being struck by vehicles while crossing. Indirect injury and death of Central California tiger salamander are expected to increase incrementally over the lifetime of the expanded highway. Vehicular mortality remains a direct source of death for many amphibian species, and if sufficiently frequent in a given area, can result in reduced local abundance. Female mortality prior to breeding and laying eggs is especially detrimental as this can lead to reduced reproductive success and subsequent recruitment of new individuals into the population.

Vernal pool fairy shrimp

Within the project footprint, construction activities will permanently eliminate 3.82 ac of aquatic habitat for the species, and temporarily disturb 2.98 ac of aquatic habitat across both Phases 1 and 2 (see Table 8). Caltrans has identified numerous vernal pools, seasonal wetlands, and seasonal wetland swales as either occupied or suitable habitat in which the vernal pool fairy shrimp can reproduce, develop, and fulfill other basic life-cycle needs. Adult vernal pool fairy shrimp, as well as

their cysts, are likely to be crushed by construction equipment/vehicles as they drive through these aquatic features in which they live, and/or be killed by ground-disturbing activities involving the grading, excavating, and filling of pools. Cysts also could be transported in the wheels of construction vehicles and equipment to areas without suitable aquatic habitat where they would be unable to hatch. All of these activities ultimately will result in the fragmentation of and reduction in the amount and/or suitability of habitat available to the species in the area, and will lead to the death of both adults and cysts.

Table 8: Effects to vernal pool fairy shrimp habitat and to critical habitat PCEs

Project Stage	Impacts (ac)	Habitat		
		Aquatic*	Aquatic* (critical habitat PCEs 1-4)	Totals
Phase 1	Permanent	2.76	0.11	**2.87**
	Temporary	2.49	0.21	**2.70**
	Indirect	0.17	0.03	**0.20**
Phase 2	Permanent	0.27	0.68	**0.95**
	Temporary	0.05	0.23	**0.28**
	Indirect	0.23	0.26	**0.49**
Grand Totals (Phases 1+2)	Permanent	3.03	0.79	**3.82**
	Temporary	2.54	0.44	**2.98**
	Indirect	0.40	0.29	**0.69**

*Habitat includes 1) features in which the vernal pool fairy shrimp was identified during surveys; plus 2) features in which the vernal pool fairy shrimp is assumed to occur based on the following factors: habitat conditions, the presence of designated critical habitat, proximity to features where the vernal pool fairy shrimp was detected, the presence of other non-listed species of fairy shrimp that can co-occur with the vernal pool fairy shrimp, and/or the presence of a hydrologic connection (during years of average/above average rainfall) with features where the vernal pool fairy shrimp was detected.

For those vernal pools, seasonal wetlands, and seasonal wetland swales where direct effects will occur to at least 50 percent of their surface area, indirect effects are expected to occur to the remaining percent of their surface area. Accordingly, Caltrans has identified indirect effects to a total of 0.69 ac of vernal pool fairy shrimp habitat (see Table 8), covering habitat both within the project footprint (and overlapping with some temporarily affected areas; 25 features comprising 0.35 ac of habitat will be both temporarily and indirectly affected), and outside of the project footprint. A number of aquatic features lie partially within the project footprint and partially outside the project footprint; it follows that the parts of these feature that are located outside of the footprint will not be directly affected by construction activities. However, these outside portions will be affected indirectly by project work, i.e., their suitability and functionality as habitat for the vernal pool fairy shrimp are likely to decrease over time due to changes in the water regime (e.g., degradation of water quality; changes in the amount of water available to the perched water tables characteristic of vernal pool regions; and changes in hydrology influencing the rate, extent, and duration of inundation); the reduction in the footprint of each aquatic feature; and consequently, in the amount of water that each feature is able to hold. Such changes are expected to stem from the extensive ground-disturbing activities set to occur inside the project footprint (e.g., grading, excavating, filling, paving, etc.). Although these particular aquatic features will not be eliminated completely by construction, the entirety of each of these features will be adversely affected by the project.

Indirect effects to aquatic habitat may be reduced by a small degree (but certainly not eliminated) through the implementation of specific BMPs developed to address water quality and erosion. As noted previously in the **Description of the Action** section, Caltrans has proposed a set of conservation measures, including the commitment to provide compensatory habitat as a condition

of the action. This compensatory habitat is intended to minimize the effect on the vernal pool fairy shrimp resulting from the permanent loss of a total of 3.82 ac of aquatic habitat, from temporary disturbance to a total of 2.98 ac of aquatic habitat, and from indirect effects to a total of 0.69 ac of aquatic habitat, as described above. The compensatory habitat proposed will be either in the form of conservation credits purchased at a conservation bank, or as part of a larger permittee-responsible mitigation effort, i.e., establishing conservation easements on appropriate land parcels. This component of the action will have the effect of protecting and managing lands for the species' conservation in perpetuity. The compensatory lands will provide suitable habitat for breeding, feeding, and sheltering, commensurate with, or better than, habitat lost and disturbed as a result of the proposed project. Providing this compensatory habitat as part of a relatively large, contiguous block of conserved land may contribute to other recovery efforts for the species.

San Joaquin Orcutt grass

The project will result in the permanent loss of 3.04 ac of suitable habitat for the San Joaquin Orcutt grass, and in temporary disturbance to 2.83 ac of habitat across both Phases 1 and 2 (see Table 9). Ground-disturbing activities associated with constructing the expanded highway and the new detention basins (i.e., clearing, grubbing, grading, excavating, and filling) are likely to destroy, cover, or unearth individual plants and their seeds, leading to the removal of individuals within the project footprint and a subsequent decrease in local species abundance. By eliminating all suitable habitat and individuals within the project footprint, the species will no longer be able to carry out its basic life-cycle functions, such as germination, growth, flowering, and producing seed. The temporary disturbance to these aquatic features from construction will prevent the species from establishing in these areas only in the short-term, i.e., for the duration of construction. Once work is completed, the habitat there will become available once again for the species, albeit potentially as lower quality habitat in its post-construction state; post-construction revegetation efforts to restore habitat value will serve to minimize the effects of this temporary disturbance.

For those vernal pools, seasonal wetlands, and seasonal wetland swales where direct effects will occur to at least 50 percent of their surface area, indirect effects are expected to occur to the remaining percent of their surface area. Accordingly, Caltrans has identified indirect effects to a total of 0.65 ac of San Joaquin Orcutt grass habitat (see Table 9), covering habitat both within the project footprint (and overlapping with some temporarily affected areas; 25 features comprising 0.35 ac of habitat will be both temporarily and indirectly affected), and outside of the project footprint. A number of aquatic features are positioned partially within the project footprint and partially outside the project footprint; it follows that the parts of these feature that are located outside of the project footprint will not be directly affected by construction activities. However, these outside portions will be affected indirectly by project work, i.e., their suitability and functionality as habitat for the plant are likely to decrease over time due to changes in the water regime (e.g., degradation of water quality; changes in the amount of water available to the perched water tables characteristic of vernal pool regions; and changes in hydrology influencing the rate, extent, and duration of inundation); the reduction in the footprint of each aquatic feature; and consequently, in the amount of water that each feature is able to hold. Such changes are expected to stem from the extensive ground-disturbing activities set to take place inside the project footprint (e.g., grading, excavating, filling, paving, etc.). Although these particular aquatic features will not be eliminated completely by construction, the entirety of each of these features will be adversely affected by the project.

Table 9: Effects to San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass habitat and to critical habitat PCEs

Project Stage	Impacts (ac)	Species					
		San Joaquin Orcutt grass	San Joaquin Orcutt grass (critical habitat PCEs 1&2)	Fleshy owl's clover	Fleshy owl's clover (critical habitat PCEs 1&2)	Hairy Orcutt grass	Hairy Orcutt grass (critical habitat PCEs 1&2)
Phase 1	Permanent	0.13	1.84	0.19	1.78	0.13	1.84
	Temporary	1.04	1.46	0.03	2.47	-	2.49
	Indirect	0.003	0.18	0.02	0.17	0.003	0.18
Phase 2	Permanent	0.32	0.75	0.35	0.72	0.32	0.75
	Temporary	0.10	0.23	0.10	0.23	0.10	0.23
	Indirect	0.04	0.43	0.04	0.43	0.04	0.43
Totals (Phases 1+2)	Permanent	**0.45**	**2.59**	**0.54**	**2.50**	**0.45**	**2.59**
	Temporary	**1.14**	**1.69**	**0.13**	**2.70**	**0.10**	**2.72**
	Indirect	**0.04**	**0.61**	**0.06**	**0.60**	**0.04**	**0.61**
GRAND TOTALS*	Permanent	**3.04**		**3.04**		**3.04**	
	Temporary	**2.83**		**2.83**		**2.82**	
	Indirect	**0.65**		**0.66**		**0.65**	

*non-critical habitat + critical habitat combined
Note: effects are to vernal pools, seasonal wetlands, and seasonal wetland swales

Caltrans proposes to minimize effects to the San Joaquin Orcutt grass by implementing conservation measures such as transplanting individuals detected during preconstruction botanical surveys to a suitable location(s) outside of the project footprint, or collecting seed. Indirect effects to aquatic habitat outside of the project footprint may be reduced to a minor degree (but not eliminated) through the implementation of specific BMPs developed to address water quality and erosion.

As noted previously in the **Description of the Action** section, Caltrans has proposed a set of conservation measures, including the commitment to provide compensatory habitat as a condition of the action. This compensatory habitat is intended to minimize the effects on the San Joaquin Orcutt grass resulting from the permanent loss of a total of 3.04 ac of aquatic habitat, from temporary disturbance to a total of 2.83 ac of aquatic habitat, and from indirect effects to a total of 0.65 ac of aquatic habitat, as described above. The compensatory habitat proposed will be either in the form of conservation credits purchased at a conservation bank, or as part of a larger permittee-responsible mitigation effort, i.e., establishing conservation easements on appropriate land parcels. This component of the action will have the effect of protecting and managing lands for the species' conservation in perpetuity. The compensatory lands will provide suitable habitat for germinating, flowering, and producing seed, commensurate with, or better than, habitat lost and disturbed as a result of the proposed project. Providing this compensatory habitat as part of a relatively large, contiguous block of conserved land may contribute to other recovery efforts for the species.

Effects to Critical Habitat

Central California tiger salamander critical habitat

Phase 1 of the project will result in the permanent loss of a total of 40.06 ac of PCEs 2 and 3 for the Central California tiger salamander (upland and dispersal habitats), and in temporary disturbance to a total of 26.36 ac of PCEs 2 and 3 (see Table 7). Accordingly, a total of 66.42 ac of PCEs within

critical habitat Unit 1b will be affected (comprising 2.2 percent of the total 3,003 ac unit, which in turn makes up only one of the total 31 units designated for the species). This will preclude the species from feeding, seeking shelter and protection, and migrating/dispersing within this particular region of critical habitat. Phase 1 of the project also will result in the permanent loss of 0.38 ac, and in temporary disturbance to 2.37 ac of temporary use aquatic habitat within Unit 1b; however, none of these affected features hold sufficient water for long enough to support Central California tiger salamander breeding or metamorphosis and therefore do not contain PCE 1 (breeding habitat) for the species (see Table 7). Phase 2 of the project will not adversely affect any of the PCEs for the Central California tiger salamander.

The anticipated loss of, and disturbance to critical habitat containing PCEs 2 and 3, due to the proposed highway expansion and new detention basin work, will be relatively small in scale when compared to the amount of critical habitat comprising Unit 1b as a whole, and will be limited to the area east of SR 41, right at the western edge of the unit. Based on its small size and distribution within the much larger critical habitat Unit 1b, this loss of/disturbance to critical habitat is highly unlikely to fragment the unit or to diminish its conservation value. It is therefore expected to remain functional and to serve its role in the recovery of the species.

Caltrans' proposed compensatory mitigation, in the form of either the purchase of conservation credits, or the establishment of conservation easements through permittee-responsible mitigation, will be completed at a suitable, Service-approved location (to be determined at a later time) that possesses all three PCEs. This habitat will be managed to maintain or enhance the functionality of the PCEs for the benefit of the Central California tiger salamander.

Vernal pool fairy shrimp critical habitat

The project will result in the permanent loss of 0.79 ac of PCEs 1, 2, 3, and 4 for the vernal pool fairy shrimp (0.11 ac from Phase 1 and 0.68 ac from Phase 2); in temporary disturbance to 0.44 ac of PCEs 1, 2, 3, and 4 for the species (0.21 ac from Phase 1 and 0.23 ac from Phase 2); and in indirect effects to 0.29 ac of PCEs 1, 2, 3, and 4 for the species (0.03 ac from Phase 1 and 0.26 ac from Phase 2) (see Table 8). Accordingly, a total of 1.52 ac of PCEs within critical habitat Unit 24A will be affected (comprising 0.0061 percent of the total 25,030 ac unit, which in turn makes up only one of the total 35 units designated for the species). This will preclude the species from incubating, maturing, reproducing, feeding, and sheltering within this particular portion of critical habitat.

The anticipated loss of, and disturbance to critical habitat containing PCEs 1, 2, 3, and 4 due to the proposed highway expansion and new detention basin work, will be extremely small in scale when compared to the amount of critical habitat comprising Unit 24A as a whole. Based on the small size and distribution of impacts within the much larger critical habitat Unit 24A, this loss of/disturbance to critical habitat is highly unlikely to fragment the unit or to diminish its conservation value. It is therefore expected to remain functional and to serve its role in the recovery of the species.

Caltrans' proposed compensatory mitigation, in the form of either the purchase of conservation credits, or the establishment of conservation easements through permittee-responsible mitigation, will be completed at a suitable, Service-approved location (to be determined at a later time) that possesses all four PCEs. This habitat will be managed to maintain or enhance the functionality of the PCEs for the benefit of the listed crustaceans.

San Joaquin Orcutt grass critical habitat

The project will result in the permanent loss of 2.59 ac of PCEs 1 and 2 for the San Joaquin Orcutt grass (1.84 ac from Phase 1 and 0.75 ac from Phase 2); in temporary disturbance to 1.69 ac of PCEs 1 and 2 for the species (1.46 ac from Phase 1 and 0.23 ac from Phase 2); and in indirect effects to 0.61 ac of PCEs 1 and 2 for the species (0.18 ac from Phase 1 and 0.43 ac from Phase 2) (see Table 9). Accordingly, a total of 4.89 ac of PCEs within critical habitat Unit 3B will be affected (comprising 0.017 percent of the total 29,159.75 ac unit, which in turn, makes up only one of the total six units designated for the species). This will preclude the species from germinating, flowering, and producing seed within this particular portion of critical habitat.

The anticipated loss of, and disturbance to critical habitat containing PCEs 1 and 2 due to the proposed highway expansion and new detention basin work, will be extremely small in scale when compared to the amount of critical habitat comprising Unit 3B as a whole. Based on the small size and distribution of impacts within the much larger critical habitat Unit 3B, this loss of/disturbance to critical habitat is highly unlikely to fragment the unit or to diminish its conservation value. It is therefore expected to remain functional and to serve its role in the recovery of the species.

Caltrans' proposed compensatory mitigation, in the form of either the purchase of conservation credits, or the establishment of conservation easements through permittee-responsible mitigation, will be completed at a suitable, Service-approved location (to be determined at a later time) that possesses both PCEs. This habitat will be managed to maintain or enhance the functionality of the PCEs for the benefit of listed plants.

Fleshy owl's clover critical habitat

The project will result in the permanent loss of 2.50 ac of PCEs 1 and 2 for the fleshy owl's clover (1.78 ac from Phase 1 and 0.72 ac from Phase 2); in temporary disturbance to 2.70 ac of PCEs 1 and 2 for the species (2.47 ac from Phase 1 and 0.23 ac from Phase 2); and in indirect effects to 0.60 ac of PCEs 1 and 2 for the species (0.17 ac from Phase 1 and 0.43 ac from Phase 2) (see Table 9). Accordingly, a total of 5.80 ac of PCEs within critical habitat Unit 4C will be affected (comprising 0.015 percent of the total 38,038.51 ac unit, which in turn, makes up only one of the total six units designated for the species). This will preclude the species from germinating, flowering, and producing seed within this particular portion of critical habitat.

The anticipated loss of, and disturbance to critical habitat containing PCEs 1 and 2 due to the proposed highway expansion and new detention basin work, will be extremely small in scale when compared to the amount of critical habitat comprising Unit 4C as a whole. Based on the small size and distribution of impacts within the much larger critical habitat Unit 4C, this loss of/disturbance to critical habitat is highly unlikely to fragment the unit or to diminish its conservation value. It is therefore expected to remain functional and to serve its role in the recovery of the species.

Caltrans' proposed compensatory mitigation, in the form of either the purchase of conservation credits, or the establishment of conservation easements through permittee-responsible mitigation, will be completed at a suitable, Service-approved location (to be determined at a later time) that possesses both PCEs. This habitat will be managed to maintain or enhance the functionality of the PCEs for the benefit of listed plants.

Hairy Orcutt grass critical habitat

The project will result in the permanent loss of 2.59 ac of PCEs 1 and 2 for the hairy Orcutt grass (1.84 from Phase 1 and 0.75 ac from Phase 2); in temporary disturbance to 2.72 ac of PCEs 1 and 2 for the species (2.49 ac from Phase 1 and 0.23 ac from Phase 2); and in indirect effects to 0.61 ac of PCEs 1 and 2 for the species (0.18 ac from Phase 1 and 0.43 ac from Phase 2) (see Table 9). Accordingly, a total of 5.92 ac of PCEs within critical habitat Unit 6 will be affected (comprising 0.022 percent of the total 27,033 ac unit, which in turn, makes up only one of the total six units designated for the species). This will preclude the species from germinating, flowering, and producing seed within this particular portion of critical habitat.

The anticipated loss of, and disturbance to critical habitat containing PCEs 1 and 2 due to the proposed highway expansion and new detention basin work, will be extremely small in scale when compared to the amount of critical habitat comprising Unit 6 as a whole. Based on the small size and distribution of impacts within the much larger critical habitat Unit 6, this loss of/disturbance to critical habitat is highly unlikely to fragment the unit or to diminish its conservation value. It is therefore expected to remain functional and to serve its role in the recovery of the species.

Caltrans' proposed compensatory mitigation, in the form of either the purchase of conservation credits, or the establishment of conservation easements through permittee-responsible mitigation, will be completed at a suitable, Service-approved location (to be determined at a later time) that possesses both PCEs. This habitat will be managed to maintain or enhance the functionality of the PCEs for the benefit of listed plants.

Cumulative Effects

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

Conclusion

After reviewing the current status of the Central California tiger salamander, vernal pool fairy shrimp, and San Joaquin Orcutt grass, the environmental baseline for the action area, the effects of the proposed SR 41 South Expressway Project, and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the species. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species. This conclusion is based on the following reason: despite the large scale of this project and its effects on the landscape, the conservation measures proposed by the County, in coordination with Caltrans, will avoid, minimize, and mitigate for adverse effects to the species. Measures such as training construction personnel, implementing preconstruction surveys, installing exclusion fencing, and restricting work during rain events will serve to avoid and minimize the specific loss of, injury to, and impairment of individuals of the species. Additionally, proposed compensatory mitigation measures will off-set the loss of, and disturbance to, on-site habitats for the species. Because the range of each species variably extends across other parts of the San Joaquin Valley and is not restricted only to this particular project location, the resulting adverse effects of the project (reduced

by the aforementioned conservation measures) are not expected to appreciably diminish the likelihood of both the survival and recovery of the listed species in the wild by reducing their reproduction, numbers, or distribution.

After reviewing the current status of designated critical habitat for the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass, the environmental baseline for the action area, the effects of the proposed SR 41 South Expressway Project, and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to destroy or adversely modify designated critical habitat. The Service reached this conclusion because the project-related effects to the designated critical habitat, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding the function of the critical habitat to serve its intended conservation role for the species. This conclusion is based on the following reason: adverse effects to the critical habitat unit associated with each species (Unit 1b for the Central California tiger salamander, Unit 24A for the vernal pool fairy shrimp, Unit 3B for the San Joaquin Orcutt grass, Unit 4C for the fleshy owl's clover, and Unit 6 for the hairy Orcutt grass) will be nominal when measured against all critical habitat designated for each species as a whole (i.e., construction activities will affect only very small percentages of each critical habitat unit present, which in turn is only one unit out of the total units designated for each species). Therefore, since the adverse effects of the project on critical habitat for the species are extremely small and discrete relative to the entire area designated, they are not expected to appreciably diminish the value of the critical habitat or prevent it from sustaining its role in the conservation of the Central California tiger salamander, vernal pool fairy shrimp, San Joaquin Orcutt grass, fleshy owl's clover, and hairy Orcutt grass.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act that actually kills or injures wildlife. Harm is defined further to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by Caltrans so that they become binding conditions of any contract developed with the contractor for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to require its contractor to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the contract, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

Sections 7(b)(4) and 7(o)(2) of the Act, which refer to terms and conditions and exemptions on taking listed fish and wildlife species, do not apply to listed plant species. However, section 9(a)(2) of the Act prohibits removal, reduction to possession, and malicious damage or destruction of listed plant species on federal lands and the removal, cutting, digging up, or damaging or destroying of such species in knowing violation of any state law or regulation, including state criminal trespass law. Actions funded, authorized, or implemented by a federal agency that could incidentally result in the damage or destruction of such species on federal lands are not a violation of the Act, provided the Service determines in a biological opinion that the actions are not likely to jeopardize the continued existence of the species.

Amount or Extent of Take

Central California tiger salamander

It is infeasible for the Service to quantify the actual number of Central California tiger salamanders that will be taken as a result of the proposed action because the number of individuals in the action area is unknown, and estimates of population density in the action area are unavailable. Furthermore, the species is difficult to detect because it spends the majority of its life inhabiting underground burrows or other cover sites; it comes above-ground only for limited periods during nighttime rain events in the fall, winter, and spring; spends only short periods of its life, by comparison, in breeding ponds; and finding an injured or dead individual is unlikely due to the species' relatively small body size, rapid carcass deterioration, and likelihood that the remains will be removed by a scavenger. Although the Service cannot quantify the number of Central California tiger salamanders that will be incidentally taken within the action area (some of which is anticipated to go undetected), the Service anticipates that the number taken will be relatively low based on the fact that 1) most juveniles and adults are expected to be excluded from the active construction area prior to the start of work and so individuals are more likely to occur in non-affected neighboring aquatic and upland habitats outside of the project footprint during construction; and 2) the County, in coordination with Caltrans, will implement a series of conservation measures to reduce the potential for adverse effects to the species.

In instances in which the number of individuals that may be taken cannot be determined, the Service may quantify take in the amount of lost or disturbed habitat resulting from the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a surrogate for the species that will be taken. Accordingly, there is a risk of harm to, capture of, injury to, and mortality of all Central California tiger salamanders (in multiple life stages) occupying, using, or moving through the action area resulting from: 1) the effects to aquatic habitat (permanent loss of 6.25 ac; temporary disturbance to 3.39 ac; and indirect effects to 0.40 ac), and to upland habitat (permanent loss of 189.25 ac; and temporary disturbance to 71.53 ac), inclusive of any burrows and other cover/refugia features, which will impair their ability to breed, forage/feed, move, seek protection from predators, and find shelter; 2) interactions with construction crews and their equipment/materials, and with construction activities; and 3) burrow excavation, and capture and relocation efforts.

The Service therefore is exempting the following take incidental to the proposed action from the prohibitions described under section 9 of the Act:

1) The capture of all juvenile and adult Central California tiger salamanders within the project footprint;

2) The harm, injury to, and mortality of all Central California tiger salamander eggs and larvae within a total of 10.04 ac of suitable aquatic habitat within the action area;

3) The harm to all juvenile and adult Central California tiger salamanders within a total of 270.82 ac of suitable aquatic and upland habitats within the action area; and

4) The injury to, and mortality of, no more than seven juvenile or adult Central California tiger salamanders within the action area over the course of the project.

Because this project extends across a large footprint that is composed of, and surrounded by, suitable breeding and upland habitat for the species, and is in an area known to support the Central California tiger salamander, it is reasonably likely to expect that the species will be encountered during project activities and that more than one injury and/or mortality will occur in association with the project. However, since the Service cannot determine the actual number of individuals that will be incidentally taken for the reasons listed above, we based our exemption of seven injuries and/or mortalities on the analysis of a nearby linear project, the City of Fresno Raw Water Pipeline Project in Fresno County (pipeline project) (Service file number 81420-2008-F-1764-R002). The approximate centerpoint of the pipeline project is situated about 5 mi east of the SR 41/Avenue 12 intersection. We have made the assumption that the Central California tiger salamander population density at Caltrans' project site is likely to be relatively similar to that at the pipeline project site due to proximity of distance between the two and comparable habitat conditions. To date, one dead Central California tiger salamander has been detected during work on the pipeline project; because Caltrans' project footprint is approximately seven times larger than that of the pipeline project, the Service therefore anticipates that up to seven injured or dead individuals will be detected over the course of Caltrans' project-related activities (1 dead x 7=7 injured/dead Central California tiger salamanders).

In other words, if more than seven injured or dead juveniles or adults are detected by biological monitors or other project personnel, and/or more than a total of 270.82 ac of suitable aquatic and upland habitats are affected, then take has been exceeded and conservation measures and project implementation need to be re-evaluated and possibly modified, and Caltrans must reinitiate formal consultation.

Vernal pool fairy shrimp

It is infeasible for the Service to quantify the actual number of vernal pool fairy shrimp, including their cysts, that will be taken as a result of the proposed action because the number of individuals in the action area is unknown, and estimates of population density in the action area are unavailable. Furthermore, the species is difficult to detect because it is not possible to know how many cysts are present in the soil of any given water feature, or how many adult shrimp or cysts will occupy any given water feature at a later point in time; also, the species is subject to seasonal fluctuations in its numbers, and finding dead individuals is highly unlikely due to the species' extremely small body size. Although the Service cannot quantify the number of vernal pool fairy shrimp that will be incidentally taken, Caltrans will implement conservation measures to reduce the potential for adverse effects to the species.

In instances in which the number of individuals that may be taken cannot be determined, the Service may quantify take in the amount of lost or disturbed habitat resulting from the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a surrogate for the species that will be taken. Accordingly, there is a risk of harm to, and mortality of, all vernal pool fairy shrimp, including their cysts, occupying the action area resulting from: 1) the

permanent loss of 3.82 ac of suitable aquatic habitat, temporary disturbance to 2.98 ac of suitable aquatic habitat; and indirect effects to 0.69 ac of aquatic habitat; and 2) interactions with construction crews and their equipment/materials, and with construction activities.

The Service therefore is exempting the following take incidental to the proposed action from the prohibitions described under section 9 of the Act:

1) The harm to, and mortality of all vernal pool fairy shrimp and their cysts, within 7.49 ac of suitable aquatic habitat in the action area.

If more than a total of 7.49 ac of suitable aquatic habitat is affected, then take has been exceeded and conservation measures and project implementation need to be re-evaluated and possibly modified, and Caltrans must reinitiate formal consultation.

Upon implementation of the following reasonable and prudent measure, terms and conditions, and the aforementioned proposed conservation measures, incidental take of the Central California tiger salamander and vernal pool fairy shrimp associated with constructing the proposed project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the Central California tiger salamander or vernal pool fairy shrimp.

Reasonable and Prudent Measure

All necessary and appropriate measures to avoid or minimize effects on the Central California tiger salamander and vernal pool fairy shrimp resulting from implementation of this project have been incorporated into the project's proposed conservation measures. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the species:

1. All conservation measures, as described in the **Description of the Action** section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the terms and conditions below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans, the County, as well as any contractor acting on either Caltrans' or the County's behalf, must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. Caltrans shall include full implementation and adherence to the conservation measures as a condition of any contract issued for the project.

2. Prior to the start of construction for each phase, Caltrans shall provide the Service either with a copy of the completed bill of sale and payment receipt upon the purchase of conservation credits for the Central California tiger salamander, vernal pool fairy shrimp, and San Joaquin Orcutt grass; or with confirmation that the County, in coordination with

Caltrans, has recorded Service-approved conservation easements on appropriate parcels of land, and has established LTMPs and endowment accounts to fund long-term management and monitoring activities on the properties for the benefit of the Central California tiger salamander, vernal pool fairy shrimp, and San Joaquin Orcutt grass.

3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the proposed project is approached or exceeded, Caltrans shall adhere to the following monitoring and reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must reinitiate formal consultation per 50 CFR 402.16.

    a. For those components of the action that will result in habitat loss and disturbance whereby incidental take in the form of harm is anticipated, Caltrans shall provide to the Service, prior to the start of construction on each phase, a precise and updated accounting of the total acreage of habitat to be impacted for that phase in order to confirm that ground disturbance does not exceed what is described in this biological opinion.

    b. Caltrans shall immediately contact the Service's Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6544 to report direct encounters between listed species and project workers and their equipment/materials whereby incidental take in the form of harm, injury, or death occurs. If the encounter occurs after normal working hours, Caltrans shall contact the SFWO at the earliest possible opportunity the next working day.

    c. In the event that injured or killed individuals of the listed species are found (regardless of whether or not incidental take has been exceeded), Caltrans and the County shall follow the steps outlined in the **Salvage and Disposition of Individuals** section below.

    d. For those components of the action that will require the capture and relocation of listed species, Caltrans shall immediately contact the SFWO to report the activity. If capture and relocation efforts need to occur after normal working hours, Caltrans shall contact the SFWO at the earliest possible opportunity the next working day.

    e. A final post-construction report detailing compliance with the project design criteria and proposed conservation measures described under the **Description of the Action** section of this biological opinion shall be provided to the Service within 90 calendar days of completion of the project. The report shall include: (1) dates of project groundbreaking and completion; (2) pertinent information concerning the success of the project in meeting the conservation measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on the species, if any; (5) observed incidents of harm or injury to the species, if any; and (6) any other pertinent information.

Salvage and Disposition of Individuals

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist(s) associated with the project. Dead individuals must be sealed in a re-sealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it; the bag containing the

specimen must be frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the San Joaquin Valley Division Chief of the Endangered Species Program at the SFWO at (916) 414-6544.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:

1. Using the appropriate data sheets, the Service-approved biologist(s) should report sightings of any Central California tiger salamanders, vernal pool fairy shrimp, San Joaquin Orcutt grass, or other listed species to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location in which the animal/plant was observed also should be provided to the Service.

2. Caltrans should assist the Service in implementing recovery actions identified in the 2017 Central CTS Recovery Plan and the 2005 Vernal Pool Recovery Plan by reviewing the document's recovery goals, objectives, and criteria, and identifying activities that could be incorporated into Caltrans' proposed projects, and successfully implemented.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the SR 41 South Expressway Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required and shall be requested by the federal agency or by the Service where discretionary federal agency involvement or control over the action has been retained or is authorized by law and:

(a) If the amount or extent of taking specified in the incidental take statement is exceeded;

(b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

(c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or

(d) If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have questions, please contact Jen Schofield (jen_schofield@fws.gov), or Patricia Cole (patricia_cole@fws.gov) at the letterhead address, by e-mail, or at (916) 414-6544.

Sincerely,

Jennifer M. Norris, Ph.D.
Field Supervisor

cc:
Steven Hulbert, California Department of Fish and Wildlife, Fresno, California

Literature Cited

California Department of Transportation (Caltrans). 2017. Construction Site Best Management Practices (BMP) Manual. www.dot.ca.gov/hq/construc/stormwater/CSBMP-May-2017-Final.pdf. May 2017. 304 pp.

California Natural Diversity Database. 2019. Natural Heritage Division, California Department of Fish and Wildlife. RareFind 5. Sacramento, California. Accessed April 24-25 and July 9 & 23, 2019.

U.S. Fish and Wildlife Service. 2003. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Final Rule. 68 Federal Register 46684-46867.

_____2005a. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation of Economic Exclusions from August 2003 Final Designation; Final Rule. 70 Federal Register 46924-46999.

_____2005b. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population; Final Rule. 70 Federal Register 49380-49458.

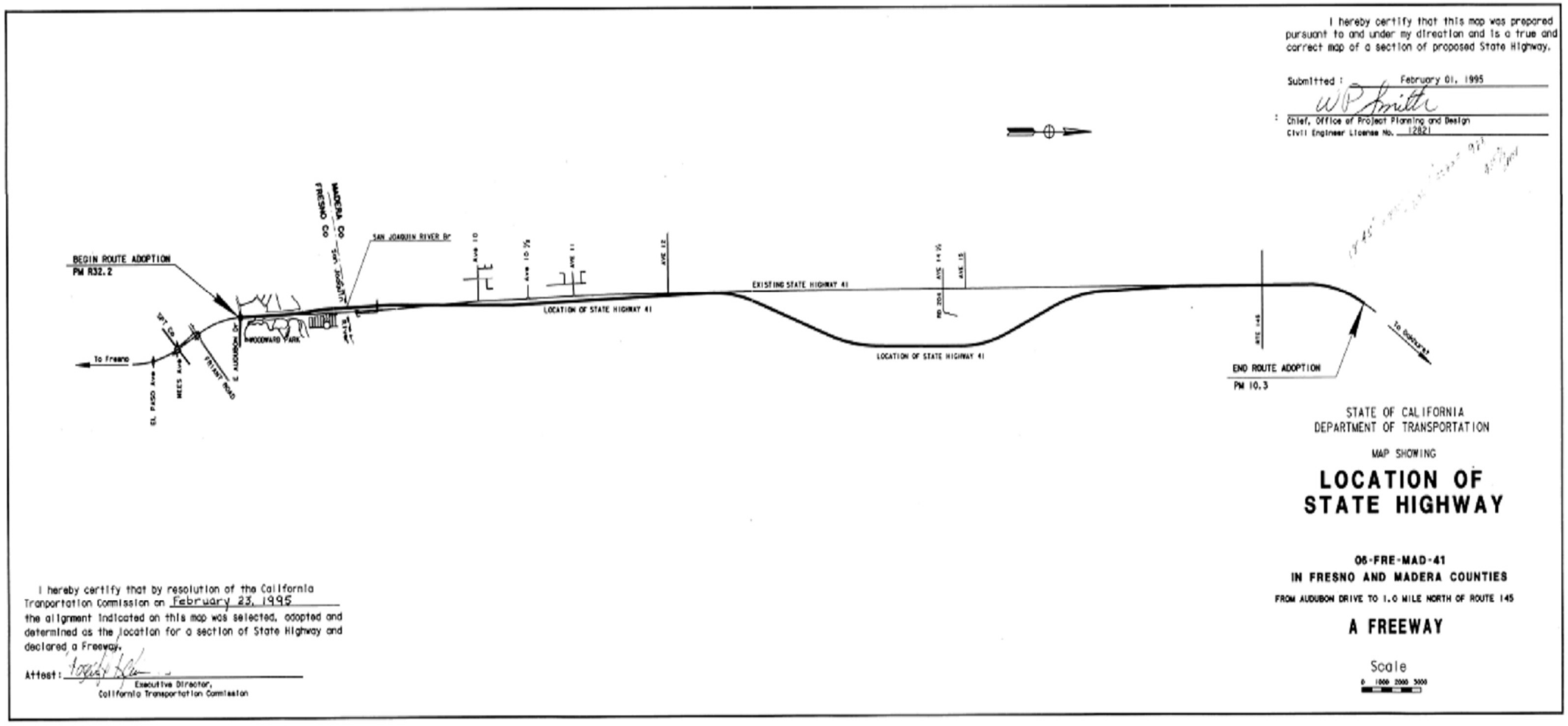
_____2005c. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxvi + 606 pp.

_____2006. Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for Four Venal Pool Crustaceans and Eleven Vernal Pool Plants; Final Rule – Administrative Revisions. 71 Federal Register 7118-7316.

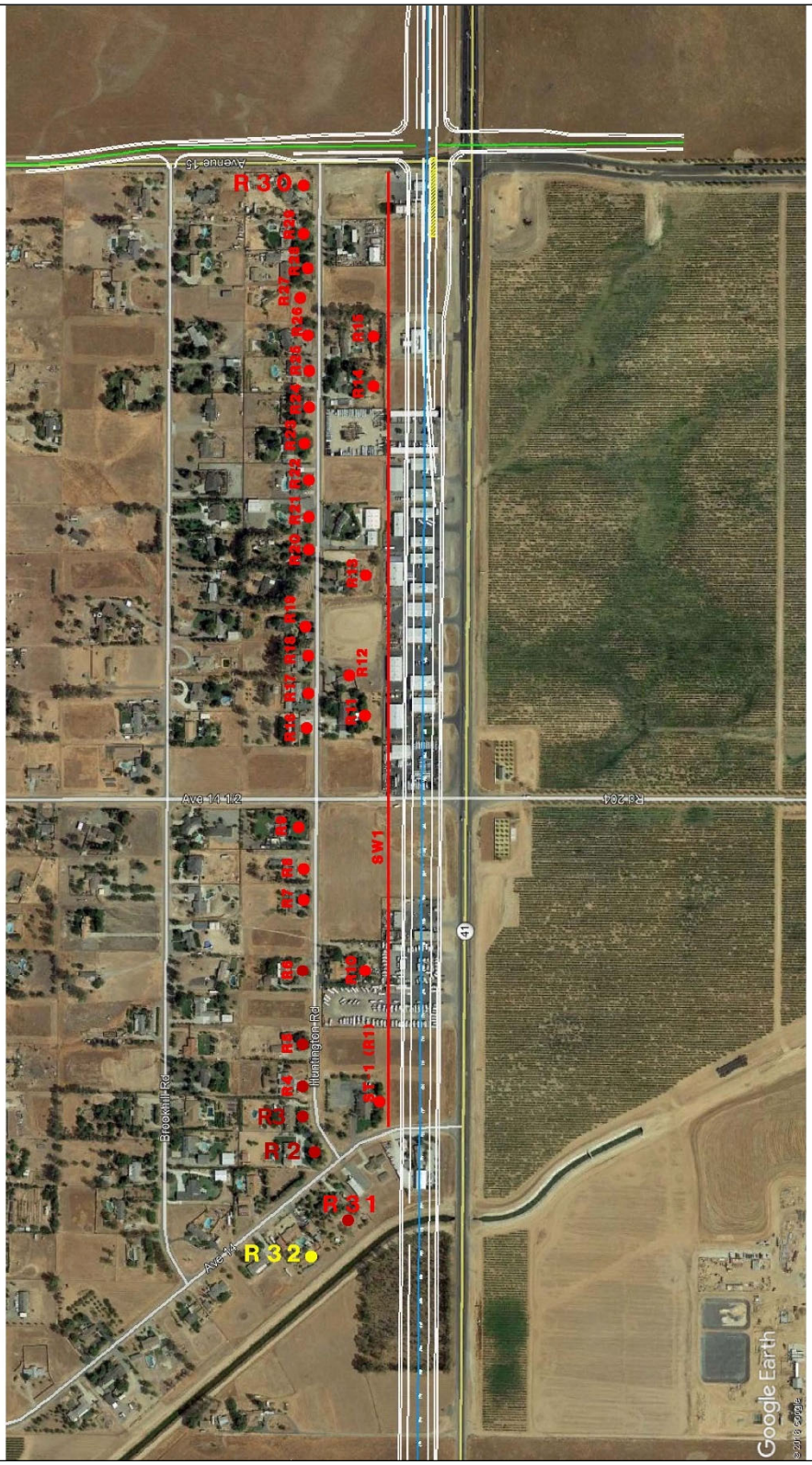
_____2007. Vernal Pool Fairy Shrimp *(Branchinecta lynchi)* 5 Year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. 76 pp.

_____2010. San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. 121 pp.

_____2017. Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander *(Ambystoma californiense)*. U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. v + 69 pp.


I hereby certify that this map was prepared pursuant to and under my direction and is a true and correct map of a section of proposed State Highway.
Submitted : February 01, 1995
Chief, Office of Project Planning and Design
Civil Engineer License No. (282)
BEGIN ROUTE ADOPTION
PM R32.2
To Fresno
EL PASO Ave
MEES Ave
TRIANT ROAD
UPT CO
AUDUBON DR
WOODWARD PARK
MADERA CO
FRESNO CO
SAN JOAQUIN RIVER Br
Ave 10
Ave 10 ½
AVE 11
AVE 12
LOCATION OF STATE HIGHWAY 41
EXISTING STATE HIGHWAY 41
AVE 14 ½
AVE 15
RD 200
LOCATION OF STATE HIGHWAY 41
AVE 145
END ROUTE ADOPTION
PM 10.3
To Oakhurst
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
MAP SHOWING
LOCATION OF STATE HIGHWAY
05-FRE-MAD-41
IN FRESNO AND MADERA COUNTIES
FROM AUDUBON DRIVE TO 1.0 MILE NORTH OF ROUTE 145
A FREEWAY
Scale
0 1000 2000 3000
I hereby certify that by resolution of the California Tranportation Commission on February 23, 1995 the alignment indicated on this map was selected, adopted and determined as the location for a section of State Highway and declared a Freeway.
Attest:
Executive Director,
California Transportation Commission

Appendix L Noise Receptor Map



Appendix M Air Quality Conformity

U.S. Department of Transportation
Federal Highway Administration

Federal Highway Administration
California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (fax)

September 23, 2019

In Reply Refer To:
HDA-CA

Sharri Bender Ehlert, Director
California Department of Transportation
District 6
855 M Street, Suite 200
Fresno, CA 93721

Attention: Maya Hildebrand

Dear Ms. Bender Ehlert:

SUBJECT: Project Level Conformity Determination for the State Route 41 Expressway Project (CTIPS ID # 221-0000-0394/0395)

On August 28, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a complete request for a project level conformity determination for the State Route 41 Expressway Project. The project is in an area that is designated Non-Attainment or Maintenance for Ozone and Particulate Matter (PM_{10}, $PM_{2.5}$).

The project level conformity analysis submitted by Caltrans indicates that the project-level transportation conformity requirements of 40 CFR Part 93 have been met. The project is included in the Madera County Transportation Commission's (MCTC) current Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP), as amended. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

As required by 40 CFR 93.116 and 93.123, the localized $PM_{2.5}$ and PM_{10} analyses are included in the documentation. The analyses demonstrate that the project will not create any new violations of the standards or increase the severity or number of existing violations.

Based on the information provided, FHWA finds that the State Route 41 Expressway Project conforms with the State Implementation Plan (SIP) in accordance with 40 CFR Part 93.

If you have any questions pertaining to this conformity finding, please contact Joseph Vaughn at (916) 498-5346 or by email at Joseph.Vaughn@dot.gov.

Sincerely,

Tashia J. Clemons
Director, Planning and Environment

Appendix N State Office of Historic Preservation Concurrence Letter

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

March 1, 2016 Reply To: FHWA_2015_1207_001

Jeanne Day Binning, Ph.D., Chief
Central California Cultural Resources Branch
Caltrans District 6
855 M Street
Fresno, CA 93721

Re: Determinations of Eligibility for the Proposed Madera State Route 41 South Expressway Project, Madera County, CA

Dear Ms. Binning:

Thank you for consulting with the State Historic Preservation Officer (SHPO) about the subject undertaking in accordance with the January 1, 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, 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).

Caltrans, in cooperation with the County of Madera, proposes improvements to SR 41 in Madera County from PM R1.57 to PM R7.6. The proposed project would improve traffic circulation, address safety concerns, and provide a transportation facility consistent with Caltrans Standards. A full project description and depiction of the Area of Potential Effects (APE) can be found on pages one through two and Figure 3 of the HPSR.

Caltrans has determined that Bridge No. 41-0039 is not eligible for the National Register of Historic Places (NRHP) due to a loss of integrity. Caltrans has also found the Madera Canal and Lateral 6.2 eligible for the NRHP under criterion A as components of the Central Valley Project. Based on my review of the submitted documentation I concur with the foregoing determinations .

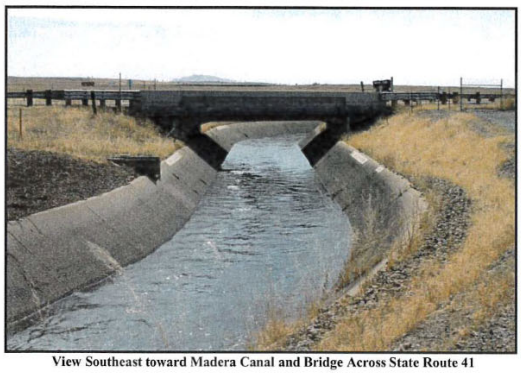
If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or Alicia Perez at (916) 445-7020.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Appendix O Finding of Effect

FINDING OF NO ADVERSE EFFECT
FOR THE
MADERA 41 SOUTH EXPRESSWAY
PROJECT, MADERA COUNTY, CALIFORNIA
06-MAD-041, PM R1.5/7.6
EA: 06-0R040
Project I.D. 06 1300 0309



View Southeast toward Madera Canal and Bridge Across State Route 41

Prepared for:

John Thomas, Acting Branch Chief
Southern San Joaquin Valley Cultural Resources Branch
California Department of Transportation, District 06
855 M Street, Suite 200, Fresno, California 93721

Prepared by:

Jon L. Brady, M.A.
Principal Architectural Historian (PQS)
Southern San Joaquin Valley Cultural Resource Branch
California Department of Transportation, District 06
Fresno, California

June 2019

Executive Summary

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), is proposing to construct a four-lane divided expressway with controlled access extending from the existing terminus of the four-lane expressway from the Fresno metropolitan area to north of Avenue 15 in Madera County (Figure 1 and 2). The project will be constructed in two phases. The proposed project is located on State Route 41 in Madera County, California between post miles (PM) 1.5 to 7.6. The purpose of this Finding of Effect (FOE) is to comply with applicable sections of the National Historic Preservation Act (NHPA) and the implementing regulations of the Advisory Council on Historic Preservation (ACHP) as these pertain to analyzing the effects of federally funded undertakings on historic properties.

Compliance with Section 106 is being carried out in accordance with the January 2014, *First Amended Programmatic Agreement Among the Federal Highway Administration, 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* (Section 106 PA).

Caltrans, as part of its identification efforts, has identified one contributing component, the Madera Canal and associated feature Madera Canal Lateral 6.2 (hereafter Lateral 6.2), within the project Area of Potential Effects (APE) (Figure 3, Appendix A). The Madera Canal and Lateral 6.2 are eligible to National Register of Historic Places under Criterion A as a contributor to the Central Valley Project, a historic property. The State Historic Preservation Officer (SHPO) concurred in a letter dated March 1, 2016 (Attachment C).

Caltrans, in applying the criteria of adverse effect, proposes a **Finding of No Adverse Effect Without Standards Conditions** is appropriate and is seeking SHPO's concurrence in this finding, pursuant to the Section 106 PA Stipulation X.B.2(a) and 36 Code of Federal Regulations (CFR) 800.5(c). Phase 1 construction activities will minimally impact Lateral 6.2 at PM 5.7. This will include the removal of the drop structure under SR 41 and replacing it with two 82-inch drain pipes that will extend four hundred and eighty-six feet (this includes sixty-five feet of current right-of-way [ROW] and four hundred and twenty-one feet of new ROW. The placement of the drain pipes will also impact approximately two hundred and fifty feet of the earthen lateral west of SR 41 (refer to Figure 2A on page 5 of this document and Figure 3 at Appendix A). Phase 2 construction activities will also minimally impact the Madera Canal at PM 6.917 on SR 41 (Figure 2B on Page 6). To accommodate a four-lane conventional highway, three thousand feet of the original canal will need to be realigned (Figure 5 at Appendix A).

To ensure that project activities will not change and result in an adverse effect, Caltrans will ensure that: A Caltrans Principal Architectural Historian will review construction plans at 60 percent and 95 percent constructability reviews as well as monitor construction activities at Madera Canal Lateral 6.2 and where the Madera Canal intersects SR 41 as designated on the APE map (Figure 3, Appendix A).

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I. Description of Undertaking

The California Department of Transportation, in cooperation with the County of Madera, proposes improvements to State Route 41 in Madera County from 0.8 miles south of the Avenue 11 undercrossing to 1.4 miles north of Avenue 15 (PM R1.5/7.6 [see Figures1 and 2]).

The proposed project would construct a divided four-lane expressway with controlled access that can be expanded to a freeway as traffic volumes increase and funding becomes available. The width of the expressway alignment would be approximately 300 feet with a 94-foot median. The total length of the project is approximately 6.0 miles. Originally four alternatives were considered.

Two build alternatives (Alternative 2 and Alternative 4) and a no-build alternative are now under consideration. Both build alternatives include new crossings at the Madera Canal (Figure 2B) and Lateral 6.2 Canal (Figure 2a). Additionally, both alternatives would require additional frontage roads, controlled access structures, and utility relocations. Currently, all planned intersections are at grade; however, right-of-way for a future freeway interchange at Avenue 15, including 0.5 miles of transition infrastructure, is being acquired for this project. The build alternatives would require the construction of five water basins to depths between 5 to 23 feet.

The alignment for Alternative 2, also known as the East Alignment, begins at Avenue 12 and curves roughly to the west of the existing State Route 41 to avoid a biological mitigation parcel developed to mitigate environmental impacts of local highway projects. The Alternative 2 alignment crosses the existing State Route 41 near the Madera Lateral 6.2 Canal south of Avenue 14 and continues north roughly 700 feet to the east side of the existing State Route 41 at Avenue 15. After crossing the Madera Canal north of Avenue 15, alternative Alignment 2 turns to the west and transitions back into the existing State Route 41.

Alternative 4, also known as the Existing Alignment, would use most of the existing highway corridor and existing right-of-way. The new alignment would be constructed primarily on the west side of existing State Route 41 but would transitioning to the east, into the existing State Route 41, north of the Madera Canal. Avenue 15 would be realigned slightly to the north to feed a planned residential development.

The No-build Alternative would keep State Route 41 in its existing condition and routine maintenance projects would continue.

In August of 2017, Alternative 4 was adopted by the Caltrans Project Development Team as the recommended preferred alternative. Furthermore, as there were monetary issues, the original project has been split into two phases, Phase 1 and Phase 2. Madera County will be the implementing agency for the Design, Right of Way and Construction phases of Phase 1. Caltrans will perform independent quality assurance Oversight. Madera County would begin final design prior to environmental clearance, therefore Madera County will be conducting at-risk design. The second phase will be included in the Regional Transportation Plan as a long-range project, implemented in a 20-year horizon. When the Design phase for the North Segment (Phase 2) commences, project level environmental clearance will be required at that time.

Phase 1 will consist of constructing a combination of expressway at the south end and a conventional highway to the north on State Route 41 between post miles (PM) 3.2 and 6.6. The expressway will extend from the beginning project limits to approximately one-half mile south of Avenue 14. From this point, the facility will transition into a four-lane conventional highway and will extend north of the signalized intersection at Avenue 15. The facility will transition back to a two-lane conventional highway approximately 0.4 miles north of the intersection. The conventional highway is an interim facility until Phase 2 is constructed and upgrades it to expressway standards. The median will be raised therefore, only

the southbound roadway portion of the conventional highway will have access to the businesses located to the west of State Route 41. There will also be three northbound left-turn pockets on State Route 41 to accommodate turning movements at Avenue 14, Avenue 14 ½ and approximately ¼ mile south of Avenue 15. A southbound left-turn pocket will be located at Road 204. The median will be wide enough to allow U-turns at these turn pockets. A two-lane undercrossing at Avenue 11 will also be constructed for the southbound roadway.

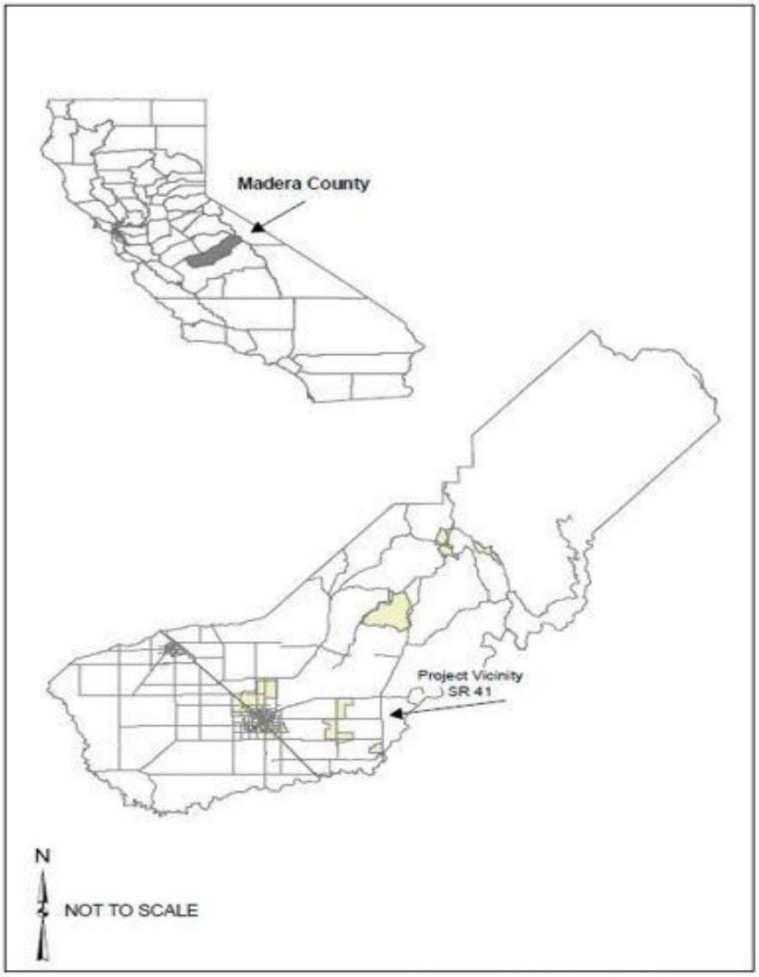
Project related construction activities for Phase 1 include:

- Clearing and grubbing;
- Constructing a new undercrossing at Avenue 11;
- Placement of two 84-inch diameter pipe culverts at Lateral 6.2 to provide a wider roadway;
- Complete grading and earthwork in the road prism;
- Complete roadway paving for the propose southbound roadway and a portion of northbound roadway near Avenue 12;
- Traffic will be shifted onto the new pavement to allow work on the northbound roadway;
- And, finally, once the northbound roadway is completed work in the median between Avenue 14 and Avenue 15 will commence;
- Once median work is completed, traffic would then be shifted to its ultimate location and the project is complete.

The limits of Phase 2 extend on State Route 41 in Madera County from Avenue 12 to 1.4 miles north of Avenue 15 (PM 3.2/7.6). As part of Phase 2 improvements, the North Segment will consist of constructing a four-lane expressway on a combination of new pavement and pavement that is constructed as part of the Middle Segment. The median will be wide enough to accommodate a six-lane facility in the future. The expressway will extend from Avenue 12 to just north of Avenue 15, where it will transition into the existing two-lane conventional highway 1.4 miles north of Avenue 15.

Project related construction activities associated with Phase 2 include:

- Removal of existing vegetation and surface soils adjacent to the existing roadway without impacting traffic;
- Some locations would include removal of surface soils and subsurface soils;
- Realignment Madera Canal;
- Place box culvert in realigned portion of canal within Caltrans ROW;
- Grading and earthwork in the roadway prism will be completed, then paving operations for most of the northbound roadway from 0.7 mile north of Avenue 14 to the end of the project limits. This would include paving most of the southbound roadway from 0.5 mile south of Avenue 14 to the end of the project limits;
- Once the bulk of paving operations has been completed, a series of traffic shifts and pavement work would be implemented from the beginning of the project limits to 1.0 mile north of Avenue 12;
- And, similarly, traffic shifts and pavement work would occur at the end of the project limits to tie in the new four-lane expressway with the two-lane conventional highway to the north of the project limits.



District EA: 06-0R040_
Project ID: 06 1300 0309

Figure 1
Project Vicinity
06-MAD-41
Post Mile 1.5/7.6
Madera 41 South Expressway

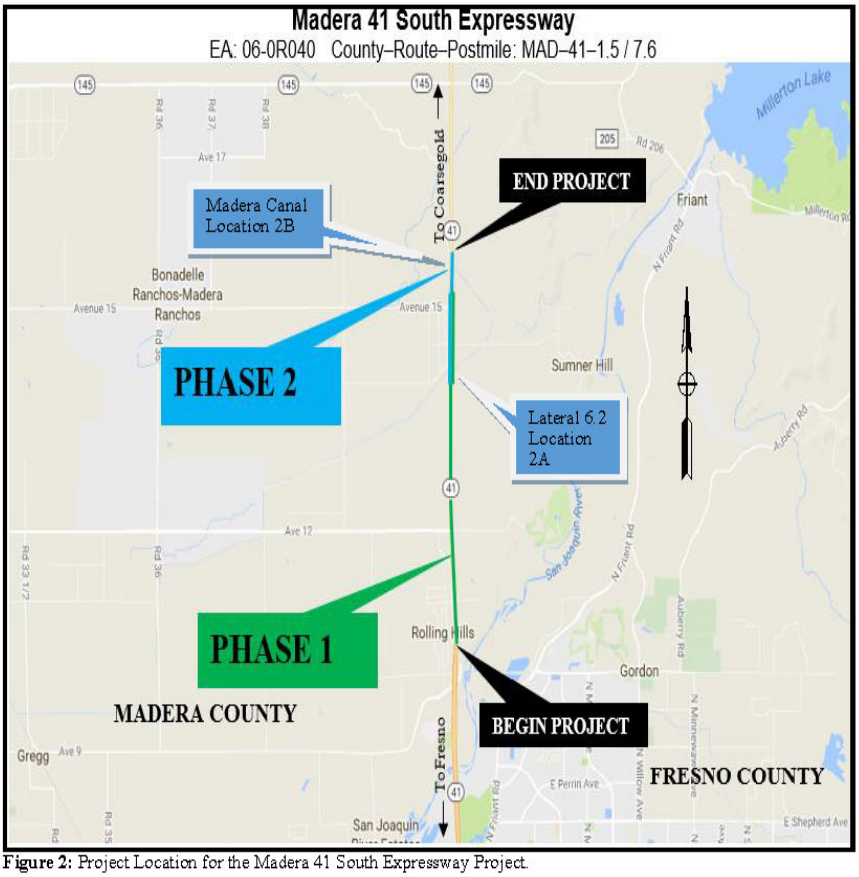


Figure 2: Project Location for the Madera 41 South Expressway Project.

Figure 2A.: Specific Project Location Map showing proposed construction location at Lateral 6.2

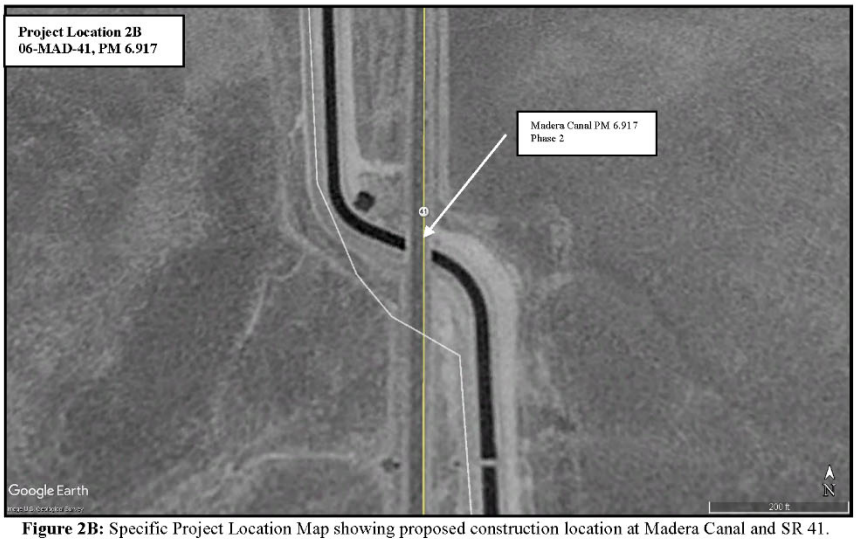


Figure 2B: Specific Project Location Map showing proposed construction location at Madera Canal and SR 41.

II. Public Participation

The three consulting parties listed below (Table1) were supplied with a copy of the Historic Property Survey Report with attachments in accordance with 36 CFR Part 800.2 (c) (1-4), 800.4 (d) (1), and 800.11 (a-d) for a thirty-day comment period.

Consultation with the Bureau of Reclamation was conducted in June 2015 and April 2019. Bureau of Reclamation architectural historian BranDee Bruce indicated via e-mail that ECORP completed an evaluation of Lateral 6.2 of the Madera Canal for the Tesoro Viejo Project and had recommended to the Bureau of Reclamation that it is eligible for the National Register of Historic Places under Criterion A and C.

In April 2019, Caltrans consulted with the Bureau of Reclamation on the Findings of Effects for the current project. Caltrans has requested comments from the Bureau of Reclamation via telephone and emails. However, no official comments have been received from the Bureau of Reclamation as of this date.

Table 1: Local Government Agencies (December 2015)

Name	Title	Affiliation
Madera County Planning and Community Development Department		County of Madera
City of Madera Planning Department		City of Madera
Christopher Boyle	Planning Manager	City of Madera

There has been no response to date from any of the three local government agencies listed above.

In March of 2017 the Mariposa Museum and History Center located in Mariposa, California was contacted as part of the public outreach pursuant to 36 CFR 800.2. No response has been received as of this date.

Native American consultation was initiated in late November 2014, with a letter sent to the Native American Heritage Commission (NAHC) requesting a search of their files to determine if any sacred sites or traditional cultural properties were known to exist within or near the project area.

Ms. Katy Sanchez of the NAHC responded on December 19, 2014 stating that their files failed to indicate no known sacred sites, traditional cultural properties, or native plant gathering areas located within the project APE. Ms. Sanchez provided a list of thirteen contacts who might be interested in the proposed undertaking or able to supply information regarding Native American resources in the project vicinity. Mandy Macias, Caltrans District 06 Native American Coordinator, provided ten other contacts known to represent heritage interest in the project area. These individuals are included in Table 2 below:

Table 2: Native American Consultation (March 26, 2015)

Name	Title	Affiliation
Mr. Jerry Brown	Chairperson	Chaushilha Yokuts
Ms. Lorrie Planas	Tribal Member	Choinumni Tribe
Mr. Robert Ledger Sr.	Chairperson	Dumna Wo-Wah Tribal Government
Mr. John Ledger	Tribal Member	Dumna Wo-Wah Tribal Government
Mr. Eric Smith	Cultural Resource Manager	Dumna Wo-Wah Tribal Government

Mr. Kenneth Woodrow	Chairperson	Eshom Valley Band of Indians
Ms. J. Elaine Fink	Chairperson	North Fork Rancheria
Mr. Dene Fink	Tribal Citizen	North Fork Rancheria
Mr. Gaylen Lee	Tribal Citizen	North Fork Rancheria
Ms. Leora Beihn		North Fork Rancheria
Mr. Ron Goode	Chairperson	North Fork Mono Tribe
Ms. Katherine Erolinda Perez	Chairperson	North Valley Yokuts Tribe
Ms. Mary Motola	Cultural Specialist	Picayune Rancheria of Chukchansi
Mr. Reggie Lewis	Chairperson	Picayune Rancheria of Chukchansi
Ms. Lois M. Martin	Chairperson	Southern Sierra Miwuk Nation
Mr. Bill Tucker	Elder	Southern Sierra Miwuk Nation
Mr. Les James		Southern Sierra Miwuk Nation
Ms. Silvia Burley	Chairperson	California Valley Miwok Tribe
Mr. Lawrence Bill	Chairperson	Sierra Nevada Native American Coalition
Ms. Lee Ann Walker-Grant	Chairperson	Table Mountain Rancheria
Mr. Robert Pennell	Cultural Resources Director	Table Mountain Rancheria
Mr. Kenneth Woodrow	Chairperson	Wuksache Indian Tribe/Eshom Valley Tribe
Mr. Frank Marquez	Independent	

On May 29, 2015, Silvia Burley, Chairperson of the California Valley Miwok Tribe, responded and indicated that the tribe has no issues with the project; however, if any Miwok artifacts and/or human remains are discovered, the Tribe requests notification. To date, no other comments have been received.

III. Description of Historic Properties

The proposed project will impact the Madera Canal and one of its primary laterals, Lateral 6.2. The Madera Canal and associated feature is a contributing component to the Central Valley Project (CVP), a historic property. The CVP and its contributing components are discussed below.

Central Valley Project
The Central Valley Project includes: The Shasta Dam, the Delta-Mendota Canal, Friant Dam, the Madera-Friant Canal (presently the Madera Canal) and the Contra-Costa Canal as well as later additions to the system. Overall by 1956 the CVP consisted of:

> *...several major dams to control floods, improve navigation on the lower Sacramento River, and provide irrigation water: Shasta and Keswick dams on the Sacramento and Folsom Dam on the American River, all of which would capture floodwaters and release them when needed into the Sacramento Valley's streams for irrigation; and New Melones Dam on the Stanislaus River and Friant Dam on the San Joaquin. (Folsom and New Melones were later additions to the original CVP, built by the Army Corp of Engineers and operated by the Reclamation Bureau). In addition, it included for principal canal systems moving water in several directions for different purposes: The Tehama-Colusa Canal bringing water down into a section of northern Sacramento Valley, on the west side; the Delta Cross Channel and Contra Colusa Canal to impede saltwater intrusion into the delta and provide water for the farms, cities, and industries of the delta area; the Delta Cross Channel and Delta-Mendota Canal for moving water into and through the San Joaquin Valley; and the Friant-Kern and Madera canals serving irrigation needs in the San Joaquin Valley with runoff collected at Friant Dam from the Sierra Nevada. The combined dams and canals collected ant transported annually more than 3 million acre-feet. Hydroelectricity generated along the network helped move the water and provided revenue to pay for the project* (Hundley 1991:252-254).

A core component of the CVP are the conveyance systems that carry water from the storage facility to farmlands. Conveyance systems within the CVP include over 350 miles of main canals and thousand of miles of primary and secondary laterals. The main canals are bulk conveyance systems with the laterals delivering water to irrigation ditches on farms. The longest primary artery is the Friant-Kern Canal which is 151.8 miles, while the shortest is the Delta Cross Channel at 1.2 miles. The Madera Canal, also one of the main canals is 36 miles long with four primary laterals, of which Lateral 6.2 was originally 16 miles long. The Madera Canal and it's associated primary lateral is a contributing component of the Central Valley Project, a historic property. Portions of both the Madera Canal and Lateral 6.2 are located with the project APE.

Madera Canal

The Madera Canal is an element of the Central Valley Project (CVP), managed by the United States Bureau of Reclamation (USBR). The CVP is a network of dams, reservoirs, and canals providing conservation and distribution of water, flood control, and electric power generation. Within the San Joaquin Valley, the CVP includes the Friant Dam, the Friant-Kern, Delta-Mendota, and Madera Canals.

The Madera Canal is a bulk water conveyance structure 36 miles in length. The head of the canal is located below Friant Dam on the north side of the San Joaquin River just at the end of outlet works of the dam. The canal terminates at Ash Slough northeast of the community of Chowchilla. The Madera Canal intersects State Route 41 in Madera County at post mile (PM) 6.917.

The preliminary plans for Friant Dam, the Madera Canal, and the Friant-Kern Canal were drawn up by the Bureau of Reclamation in 1936 with the final drawings being completed in 1939 (U.S. Bureau of Reclamation 1994:4). Construction on the Madera Canal commenced in 1940 with the Bureau of Reclamation authorizing the Utah Construction Company of San Francisco to build the first section of the canal extending from Friant Dam to State Route 41. This section was completed in 1942. The rest of the canal was completed by 1944. Madera Canal Bridge No. 41 0039 across the canal at State Route 41 was completed in 1941.

Photo No. 1: Southeast view of Madera Canal west of SR 41.

The canal has a trapezoidal configuration. Twenty-nine miles of the canal is concrete-lined and measures ten feet wide at the base, nine feet deep and a crest width of approximately twenty-four feet. The earthen section (seven miles) is much larger being twenty feet wide at the bottom and nine feet deep. The canal's designed flow capacity is 1,275 cubic feet per second as compared to the flow capacity of 3,500 cubic feet per second for the Friant-Kern Canal. Flow capacity of the Madera Canal, however, is reduced to 625 cubic feet per second at its terminus near Chowchilla (Autobee 1994:9). Associated features include siphons, radial control gates, bridges (state, local, farm), and concrete over chutes (flumes). Bridge No. 41 0039 crosses the Madera Canal on SR 41 at PM 6.917. According to Bureau of Reclamation records there are thirty-two bridge crossing over Madera Canal. State, local, and farm bridges were a part of the original design of the canal and were constructed during its period of significance (1940 – 1955). These bridges are contributing features of the Madera Canal. One of these bridges (Bridge No. 41 0039) is located with the current APE.

According to the bridge report dated January 22, 1942 (BIRIS), Bridge No. 41 0039 is a reinforced concrete (R.C.) five girder span on R.C. wall piers with spread footings. The dimensions of the bridge are 36 feet wide and 54 feet long. Original railings were wood post and beam but were replaced with non-similar concrete railing.

The final component of the Madera Canal within the project APE is Lateral 6.2

Madera Canal Lateral 6.2
Lateral 6.2, designed by the Bureau of Reclamation in 1951, was the first to be constructed between 1952 and 1955; however, the turnout located at Station 330+4.100 on the Madera Canal was part of the Phase I construction of the canal between 1940 and 1942. The turnout is the connection point of Lateral 6.2 to the Madera Canal. One source (ECORP Consulting, Inc. 2015:4) noted:

> *Turnout and Check Station 330+40 is located at approximately 6.1 miles from Station 6+10 along the Madera Canal. According to a 1940 project Specification Sheet No. 886 (regarding the construction of this segment of the canal), the turnout was designed to feed a lateral "to be constructed at a later date as part of the Madera Irrigation District's distribution system." The turnout is composed of reinforced concrete with a 16'0" x 11'3" radial check gate and two 10'0" x 11'3" radial turnout gates. The gate hoists are hand-operated.*

Lateral 6.2 is the first of three turnouts on the Madera Canal. The other two are Lateral 24.2 and Lateral 32.2. While the Madera Canal was designed to travel at higher elevations along the foothills in eastern Madera County, the laterals extended into the lower elevation agricultural regions of the county. Lateral 6.2 is 16 miles long, but in 1960 the lateral was extended an additional eight miles (outside the current APE). This later addition is known as the "Lateral 6.2 Extension." Lateral 6.2 is unlined, approximately forty-five feet wide at the water's crest, thirty feet at the base, and eight feet high at capacity. Within the current project area, Lateral 6.2 intersects SR 41 at PM 5.39 in Madera County. The later extension was constructed after the period of significance of the CVP and is therefore it does not contribute to the significance of the CVP, a historic property.

The earthen-lined Madera Canal Lateral 6.2 is approximately sixteen miles long. The lateral is about forty-five feet across at the crest, thirty feet across at the bass, and eight feet high. The entire sixteen miles of the lateral is located among rural agricultural fields. The lateral intersects State Route 41 at PM 5.39 and travels under the highway through a drop structure (under SR 41; refer to Figure 5, Appendix B) that drops several feet below the bridge and expulses water through a similarly-shaped concrete reverse funnel on the opposite (west) side and back into the earthen canal. This feature was a part of the original design and construction of Lateral 6.2 between 1952 and 1955 (within the period of significance). There are also seven bridges that cross the lateral at various locations.

Photo No. 2. 1970 northwest view of Bridge No. 41 0039 with post and rail.

Modifications

Madera Canal

During the 1980s, the Madera-Chowchilla Power Authority constructed four low-head hydroelectric plants on the Madera Canal; however, this did not change the physical structure or function of the of the canal (Hattersley-Drayton 2000).

In the general vicinity of the project APE, two new bridges and two replacement bridges have been placed over the canal east of State Route 41 as part of private development of the Tesoro Viejo Specific Plan area on both sides of the Madera Canal. This plan calls for the development of mixed-use community on approximately 1500 acres (Adams 2019; Baloian et al. 2006:1).

Photo No. 3 View northwest Bridge No 41 0039 with concrete railing 2019.

Madera Canal Bridge (Bridge No. 41 0039), a contributor to the CVP, was altered circa 2007 (Hobbs 2005). The replacement of the post and beam railing with non-standard concrete railing resulted in a determination of an Adverse Effect to the bridge. In 2015, Bridge No. 41 0039 was re-evaluated and determined not eligible to the National Register of Historic Places individually or as a contributor to the CVP (Brady 2015) due to loss of integrity. The State Historic Preservation Officer (SHPO) concurred in a letter dated March 1, 2016 (Appendix C).

Photo No. 4: View of Lateral 6.2 Drop Chute on east side SR 41.

Madera Canal Lateral 6.2

As an associated feature of the Madera Canal, Lateral 6.2 is a primary lateral and draws irrigation water from the bulk conveyance system, the Madera Canal. That portion of the lateral, between the Madera Canal and State Route 41 is about 1.2 linear miles with an additional 14.8 miles winding through rural agricultural fields west of SR 41. The entire lateral was originally earthen, but in recent years as the result of private commercial and residential development east of State Route 41 there have been alterations to the lateral. This includes approximately 740 feet of concrete lining and another 2,787 feet of piping; thus, within this 1.2 miles of the lateral, 3,526 feet of the canal has been modified. The remaining 2,240 feet of the lateral remains earthen lined. The remaining 14.8 miles of the lateral, west of State Route 41, is also earthen lined. As noted above the "Lateral 6.2 Extension" was added to the Madera Canal Lateral 6.2 in 1960. The "Lateral 6.2 Extension as it was constructed after the period of

Photo No. 5: View of Lateral 6.2 Drop Chute west of SR 41.

significance (1940-1955), it is a non-contributor to the Madera Canal as a component to the eligibility of CVP.

Summary
The Madera Canal and its associated feature, Lateral 6.2, have undergone minor alterations after its period of significance 1940-1955. Alterations to the Madera Canal include the placement of four lower-head hydroelectric generating plants along the canal that stretches over 36 miles; however, this did not change the physical structure or function of the of the canal. Modifications to the primary lateral, Lateral 6.2, have occurred over the last three years. Consequently, these modifications occurred after the period of construction of both the canal and its associated lateral. These modifications have minimally impacted the Madera Canal and Lateral 6.2. The Madera Canal and associated feature is a contributor to the Central Valley Project, a historic property. The loss of materials, workmanship and design to the Madera Canal and associated feature, Lateral 6.2, has minimally impacted the overall historic integrity of the Madera Canal as a contributor to the Central Valley Project.

Character Defining Features
Madera Canal
Few alterations have been made to the Madera Canal since it's construction between 1940 and 1944. Character Defining Features (CDFs) for the concrete-lined and earthen canal include its steep embankments and its associated features that include siphons, radial control gates, bridges (state, county, farm) and concrete over chutes. Bridge No. 41 0039 is no longer a contributor to the CVP is Bridge No. 41 0039 as it no longer retains its historical integrity.

Madera Canal Lateral 6.2
Character Defining Features for the lateral include its original alignment, earthen embankments, a drop structure across SR 41and steel and wood footbridges supported by concrete pilings at various locations along this linear structure along with 7 state, local and farm bridges.

IV. Application of Criteria of Adverse Effect

Under federal law, the Criteria of Adverse Effect are set forth by the Advisory Council on Historic Preservation (ACHP) in its implementing regulations at 36 Code of Federal Regulations (CFR) Part 800.5 (a) (1): *An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be further removed in distance or be cumulative.*[1]

Adverse effects to historic properties include, but not limited to, the following examples:

1. Physical destruction of or damage to all or part of the property;
2. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous materials remediation, and provisions of handicapped access, that is not consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
3. Removal of the property from its historic location;
4. Change the character of the property's use or physical features with the property's setting that contribute to its historic significance;

[1] 36 CFR Part 800.5 (a) (1) Criteria of adverse effect

5. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
6. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian Tribe or Native Hawaiian organization; and
7. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.[2]

The proposed project calls for the replacement of a two-lane highway between PM R1.5/7.6 on State Route 41 in Madera County with a four-lane expressway. The project will be constructed in two phases. Project activities will impact segments of a contributor (the Madera Canal and Madera Canal Lateral 6.2) to the CVP, a historic property.

Phase 1 related construction activities within the project APE will affect a 486-foot section of Lateral 6.2 (Figure 2A). Construction related activities involve the replacement of a drop structure (approximately 152 feet in length) on Madera Canal Lateral 6.2 at PM 5.39 as well as a small portion of the earthen lined section (approximately two hundred and twenty-seven feet) of the lateral west of SR 41 (refer to Figure 4, Appendix A). The drop structure (refer to Photo's 4 and 5 above) is a part of the 1951 original design (refer Figures 7A-7C, Appendix B) of the sixteen-mile lateral designed by the Bureau of Reclamation. The drop structure will be replaced with two parallel 84-inch concrete pipes will be placed in the bed of the lateral, thus accounting for the ultimate build (refer to Figure 3 and Figure 4 at Appendix A; current ROW at this location is only 65 feet wide). The acquisition of an additional 421 feet of ROW is necessary to accommodate the proposed four-lane expressway on a new alignment.

The removal of the drop structure and the placement of two 84-inch pipes in the lateral within the project APE will not impede the flow of irrigation water through Lateral 6.2. The lateral will remain on its original alignment within the APE. Although the placement of the corrugated pipes will alter the physical features of the lateral within the APE, it will not change the character of the property's use. Traffic patterns on SR 41 at this location will not add visual or audible elements that diminish the integrity of the property's significant historic feature. The integrity of design and workmanship will be minimally impacted by the minor alteration to the lateral at this location. As the drop structure was originally designed by the Bureau of Reclamation, the removal of it will have an effect. However, the loss of integrity of design and workmanship will be minimal (the drop structure is approximately 150 feet in length and another 336 feet of the earthen lined portion of the canal west of SR 41). These elements are discussed in greater detail below. Within the project's ultimate ROW, the two 82-inch drain pipes will be placed within the canal (refer to Figure 4, Appendix A). Thus, less than one percent of Lateral 6.2 will be minimally impacted by project related activities. The lateral's integrity of setting, location, association and feeling will not be impacted. The lateral is over 84,000 feet in length and only 486 feet of the lateral will be impacted by project related construction activities. There will be a loss of less than one-half percent of the historic integrity of this associated feature of the Madera Canal, which is a contributing component of the CVP that has over 350 miles of main canals and thousands of miles of primary laterals (USDI National Park Services, ND). In the context of the historic property, the CVP, the loss of integrity considering project related activities on Lateral 6.2 within the project APE is only 0.0003 percent.

Phase 2 of the proposed project will be built when this phase is fully funded. Proposed modifications to the Madera Canal at PM 6.917 include realignment of the canal (Figure 5 and Figure 6, Appendix A). A box culvert will be placed within that portion of the canal within the project APE (current and new acquisition of ROW; refer to Figure 5, Appendix A). Realignment of the canal would affect

[2] 36 CFR Part 800.5 (a) (2) Examples of adverse effect.

approximately 3,000 feet of the original canal (Figure 5 and Figure 6, Appendix A). The realignment of the Madera Canal within the project APE would result in the destruction of approximately 3,000 feet of the originally concrete-lined canal; however, in the context of the resource, which consists of approximately 190,080 feet in length for the Madera Canal, impacts would be minimal. The alteration of the alignment of the canal within the APE would constitute less than one percent of the main canal's historic integrity. There would also be minimal loss of the canal's integrity of design, materials and workmanship (these elements are discussed in greater detail below). Overall, these proposed alterations would not diminish the canal's integrity of setting, workmanship and association; nor would it impact the overall function of the main canal as it was originally intended.

Assessment of Integrity

Location
The proposed project would alter, during Phase 1and Phase 2, a small portion of the Madera Canal and Lateral 6.2, but overall it would only minimally impact the geographic location of the canal and one of its three primary laterals, Lateral 6.2. The integrity of location will only be minimally impacted by the project.

Setting
The setting surrounding the Madera Canal and its associated feature, Lateral 6.2 is rural agricultural and conveys a sense of time and place consistent with the period of significance. Present-day State Route 41 was originally a county road prior to the construction of this water conveyance system and was a part of the original setting for the Madera Canal and associated features. Over the last seventy years, increased traffic and with it both increased visual and audible elements. The expansion of State Route 41 from a two-lane conventional highway to a four-lane expressway will add additional visual and audible elements that are consistent with current traffic impacts. Project related activities, however, will minimally diminish the integrity of setting for the Madera Canal and associated features. These indirect effects will not diminish the integrity of setting to an extent where this historic property, as a whole, will no longer covey its historical significance.

Design
While a 3,000-foot segment of the Madera Canal will be realigned, overall the impact to the 190,000-foot canal will be minimal. That portion of the canal being realigned is concrete-lined. The realigned portion of the canal will also be lined with concrete. The project will not diminish the overall historic integrity of design of the Madera Canal and its associated lateral, Lateral 6.2.

The drop chute that intersect SR 41 at PM 5.7 was originally designed as a part of Lateral 6.2 in 1951 by the Bureau of Reclamation; however, there are other drop chutes on Lateral 6.2 and the Madera Canal. While the drop structure will be demolished and 250 feet of the earthen canal within the APE will be impacted with the placement of the two 82-inch drain pipes on the ultimate build, the impact will be minimal to the lateral and it will still be recognizable as a primary lateral. The integrity of design will only be minimally impacting the overall design of the lateral as an associated feature of the Madera Canal, which is a contributor to the CVP, a historic property.

Materials
Small portions of the canal and the lateral within the project APE will be impacted by the project. The realignment of the canal, the placement of the box culvert, and concreting the realigned section of the Madera Canal within the APE will minimally impact the main canal. The Madera Canal is thirty-six miles long and twenty-seven miles of it are lined with concrete. Consequently, less than two percent of the concrete-lined portion of the Madera Canal will be impacted with new concrete.

Lateral 6.2 was designed as a primary lateral of the Madera Canal during the period of significance (1940-1955) as part of the CVP. The earthen lateral is approximately sixteen miles long and the concrete drop chute is approximately one hundred and sixty-five feet in length. The concrete drop chute will be demolished and replaced with 82-inch drain pipes. The loss of the concrete lined drop chute will constitute less than one-half percent of the original materials dating to the period construction.

The loss of original materials for both the Madera Canal and its associated feature Lateral 6.2 will impact approximately two percent of that of the original materials. When considered in the context of the historic property, the CVP, the loss of original materials within the current APE are minimal. Thus, there will be a minor loss of integrity of materials for this project.

Workmanship
As with integrity of design and materials, integrity of workmanship dating to the period of significance will be minimally impacted by the alterations at both locations with the project APE. The impacts to the Madera Canal and associated feature, Lateral 6.2, within the project APE will be approximately two percent. In the context of the historic property, the CVP, the impacts will be approximately 0.0003 percent of the property's integrity of workmanship.

Feeling
The project will slightly diminish the integrity of feeling at these two locations within the project APE. The realignment of the canal and the widening of State Route 41 from a two-lane road to a four-lane expressway, however, will minimally diminish the integrity of feeling. Increased traffic flow along State Route 41 at these two locations, while increasing both visual and audible elements, will minimally impact the feeling the traveling public has when encountering the Madera Canal and its associated feature Lateral 6.2 in its current setting. The Madera Canal and Lateral 6.2 will retain its integrity of feeling at other locations outside the APE. The property's integrity of feeling, therefore, will not be diminished to the extent where the Madera Canal and Lateral as a contributor to the historic property, the CVP, could not convey its historical significance.

Association
The Madera Canal and Lateral 6.2 will convey its association with agricultural development as does the historic property, the CVP. The integrity of association will not be diminished by project activities.

Summary
In terms of cumulative impacts, there have been no changes to either the Madera Canal or Lateral 6.2 within the project APE since the construction of the canal (1940-1944) or Lateral 6.2 (1952-1955). Proposed changes during Phase 1 and Phase 2 have been addressed in this document. Most of the impacts beyond the current APE include piping of almost one-half of Lateral 6.2 between the turn-out for Lateral 6.2 at the Madera Canal and where Lateral 6.2 intersects State Route 41 at PM 5.7. However, those impacts combined with proposed project activities do not diminish the integrity of the historic property to a degree that the property can no longer convey its historic significance and does not rise to a level of adverse effect.

While portions of both the Madera Canal and associated feature Madera Canal Lateral 6.2 will be minimally impacted by current and future construction activities where these facilities intersect SR 41, this will result in a **No Adverse Effect.**

V. Conditions to Avoid Adverse Effects

To ensure that project activities will not change and result in an adverse effect, Caltrans will ensure that: A Caltrans Principal Architectural Historian will review construction plans at the 60 percent and 95

percent constructability reviews. Additionally, a Caltrans PQS architectural historian will attend the pre-construction meeting as well as monitor construction activities at the Madera Canal and Lateral 6.2 to ensure that no unanticipated impacts to either the Madera Canal or Lateral 6.2 occur during construction. Should any significant changes be made to the construction plans that have the potential to impact the property in an adverse manner, the SHPO will be notified immediately and additional documentation, as appropriate, will be completed to assess the impacts to said property.

VI. Conclusions

Pursuant to 36 CFR 800.5 (b) Caltrans, as assigned by FHWA, has determined a **Finding of No Adverse Effect Without Standard Conditions** for the Madera 41 South Expressway Project in Madera County, California and is requesting SHPO's concurrence with this finding.

References Cited

Adams, Jeremy, MA
2015 Letter report entitled *Cultural Resources Field Visit and Archival Research for Lateral 6.2 of the Madera Canal, Fresno, California.* Prepared for Ms. BranDee Bruce, Bureau of Reclamation, Sacramento, California by ECORP Consulting, Inc., Sacramento, California, May 4, 2015.

Hattersley-Drayton, Karana
2000 *Madera Irrigation District – Informal Interview with Don Roberts and Harold Ryan.* Interview conducted by Caltrans Associate Environmental Planner (Architectural History) Karana Hattersley-Drayton, Caltrans Central Region, District 06, Fresno, California.

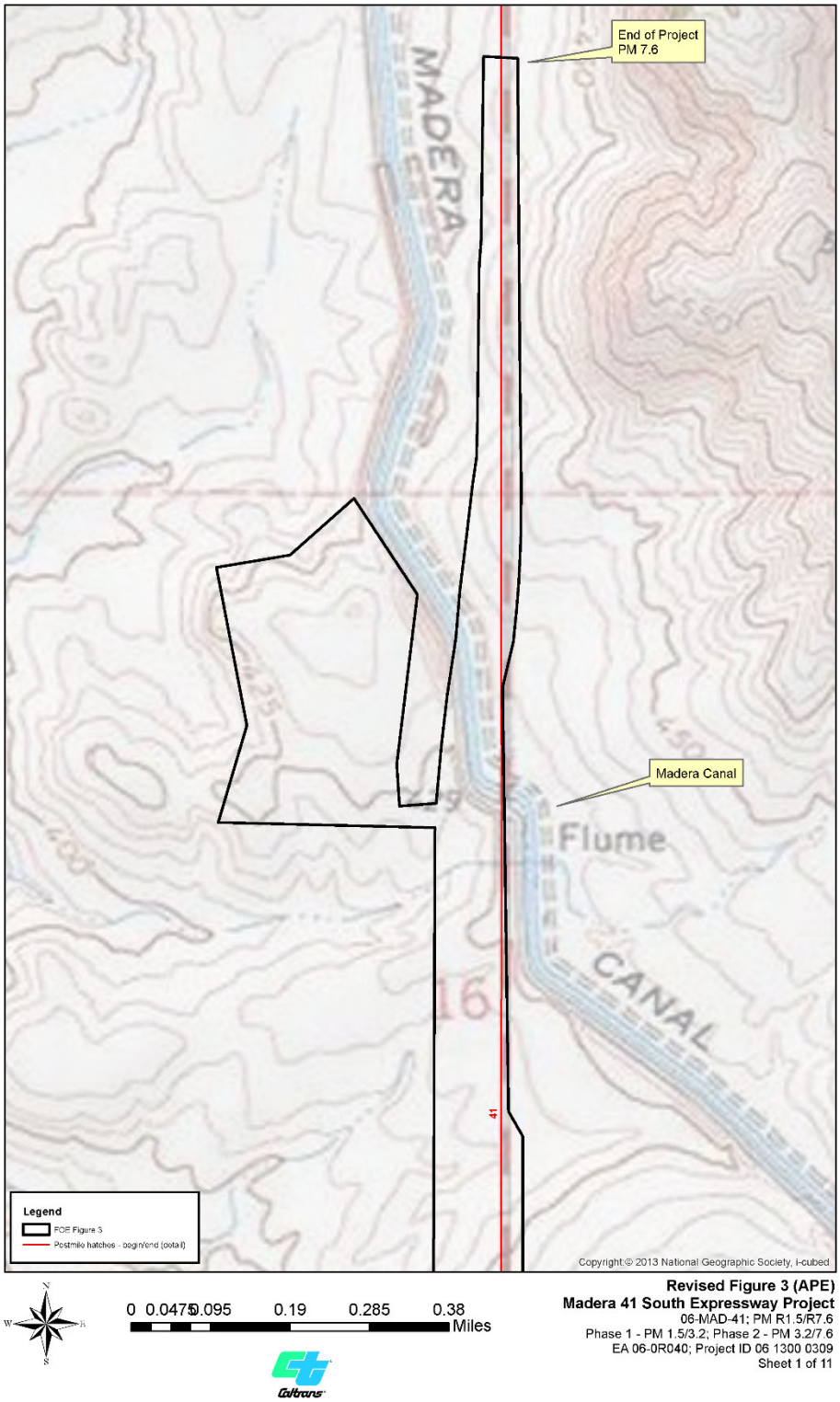
Hobbs, Kelly
2005 *Recordation of the State Route 41at Madera Canal Bridge for the Bridge Railing Replacement Project, Madera County, California 06-MAD-41 (PM 6.94) EA 06-327000.* Prepared for Frank Michny, Regional Environmental Officer, Department of the Interior, Bureau of Reclamation, Sacramento, California by San Joaquin Valley Environmental Management Branch, Caltrans, District 06, Fresno, California.

Hundley, Norris, Jr.
1991 *The Great Thirst: Californian and Water, 1770 -1990s.* University of California Press Berkeley and Los Angeles, California.

U.S. Department of Interior, Bureau of Reclamation
1939 *Schedule, Specifications, and Drawings, Earthwork, Canal Lining, and Structures, Madera Canal Station 6+10 to Station 452+00, Friant Division Central Valley Project, California.* Specifications No. 886.

U.S. Department of Interior, National Park Service
ND *Draft Section F of Multiple Property Listing for the Central Valley Project (CVP) Historic Engineering Features.* National Register of Historic Places Continuation Sheet, USDI Bureau of Reclamation.

Appendix A – Mapping



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06-MAD-41; PM R1.5/R7.6
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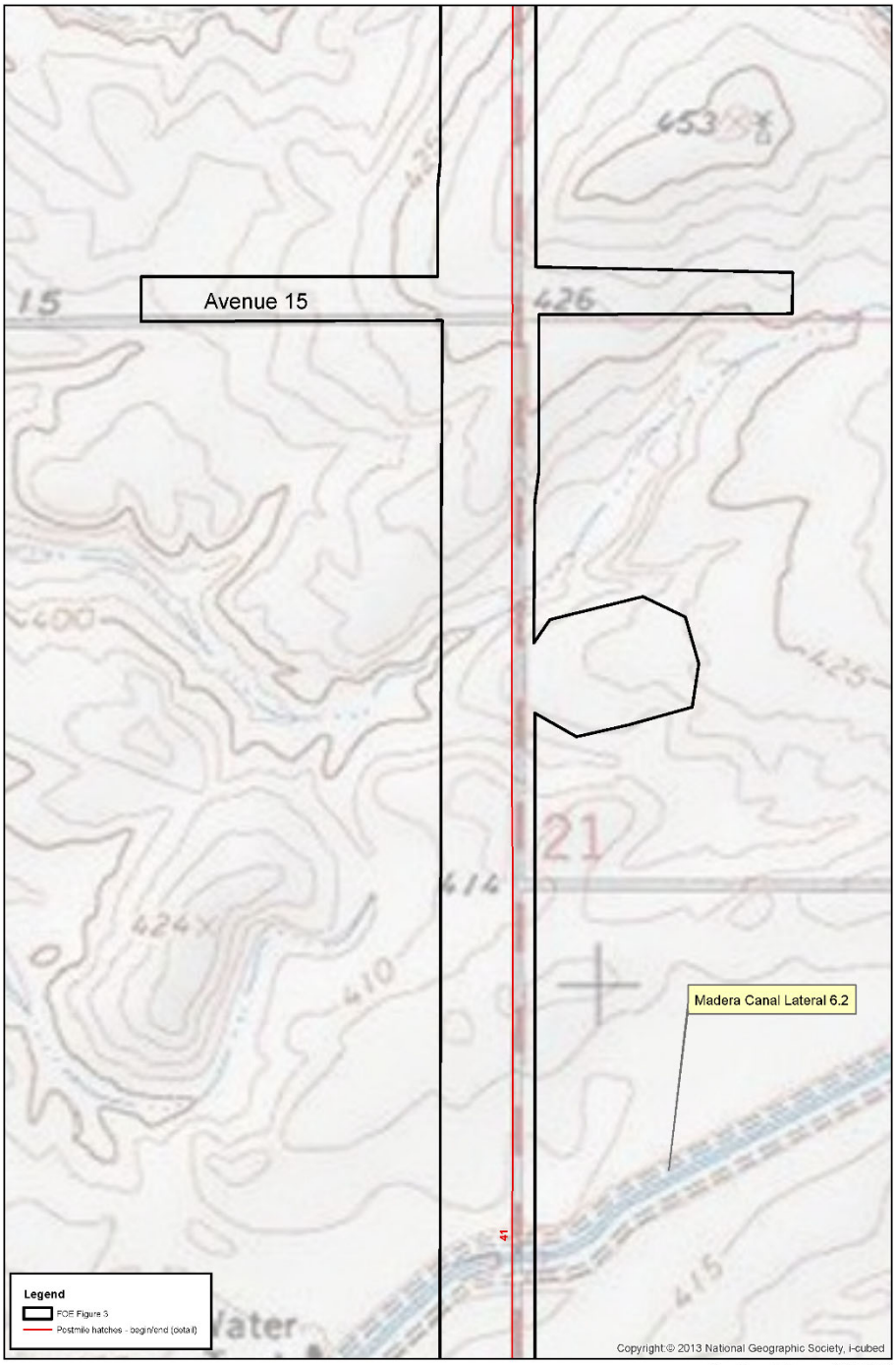
EA 06-0R040; Project ID 06 1300 0309
Sheet 1 of 11



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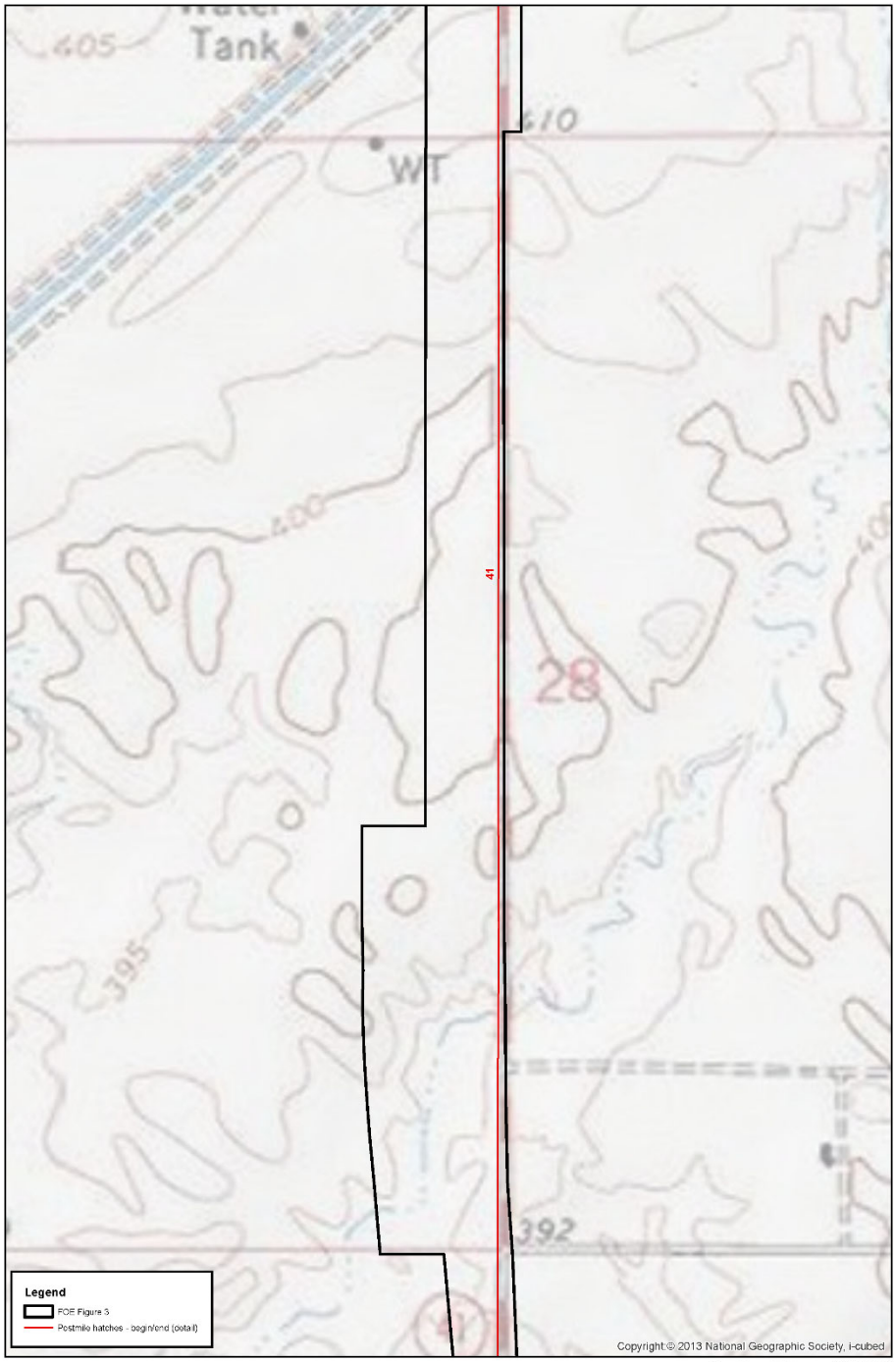

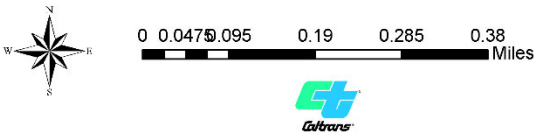

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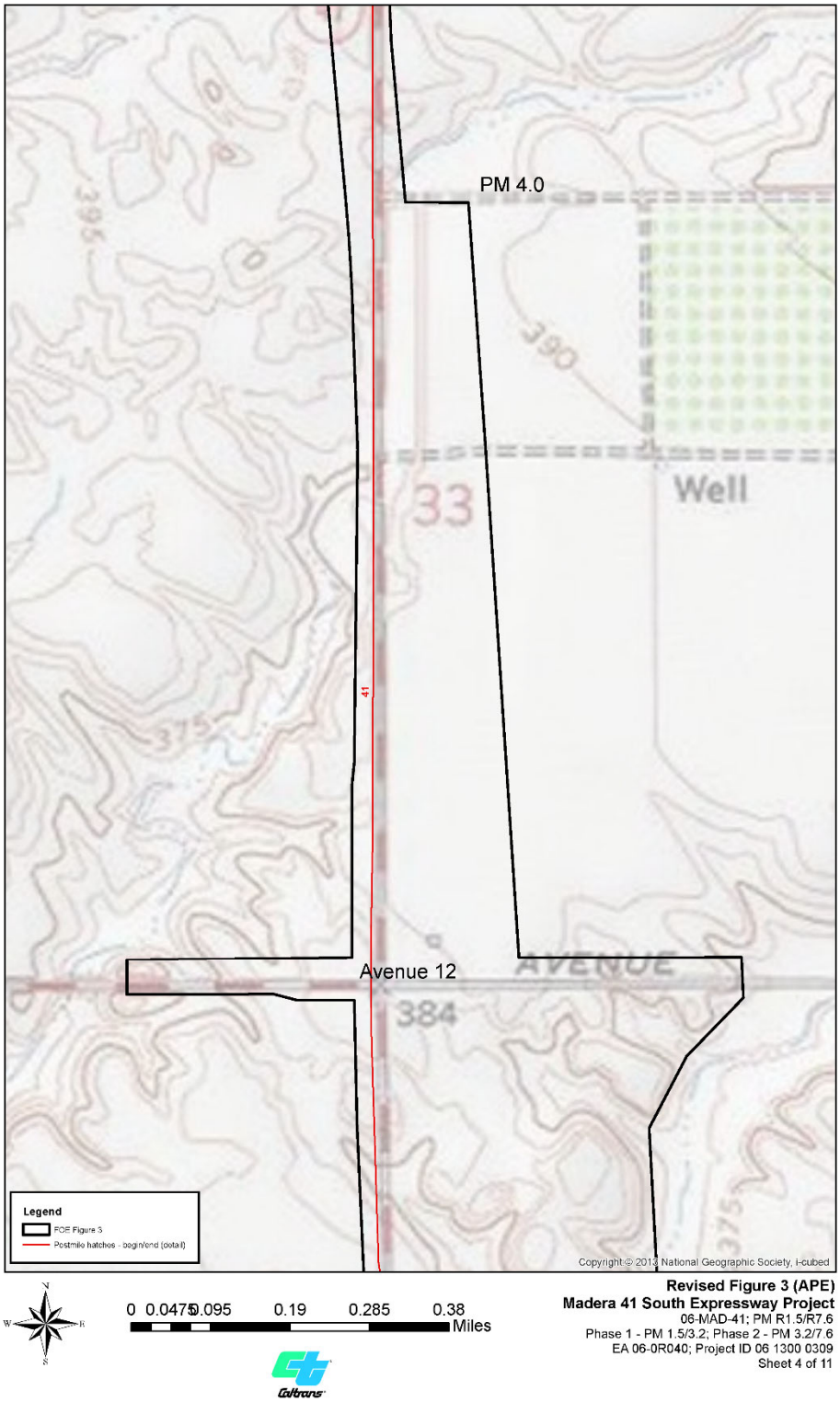

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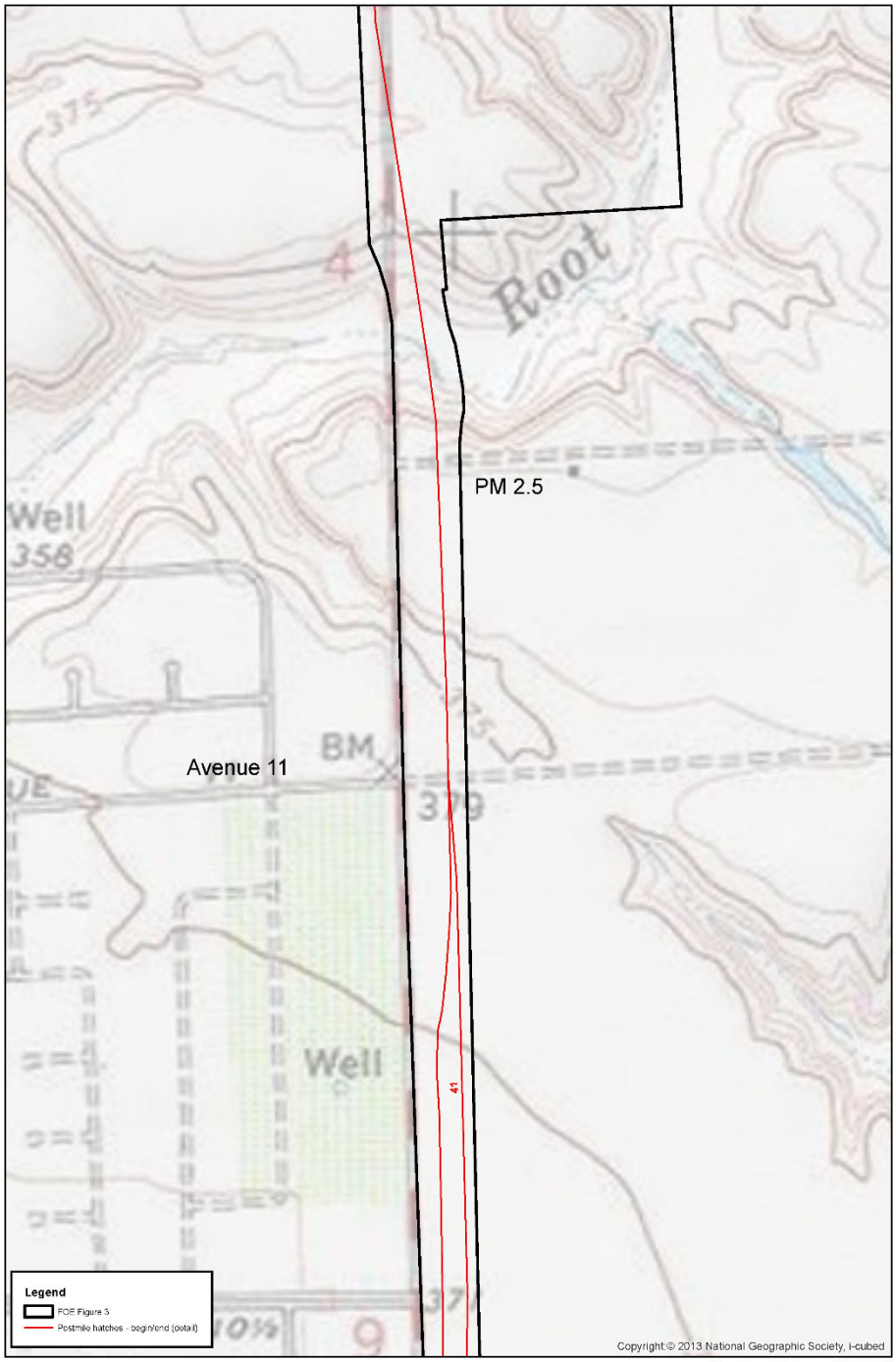

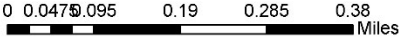

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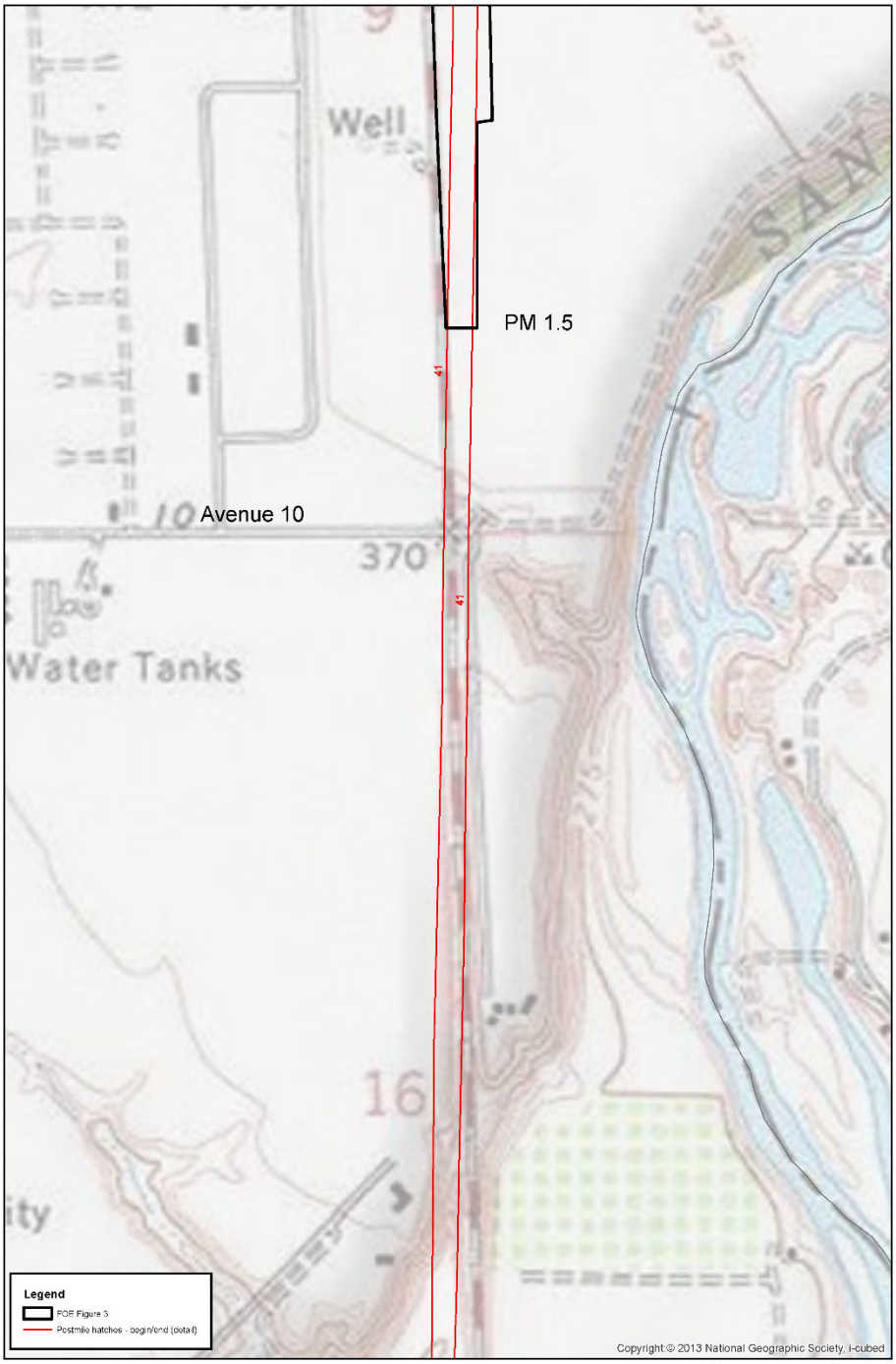

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EA 06-0R040; Project ID 06 1300 0309
Sheet 6 of 11

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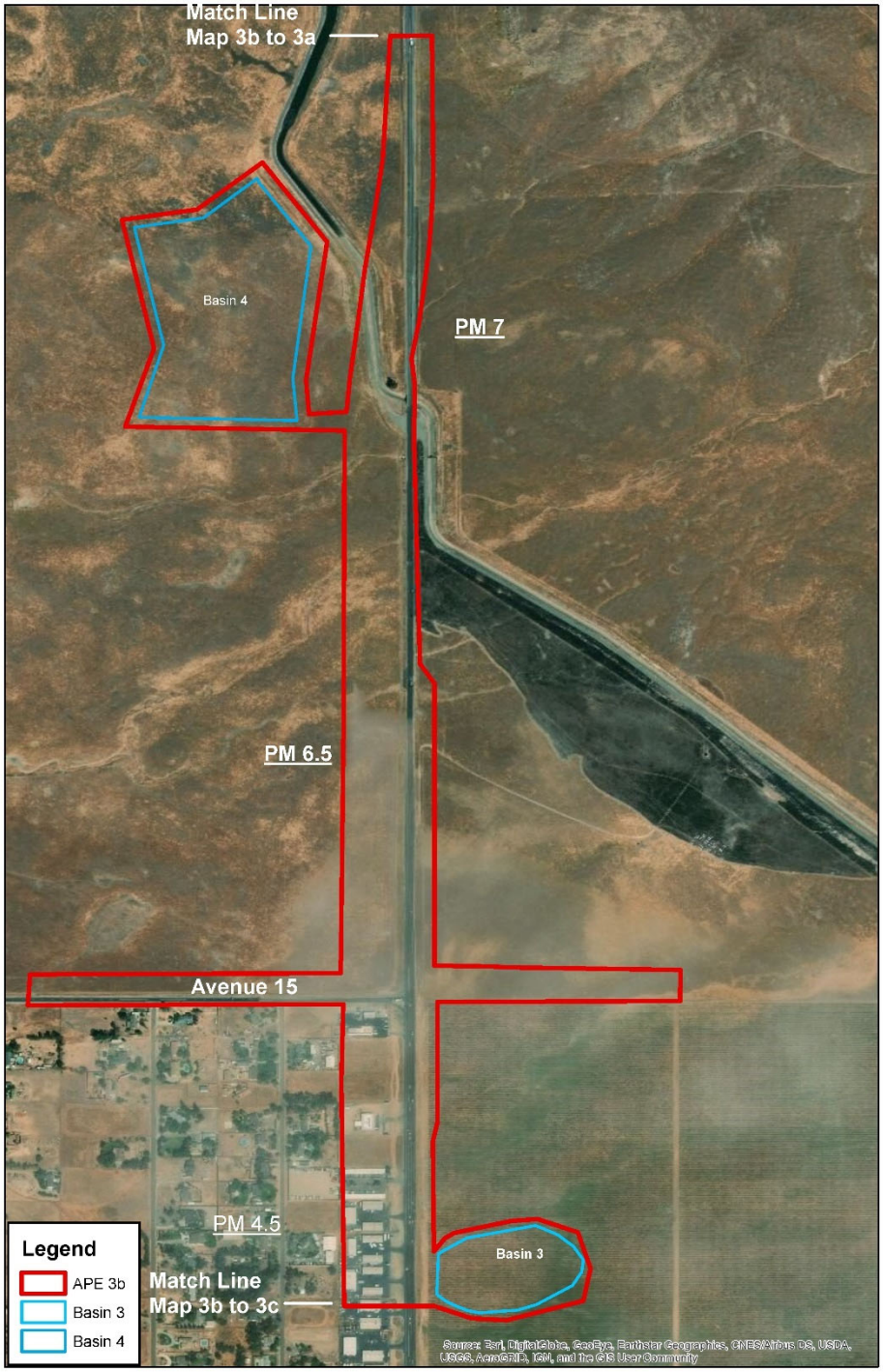
Caltrans

Revised Figure 3a
Madera 41 South Expressway Project
06-MAD-41; PM R1.5/R7.6
Phase 1 - PM 1.5/3.2
Phase 2 - PM 3.2/7.6
EA 06-0R040; Project ID 06 1300 0309
Sheet 7 of 11



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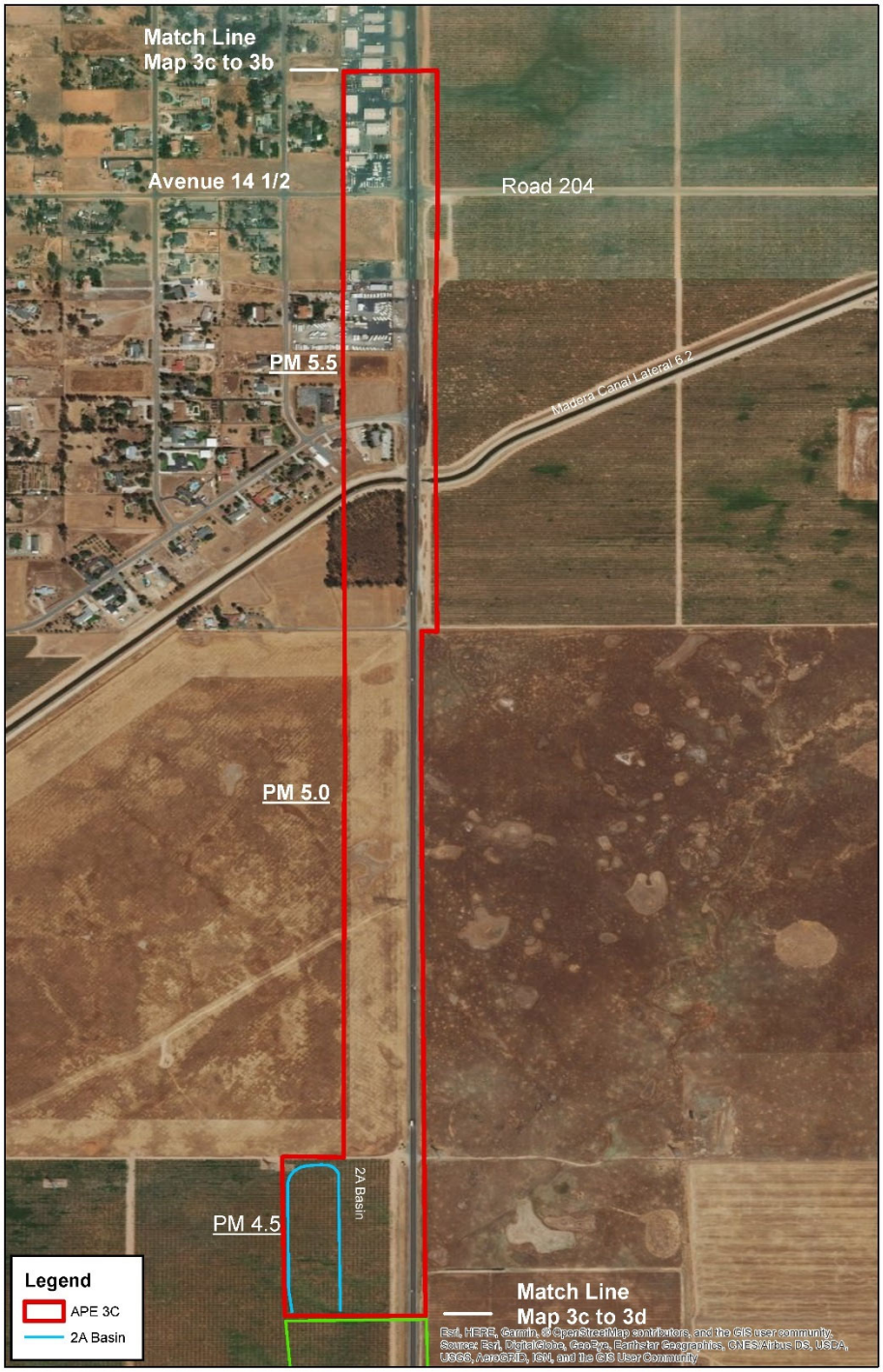
Phase 2 - PM 3.2/7.6
EA 06-0R040; Project ID 06 1300 0309
Sheet 8 of 11



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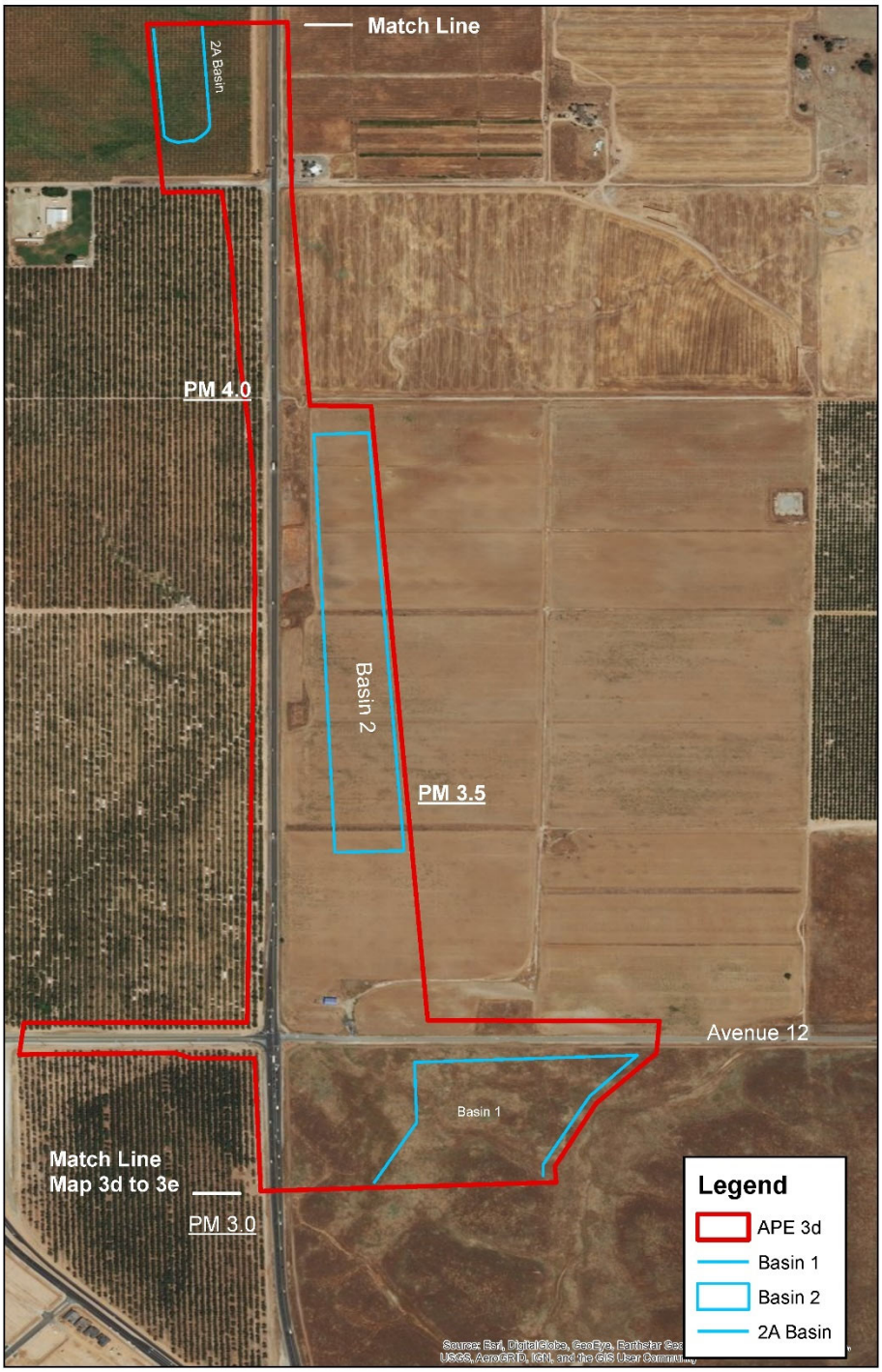
EA 06-0R040; Project ID -6 1300 0309
Sheet 9 of 11



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Caltrans

Revised Figure 3d
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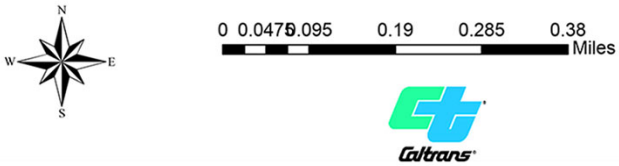
06-MAD-41; PM R1.5/R7.6
Phase 1 - PM 1.5/3.2
Phase 2 - PM 3.2/7.6
EA 06-0R040; Project ID 06 1300 0309
Sheet 10 of 11



Revised Figure 3e
Madera 41 South Expressway Project
06-MAD-41; PM R1.5/R7.6
Phase 1 - PM 1.5/3.2
Phase 2 - PM 3.2/7.6
EA 06-0R040; Project ID 06 1300 0309
Sjheet 11 of 11

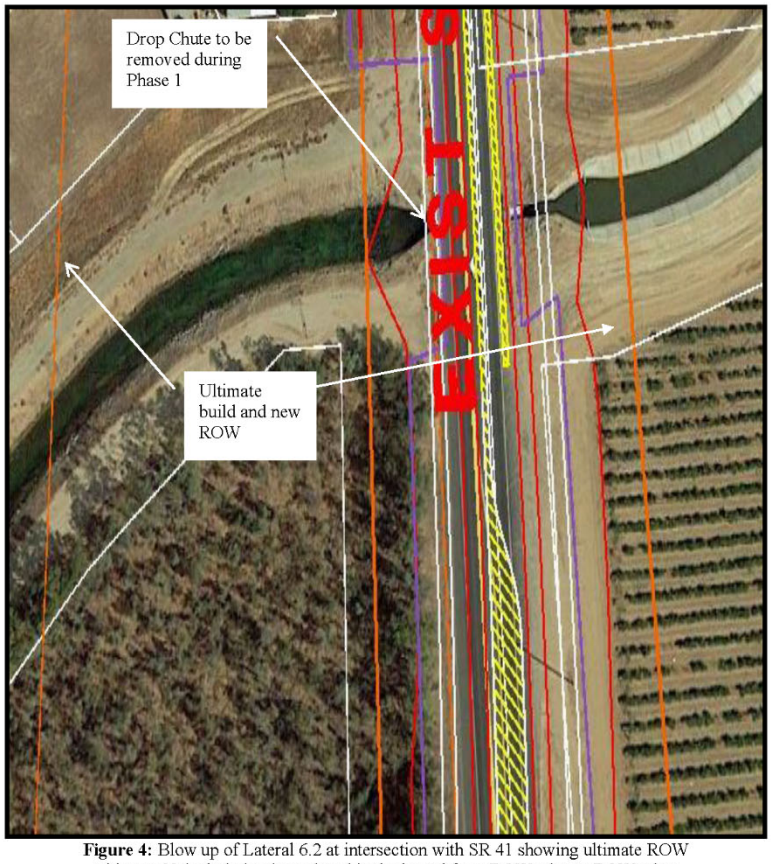


Figure 4: Blow up of Lateral 6.2 at intersection with SR 41 showing ultimate ROW with two 82-inch drain pipes placed in the lateral from ROW edge to ROW edge.

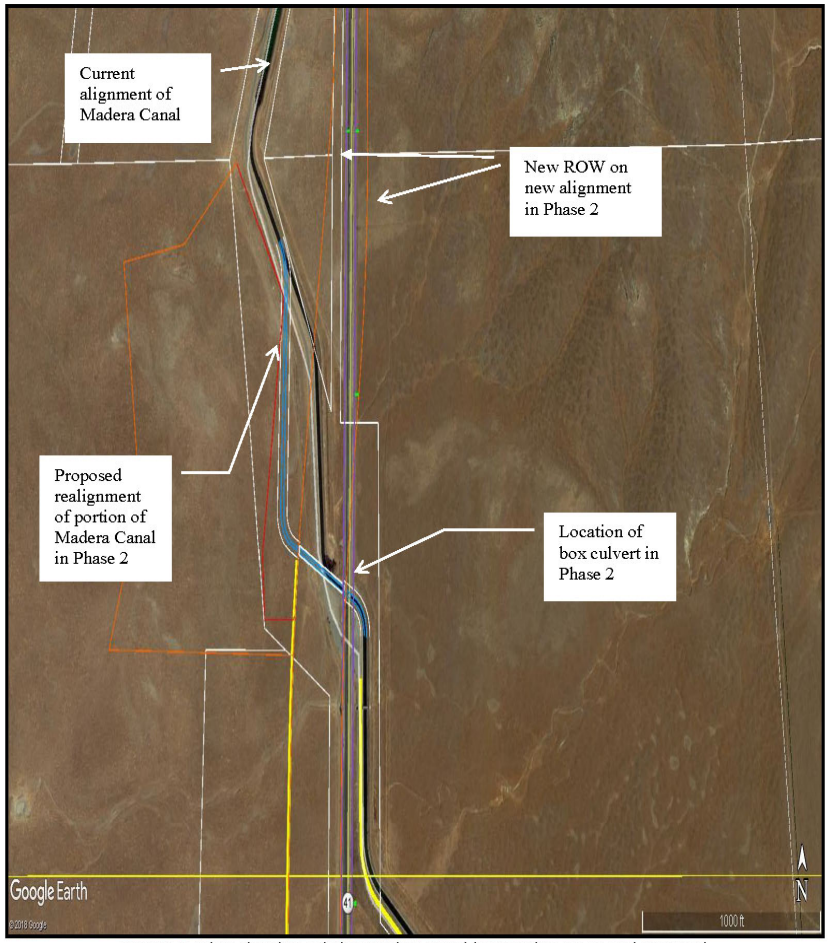


Figure 5. View showing existing Madera Canal intersecting SR 41 and proposed realignment of canal and location of box culvert in canal.

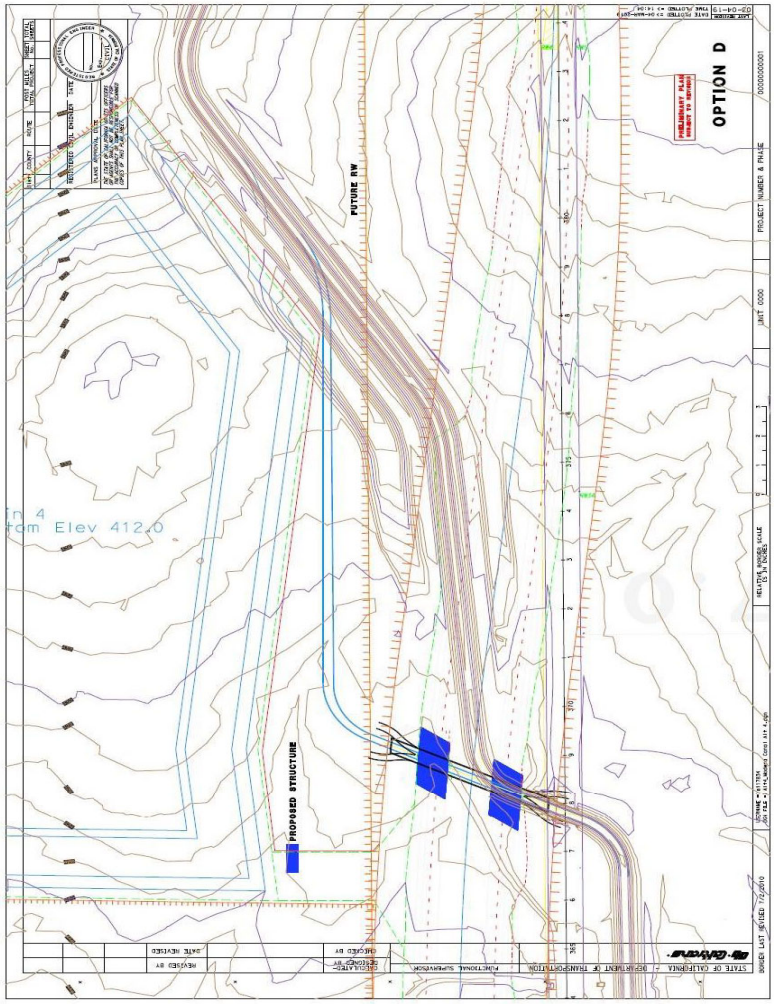


Figure 6. Proposed Phase 2 Realignment of Madera Canal (After Caltrans 2019)

Appendix B – Drawings and Designs

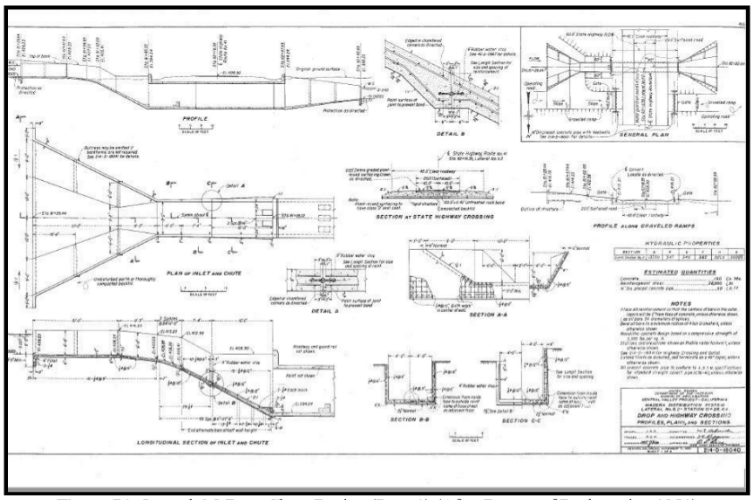


Figure 7A. Lateral 6.2 Drop Chute Design (Page 1) (After Bureau of Reclamation 1951)

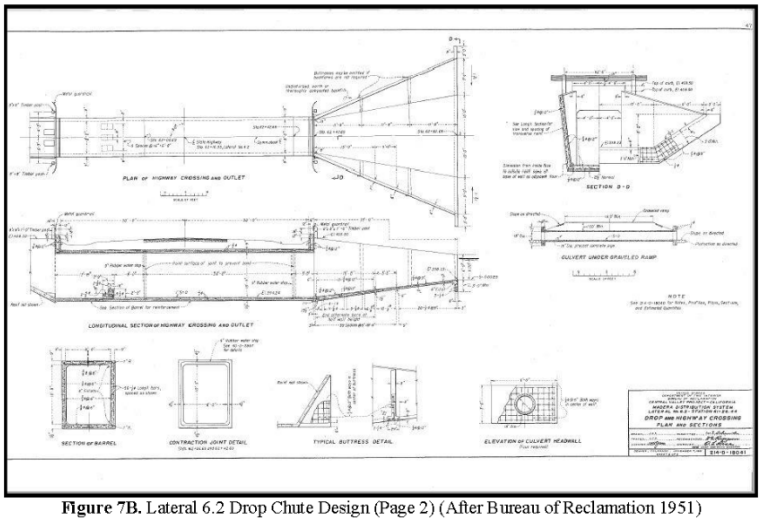


Figure 7B. Lateral 6.2 Drop Chute Design (Page 2) (After Bureau of Reclamation 1951)

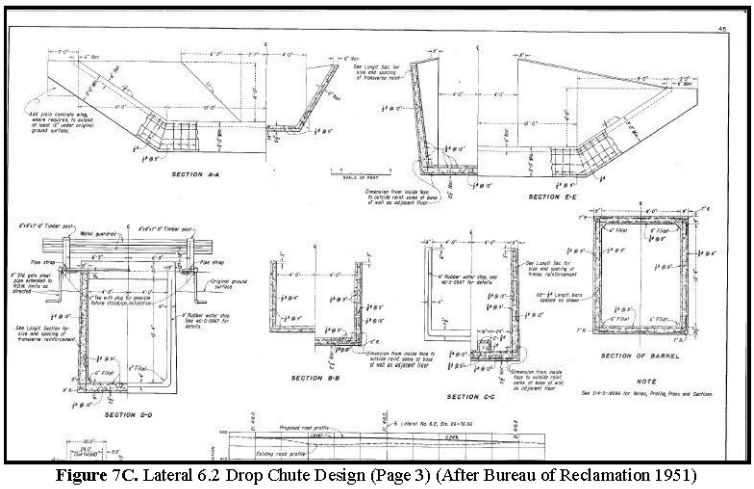


Figure 7C. Lateral 6.2 Drop Chute Design (Page 3) (After Bureau of Reclamation 1951)

Appendix C - Correspondence

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

March 1, 2016 Reply To: FHWA_2015_1207_001

Jeanne Day Binning, Ph.D., Chief
Central California Cultural Resources Branch
Caltrans District 6
855 M Street
Fresno, CA 93721

Re: Determinations of Eligibility for the Proposed Madera State Route 41 South Expressway Project, Madera County, CA

Dear Ms. Binning:

Thank you for consulting with the State Historic Preservation Officer (SHPO) about the subject undertaking in accordance with the January 1, 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, 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).

Caltrans, in cooperation with the County of Madera, proposes improvements to SR 41 in Madera County from PM R1.57 to PM R7.6. The proposed project would improve traffic circulation, address safety concerns, and provide a transportation facility consistent with Caltrans Standards. A full project description and depiction of the Area of Potential Effects (APE) can be found on pages one through two and Figure 3 of the HPSR.

Caltrans has determined that Bridge No. 41-0039 is not eligible for the National Register of Historic Places (NRHP) due to a loss of integrity. Caltrans has also found the Madera Canal and Lateral 6.2 eligible for the NRHP under criterion A as components of the Central Valley Project. Based on my review of the submitted documentation I concur with the foregoing determinations .

If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or Alicia Perez at (916) 445-7020.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Appendix P FOE Transmittal Letter

STATE OF CALIFORNIA—TRANSPORTATION AGENCY GAVIN NEWSOM, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS
1120 N STREET
SACRAMENTO, CA 94274-0001
PHONE (916) 654-3567
FAX (916) 653-7757
TTY (916) 653-4086

Making Conservation a California Way of Life.

June 26, 2019

Julianne Polanco
State Historic Preservation Officer
1725 23rd Street, Suite 100
Sacramento, CA 95816

Attention: Natalie Lindquist

Re: Finding of No Adverse Effect for the Madera 41 South Expressway Project, Madera County, California

Dear Ms. Polanco:

The California Department of Transportation (Caltrans) is initiating consultation with the State Historic Preservation Officer (SHPO) regarding the Madera 41 South Expressway Project on State Route 41 in Madera County. This consultation is undertaken in accordance with the January 2014 *First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation* (PA).

Caltrans, as assigned by the Federal Highway Administration (FHWA), proposes to construct a four-lane divided expressway with controlled access extending from the existing terminus of the four-lane expressway from the Fresno metropolitan area to north of Avenue 15 in Madera County. The proposed project would construct a divided four-lane expressway with controlled access that can be expanded to a freeway as traffic volumes increase and funding becomes available. The width of the expressway alignment would be approximately 300 feet with a 94-foot median. The total length of the project is approximately 6.0 miles. The proposed project will be built in two phases. A full project description is included in the attached document.

Caltrans, as part of its identification efforts, has identified one historic property, the Madera Canal and associated feature Madera Canal Lateral 6.2 (hereafter Lateral 6.2), within the project Area of Potential Effects (APE). The Madera Canal and Lateral 6.2 are eligible for the National Register of Historic Places under Criterion A as a contributor to the Central Valley Project, a historic property. SHPO concurred in a letter dated March 1, 2016.

The attached Finding of No Adverse Effect (FOE) document summarizes Caltrans District 06's application of the Criteria of Adverse Effect for the Madera Canal and Lateral 6.2 within the

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

project APE. Caltrans has determined that the project will not result in an adverse effect on historic properties and proposes a **Finding of No Adverse Effect** for the project. To ensure that project activities will not change and result in an adverse effect, Caltrans will ensure that a Caltrans Principal Architectural Historian will review construction plans at 60 percent and 95 percent constructability reviews as well as monitor construction activities at Madera Canal Lateral 6.2 and where the Madera Canal intersects SR 41. Pursuit to PA Stipulation X.B.2, Caltrans is submitting the enclosed FOE for your review and concurrence.

Caltrans, as assigned by FHWA, intends to make a *de minimis* finding for Section 4(f) use of a historic property based on your concurrence in the Section 106 effect finding, pursuant to Section 6009(a) of SAFETEA-LU. Please note that if no response is received from the SHPO within 30 days of receipt of this submittal, Caltrans will still make a *de minimis* impact finding for purposes of Section 4(f) as described in our August 11, 2006 letter agreement.

Caltrans is requesting that SHPO concur with the Finding of No Adverse Effect for the proposed undertaking. We look forward to receiving your response within 30 days of receipt of this submittal per Stipulation X.B.2(a). Thank you very much for your assistance with this project. If you need any additional information, please do not hesitate to contact me or Acting Southern San Joaquin Valley Cultural Resources Branch Chief John Thomas at (559) 445-6451 or john.q.thomas@dot.ca.gov.

Sincerely,

ALEXANDRA BEVK NEEB
Section 106 Coordinator
Cultural Studies Office
Division of Environmental Analysis

Enclosure:
Finding of No Adverse Effect for the Madera 41 South Expressway Project, State Route 41, Madera County, California

cc: JThomas, JBrady

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

Appendix Q FOE Concurrence Letter

State of California • Natural Resources Agency — Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION — Lisa Ann L. Mangat, *Director*
OFFICE OF HISTORIC PRESERVATION
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

July 10, 2019

VIA EMAIL

In reply refer to: FHWA_2019_0627_001

Ms. Alexandra Bevk Neeb, Section 106 Coordinator
Cultural Studies Office
Caltrans Division of Environmental Analysis
1120 N Street, PO Box 942873, MS-27
Sacramento, CA 94273-0001

Subject: Finding of No Adverse Effect for Proposed Madera 41 South Expressway Project, Madera County, CA

Dear Ms. Bevk Neeb:

Caltrans is initiating consultation about the subject undertaking 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 Finding of No Adverse Effect Report for the proposed project (FONAE).

Caltrans proposes to construct a four-lane divided expressway with controlled access extending from the existing terminus of the four-lane expressway from the Fresno metropolitan area to north of Avenue 15 in Madera County. The proposed project would construct a divided four-lane expressway with controlled access that can be expanded to a freeway as traffic volumes increase and funding becomes available. The width of the expressway alignment would be approximately 300 feet with a 94-foot median. The total length of the project is approximately 6 miles. A full project description and depiction of the area of potential effects (APE) are located on pages 1-2 of the FONAE.

Caltrans, as part of its identification efforts, identified one historic property, the Madera Canal and associated feature Madera Canal Lateral 6.2, as eligible for the National Register of Historic Places (NRHP) as a contributor to the Central Valley Project. The SHPO concurred in a letter dated March 1, 2016.

Ms. Bevk Neeb
July 10, 2019
Page 2 of 2

FHWA_2019_0627_001

Caltrans has applied the Criteria of Adverse Effect and found that pursuant to Stipulation X.B.2 of the PA a Finding of No Adverse Effect is appropriate for this undertaking. Caltrans will ensure that a Caltrans Principal Architectural Historian will review construction plans at 60 percent and 95 percent constructability reviews as well as monitor construction activities at Madera Canal Lateral 6.2 where the Madera Canal intersects SR 41.

Based on review of the submitted documentation, I have no objection to Caltrans' finding of no adverse effect.

If you have any questions, please contact Natalie Lindquist at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov or Alicia Perez at (916) 445-7020 with e-mail at alicia.perez@parks.ca.gov .

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Appendix R Comments and Responses

This appendix contains the comments received during the public circulation and comment period from December 23, 2016 to February 8, 2017. A Caltrans response follows each comment presented.

Comment from Governor's Office of Planning and Research, State Clearinghouse and Planning Unit

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

February 7, 2017

John Thomas
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, CA 93726

Subject: Madera 41 South Expressway
SCH#: 2015051074

Dear John Thomas:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on February 6, 2017, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	**2015051074**
Project Title	Madera 41 South Expressway
Lead Agency	Caltrans #6
Type	EIR Draft EIR
Description	Caltrans proposes to improve 6.1 miles of SR 41 to a four lane expressway from 0.8 mile south of Avenue 11 undercrossing to 1.4 miles north of Avenue 15 in Madera County.

Lead Agency Contact

Name	John Thomas		
Agency	California Department of Transportation, District 6		
Phone	559 445 6451	*Fax*	
email			
Address	855 M Street, Suite 200		
City	Fresno	*State* CA	*Zip* 93726

Project Location

County	Madera, Fresno			
City	Madera			
Region				
Lat / Long				
Cross Streets	SR 41 from Ave 11 to 1.4 miles north of Avenue 15			
Parcel No.				
Township		*Range*	*Section*	*Base*

Proximity to:

Highways	41
Airports	
Railways	
Waterways	Friant Madera Canal
Schools	
Land Use	Ag and commercial

Project Issues	Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Cumulative Effects
Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Regional Water Quality Control Bd., Region 5 (Fresno); Air Resources Board, Transportation Projects; Native American Heritage Commission

Date Received 12/23/2016 *Start of Review* 12/23/2016 *End of Review* 02/06/2017

Note: Blanks in data fields result from insufficient information provided by lead agency.

Response to Comment from the State Clearinghouse

The State Clearinghouse letter acknowledges that Caltrans has complied with the review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. The California Department of Fish and Wildlife was the only agency to submit comments directly to the State Clearinghouse. Its letter is addressed later in this appendix.

Comment from Connell Dunning, U.S. Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

FEB 08 2017

Michelle Ray
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93726

Subject: Comments for the Draft Environmental Assessment for the Proposed Madera 41 South Expressway

Dear Ms. Ray:

The United States Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment (EA) for the proposed Madera 41 Expressway Project in Madera County, California. EPA offers the following comments, pursuant to the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508). We previously provided scoping comments on July 17th, 2015 addressing purpose and need, impacts to wetlands, risk of land subsidence, and cumulative impacts.

EPA appreciates Caltrans' integration of our scoping comments into the Draft EA. We also appreciate the decision to withdraw Alternative 1, the "Adopted Alternative," resembling the 1995 Preferred Alternative, from further consideration, as that alternative likely would have resulted in the greatest adverse impacts to wetlands, habitat, and other resources. We further recognize the discussion of the project's purpose and need, and its use in informing which Alternatives to withdraw from further consideration. Please consider the following comments when preparing the Final EA.

Aquatic Resources

We recognize that Caltrans is already coordinating with the US Army Corps of Engineers to determine impacts to jurisdictional waters, and note that the Draft EA states that the project may require a Clean Water Act (CWA) Section 404 permit. The Clean Water Act Section 404(b)(1) Guidelines (Guidelines) at 40 CFR Part 230.10(a) state that "... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." Fundamental to the Guidelines is the principle that no dredged or fill material can be discharged into the aquatic ecosystem unless it can be demonstrated that there is no less environmentally damaging practicable alternative that achieves an applicant's project purpose. Only the Least Environmentally Damaging Practicable Alternative (LEDPA) can be permitted under the Guidelines (40 CFR 230.10(a)).

To determine the LEDPA, the Guidelines call for an analysis that compares the total impact of each alternative, including direct, indirect, and cumulative impacts. Additionally, the project applicant must demonstrate that potential impacts to waters of the United States have been avoided and minimized to the maximum extent practicable (40 CFR 230.10(a) and 230.10(d)).

The Draft EA anticipates up to 3.9 acres of jurisdictional waters may be adversely impacted by one of the build alternatives. If the approved jurisdictional delineation for the proposed alternative result in 5 or more acres of permanent impacts to waters of the United States, we recommend coordinating with the signatory agencies of *The Memorandum of Understanding for The National Environmental Policy Act and Clean Water Act Section 404 Integration Process for Federal Aid Surface Transportation Projects in California.* The process is intended to facilitate achieving both NEPA and CWA Section 404 requirements simultaneously, thereby minimizing the potential for CWA permitting challenges after NEPA has been completed.

The Draft EA states that Alternative 2 may have more permanent and overall acres of impacts to vernal pool complexes, wetlands, and other waters of the United States than Alternative 4, but is the identified California Environmental Quality Act (CEQA) Environmentally Superior Alternative among Build Alternatives. The Draft EA describes that Alternative 4 may impact fewer acres of waters of the United States than Alternative 2, though Alternative 4 may also impact vernal pool complexes. 1

Recommendations:
EPA encourages Caltrans to continue its early coordination with the Army Corps of Engineers, U.S. Fish and Wildlife Service, and other resource agencies to minimize direct and indirect impacts to aquatic resources from the Madera 41 South Expressway project and to achieve creditable mitigation at Caltrans' Madera Pools area. In the Final EA, describe how impacts have been avoided and minimized. Include commitments for minimizing impacts and identify suitable mitigation where those impacts cannot be avoided. 2

EPA recommends that Caltrans consider natural and vegetated features for both the bridging or box culvert options for the Madera and Lateral 6.2 canals to promote natural ecosystem functioning and habitat connectivity during the operation of the proposed expressway.

Land Subsidence
Owing to prolonged drought, parts of California have experienced land subsidence from groundwater withdrawals, and that subsidence may be adding stress to infrastructure and roads. The subsidence vulnerability for Madera County may not strictly be related to sea level rise or to seismic liquefaction as the Draft EA states. We note that Caltrans is leading a district-by-district vulnerability assessment, which the proposed project could help inform.

Recommendation:
If land subsidence is being experienced near the project area, EPA recommends that the Final EA identify the threat, as well as mitigation measures and a strategy to address subsidence throughout the project site. Share any information acquired about subsidence in the area with vulnerability assessment planners at the local, regional, and statewide planning level. 3

To discuss the above comments, or to follow up with EPA with any questions, please feel free to contact Zac Appleton, the lead EPA reviewer for this project. Zac can be reached at Appleton.Zac@epa.gov or (415) 972-3321. Please provide additional information regarding anticipated impacts to waters and an approved jurisdictional determination for impacts to waters of the United States when available. Please also send the Final EA and signed Finding of No Significant Impacts to our agency at the above address (mail code ENF-4-2) when it is available for review.

Sincerely,

Tom Plows for

Connell Dunning, Transportation Team Supervisor
Environmental Review Section

Cc: Jen Schofield, US Fish and Wildlife Service
Leah Fisher, US Army Corps of Engineers

3

Response to Comments from Connell Dunning, U.S. Environmental Protection Agency

Thank you for your comments.

1. Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 has fewer wetland impacts, which is one key reason for this alternative's selection.

2. Caltrans continues to work closely with the U.S. Army Corps of Engineers to limit the project impacts to wetlands. See Appendix E for the latest proposed wetland mitigation.

3. General subsidence is present throughout the San Joaquin Valley. Preliminary engineering studies have not identified any subsidence outside of expected parameters. During the next phase of the project, geotechnical studies will be conducted and further engineering analysis will occur.

Second Comment from County of Madera Board of Supervisors

BOARD OF SUPERVISORS
COUNTY OF MADERA
MADERA COUNTY GOVERNMENT CENTER
200 WEST FOURTH STREET/MADERA, CALIFORNIA 93637
(559) 675-7700 / FAX (559) 673-3302 / TDD (559) 675-8970

MEMBERS OF THE BOARD
BRETT FRAZIER
DAVID ROGERS
ROBERT L. POYTHRESS
MAX RODRIGUEZ
TOM WHEELER

RHONDA CARGILL, Chief Clerk of the Board

May 2, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

The County of Madera submitted a comment letter on the State Route 41 Draft Environmental Impact Report (DEIR) on February 7, 2017. Following the submittal of that letter there have been several meetings with the California Department of Transportation District 6 Staff (CALTRANS) related to this project and our comment letter. It is our understanding that CALTRANS is looking at an interim solution that will last 15-20 years, which would involve Alternative 4 as proposed. This letter is meant to clarify our comment letter submitted on 2/7/2017. The County would be supportive of the proposed Alternative 4 alignment with the understanding that an interim solution constructing four travel lanes to just north of Avenue 15 would initially be constructed and implemented at this time in accordance with the terms of the Settlement Agreement between the County, CALTRANS, and Tesoro Viejo, Inc. and the approved Intersection Control Evaluation (ICE) for the near term highway improvements for the Tesoro Viejo project, and with limited displacement of commercial buildings. That being said please disregard our proposed alignment alternative submitted in our comment letter and proceed with the understanding that the County of Madera is supportive of the proposed interim alignment concept and selects Alternative 4 as the "Locally Preferred Alternative", contingent upon future funding and projected growth in the area. 1

The County strongly believes the remainder of comments in our letter dated 2/7/2017 need to be addressed. Please feel free to contact myself or the County staff with any questions or concerns. We are anxious to see this process be completed and move to the construction phase for the corridor. 2

Sincerely,

Max Rodriguez, Chairman
Madera County Board of Supervisors

Response to Comments from County of Madera Board of Supervisors

Thank you for your comments.

1. Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

2. See below for response to previous letter.

First Comment from County of Madera Board of Supervisors

BOARD OF SUPERVISORS
COUNTY OF MADERA
MADERA COUNTY GOVERNMENT CENTER
200 WEST FOURTH STREET/MADERA, CALIFORNIA 93637
(559) 675-7700 / FAX (559) 673-3302 / TDD (559) 675-8970

MEMBERS OF THE BOARD
BRETT FRAZIER
DAVID ROGERS
ROBERT L. POYTHRESS
MAX RODRIGUEZ
TOM WHEELER

RHONDA CARGILL, Chief Clerk of the Board

February 7, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

The County of Madera has reviewed the draft environmental impact report for the proposed expansion of State Route 41 from south of Avenue 11 to north of Avenue 15 and has the following comments.

The County entered into a Settlement Agreement and Release of All Claims with Caltrans and Tesoro Viejo, Inc., dated May 7, 2013, to resolve litigation brought by Caltrans in connection with the County's approval of the Tesoro Viejo Specific Plan, which provides for the development of the Tesoro Viejo project on the east side of State Route 41 between Avenue 12 and Avenue 15. The Settlement Agreement provides, among other things, that Caltrans will cooperate with the County in connection with the selection of a preferred alternative for future upgrading and possible realignment of State Route 41, and upon selection of the preferred alternative, Caltrans and the County will enter into a new or amended Freeway Agreement, and the County, in cooperation with Caltrans and the Madera County Transportation Commission, will develop a financing plan that fully funds the improvements to State Route 41.

The draft environmental impact report identifies two possible alternative alignments for the proposed expansion, one of which (Alternative 4) generally follows the present alignment, and the other of which (Alternative 2) generally locates the proposed alignment approximately 700 feet to the east of the present alignment. Both alternatives propose the excavation of storm water retention basins to the east of the present alignment on land that is located within County Service Area No. 22. Of the two alternatives, Alternative 2 is identified as the environmentally superior alternative. The environmental impact report should identify and discuss proposed future overcrossings at a minimum for the Avenue 13 and Avenue 14 alignments. These will serve as key transportation corridors for the region as it develops and should be protected through this study and proposed freeway agreement. 1

The Madera County Board of Supervisors on August 4, 2015 voted unanimously to oppose both Alignment 2 and Alignment 4 as proposed but requested that Caltrans consider an alternative alignment which would locate the new freeway on the existing State Route 41 alignment and expand to the east as opposed to Alternative 4 which eliminates the existing businesses between Avenue 14 and Avenue 15, on the west side of State Route 41. This dialogue is what was intended within the Settlement Agreement entered into between

Caltrans and the County; however it appears that Caltrans has not taken into consideration what the Madera County Board of Supervisors supports for this project. It should be noted that as part of that settlement agreement Madera County is responsible for the funding of this exercise and ultimately for the future construction of State Route 41. 2

The County has strong concerns that a Freeway Agreement would not be acceptable at this time for either Alignment 2 or Alignment 4 as proposed. As set forth in the draft environmental impact report, Alternative 2 is not consistent with County's Rio Mesa Area Plan and would thwart the goals of the Tesoro Viejo Specific Plan due to the proposed acquisition of approximately 2,300,000 square feet of land designated in the Tesoro Viejo Specific Plan for commercial and light industrial development. This loss of commercial and light industrial land will result in a substantial negative impact on job growth in the area, affecting the County's ability to achieve the stated goal of a 1:1 job to housing ratio in the Rio Mesa area. The jobs to housing ratio plays a key role in reducing the impacts upon the State Route 41 corridor by providing a comprehensive master planned community where individuals have an opportunity to live, work, play, and shop all within the Rio Mesa Area Plan boundaries. 3

The County has concerns regarding the potential impacts that acquisition of right-of-way for Alternative 4 may have on existing businesses located west of State Route 41. The County has also had the opportunity, however, to review a further alternative prepared and attached as Exhibit A, which proposes to maintain the existing two lanes of State Route 41 for southbound traffic and to construct an additional two parallel lanes for northbound traffic to the east of the existing right-of-way. This would impact only one residence and the existing Chevron station located at the southwest corner of the intersection of State Route 41 and Avenue 15. All other impacts to the existing businesses on the west side of State Route 41 and the resulting relocation costs would be eliminated, and the cost of acquisition of new right-of-way would be significantly reduced because it would be less disruptive to the proposed commercial and light industrial uses planned for the Tesoro Viejo project. This proposed alternative would have the added advantage of eliminating the need to reroute traffic during construction, as the existing travel lanes could continue to be used. 4

Consideration of the revised alternative should also consider the relocation of the proposed storm water retention basins. Basins proposed along the eastern side of State Route 41 under both Alternatives will interfere with approved and contemplated patterns of development. Those basins located east of State Route 41 will occupy area planned to be developed for commercial and light industrial use, and the property located to the northeast of the intersection of Avenue 12 and State Route 41 has recently been acquired by the Fresno Community Hospital and Medical Center for the potential development of new medical facilities. The County, through County Service Area No. 22, is prepared to work with property owners within County Service Area No. 22 to create storm water retention basins that would accommodate Caltrans' needs for storm water retention along with the needs of projected development in the area. This could further reduce the cost of acquiring land for construction of either Alternative 2 or Alternative 4 and avoid redundancy in the number of required storm water facilities. 5

The County would also like clarification on the status of the Madera Pools property. This property, as we understand, has yet to be accepted as habitat mitigation from any Federal or State Agencies, and therefore should not be provided the same level of protection that it has to date through this process. The property and area surrounding the Madera Pool property has been planned for urban development for more than 22 years and therefore, habitat mitigation should be provided for outside of the Rio Mesa Area plan. We would request that Caltrans immediately coordinate its environmental efforts on providing for habitat mitigation on other better suitable properties adjacent to or nearby the Rio Mesa Area on lands not planned for urban development. 6

Madera County is anxious to proceed with the expansion of State Route 41 from its existing two lane configuration to a four lane configuration from Avenue 10 ½ to State Route 145. We have a robust Road

Impact Fee Program in place for that expansion, and we anticipate by early Spring of 2017 that we will immediately have available a minimum of $20,000,000.00 to move through design, right-of-way acquisition and construction of a four lane facility from Avenue 10 ½ to Avenue 12 ½. The County's desire is to commence construction on that section by the Spring of 2018. The County is proceeding with an update to our existing Road Impact Fee program to provide the necessary funding of Rio Mesa Boulevard which will act as a parallel roadway of State Route 41 from the existing interchange at Children's Boulevard to Avenue 15 through the Rio Mesa Area Plan. This roadway will substantially reduce the impacts from development in the Rio Mesa Area on State Route 41. Madera County anticipates by a conservative estimate that just the development of the Tesoro Viejo Specific Plan and Riverstone Specific Plan would generate over two million dollars annually in single family dwelling impact fees in the 2017-2018 fiscal year and increase substantially in future fiscal years. This does not account for any commercial development or development that will occur throughout the entirety of the County which our Road Impact Fee program captures and provides the necessary funding for the development of the State Route 41 infrastructure. 7

County officials are prepared to meet with you at your convenience to discuss these issues in more detail. In the meantime, please do not hesitate to contact the undersigned with any questions or if you need any additional information with regard to this matter.

Sincerely,

Max Rodriguez, Chairman
Madera County Board of Supervisors

Response to Comments from County of Madera Board of Supervisors

Thank you for your comments.

1. The Madera 41 South Expressway project does not preclude future overcrossings at Avenue 13 and Avenue 14. Traffic demand does not currently warrant their inclusion in the current proposed project. However, the freeway agreement that will be executed by Caltrans and Madera County will include future grade separations at Avenue 13 and Avenue 14. A separate project to construct overcrossings will need to be planned and programmed. Section 1.4.1 has been updated to include language about overcrossings.

2. The May 2, 2017 letter from Madera County (see previous letter) acknowledges that Madera County is now in favor of building Alternative 4 in two phases.

3. Caltrans has identified Alternative 4 as the recommended preferred alternative.

4. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. This will allow existing businesses along State Route 41 to operate for several years before needing to relocate. See Section 1.6 for and Figure 1-6 for more details.

5. Caltrans is required to include all project features in the environmental analysis of a project. Stormwater basins are a required feature of the project and are therefore included as part of the analysis. There are currently no facilities near the project that can handle the expected stormwater discharge. If appropriate facilities become available before construction of the project, it may be possible to reduce the capacity of the proposed basins or eliminate some of them altogether. At this time, they must be included in the environmental analysis. See Appendix S for more information.

6. The Madera Pools property is currently being certified as a mitigation site for several Caltrans projects. It is near the Madera 41 South Expressway project, but it is not connected to the project.

7. Caltrans will continue to work with Madera County to make improvements on the state highway system in Madera County. Phase 1 of the project is tentatively set for construction in 2022.

Comment from Andrew Medellin, Madera County Transportation Commission

MADERA CTC
Madera County Transportation Commission

2001 Howard Road, Suite 201
Madera, California 93637

Office: 559-675-0721 Fax: 559-675-9328
Website: www.maderactc.org

February 7, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report – SCH# 2015051074

Dear Mr. Putler,

Thank you for the opportunity to comment on the State Route 41 Draft Environmental Impact Report (EIR) – SCH# 2015051074. The Madera County Transportation Commission (MCTC) has no comment on the EIR at this time.

The MCTC is the Regional Transportation Planning Agency (RTPA) and the designated Metropolitan Planning Organization (MPO) for Madera County. The MCTC's role is to foster intergovernmental coordination and to develop a consensus among its members with regard to multi-jurisdictional transportation issues. In this regard, we would encourage the Department of Transportation (Caltrans) to continue its ongoing efforts to partner with the County of Madera in order to develop a consensus for this project, including alternatives that are acceptable to all affected agencies.

MCTC encourages Caltrans to review and consider any additional alternatives the County may identify. The County of Madera's State Route 41 Draft Environmental Impact Report comment letter may further outline additional identifiable alternative(s) and provide specific justification. It is recommended that a compromise be considered for the betterment of the County of Madera and its investments. It is further recommended that Caltrans reach out to the County of Madera to discuss the County's issues and concerns in more detail.

Patricia Taylor, MCTC Executive Director, is available to assist in gaining consensus among the agencies to achieve a successful project. Please do not hesitate to contact Ms. Taylor at patricia@maderactc.org or Dylan Stone, MCTC staff, at dylan@maderactc.org for additional information or (559) 675-0721.

Sincerely,

Andrew Medellin, Chairman
Madera County Transportation Commission

Member Agencies: County of Madera, City of Madera, City of Chowchilla

Response to Comments from Andrew Medellin, Madera County Transportation Commission

Thank you for your comments.

Caltrans will continue to work with Madera County to make improvements on the state highway system in Madera County. Working with Madera County, Caltrans modified Alternative 4 to be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. This change will allow the project to complement local planning.

Comment from Bobby Kahn, Madera County Economic Development Commission

MADERA COUNTY EDC ECONOMIC DEVELOPMENT COMMISSION

California Department of Transportation
Sierra Pacific Environmental Analysis Branch
Richard Putler, Senior Environmental Planner
855 M Street, Suite 200
Fresno, CA 93721

Dear Mr. Putler:

The Madera County Economic Development Commission (MCEDC) has reviewed the draft environmental impact report for the proposed expansion of State Route 41 from south of Avenue 11 to north Avenue 15 and has the following comments.

The draft environmental impact report identifies two possible alternative alignments for the proposed expansion one of which (Alternative 4) generally follows the present alignment, and the other of which (Alternative 2) general located the proposed alignment approximately 700 feet to the east of the present alignment. Both alternatives propose the excavation of storm water retention basins to the east of the present alignment on land that is located within County environmental impact report should identify and discuss proposed future overcrossings at a minimum for the Avenue 13 and Avenue 14 alignments. These will serve as key transportation corridors for the region as it develops and should be protected through this study and proposed freeway agreement. 1

MCEDC has strong concerns that a Freeway Agreement would not be acceptable at this time for either Alignment 2 or Alignment 4 as proposed. As set forth in the draft environmental impact report, Alternative 2 is not consistent with County's Rio Mesa Area Plan and would thwart the goals of the Tesoro Viejo Specific Plan due to the proposed acquisition of approximately 2,300,000 square feet of land designated in the Tesoro Viejo Specific Plan for commercial and light industrial development. This loss of commercial and light industrial land will result in a substantial negative impact on job growth in the area, affecting the county's ability to achieve the stated goal of a 1:1 job to housing ratio in the Rio Mesa area. The jobs to housing ratio plays a key role in reducing the impacts upon the State Route 41 corridor by providing a comprehensive master planned community where individuals have an opportunity to live, work, play, and shop all within the Tesoro Viejo specific Plan boundaries. 2

Consideration of the revised alternative should also consider the relocation of the proposed storm water retention basin. Basins proposed along the eastern side of State Route 41 under both Alternatives will interfere with approved and contemplated patterns of development.

"Madera County, The Perfect Location"

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Those basins located east of State route 41 will occupy area planned to be developed for commercial and light industrial use, and the property located to the northeast of the intersection of Avenue 12 and State Route 41 has recently been acquired by the Fresno Community Hospital and Medical for the potential development of new medical facilities. 3

In closing, the improvement of State route 41 from south Avenue 11 to north of Avenue 15 is a critical component in the successful development of the Riverstone Specific Plan and the Tesoro Viejo Specific Plan. However, the county and Caltrans need to work collaboratively in designing a route that will help maximize job creation through the construction of new commercial and industrial development in the area.

Respectfully Submitted,

Bobby Kahn
Executive Director

Response to Comments from Bobby Kahn, Madera County Economic Development Commission

Thank you for your comments.

1. The Madera 41 South Expressway project does not preclude future overcrossings at Avenue 13 and Avenue 14. Traffic demand does not currently warrant their inclusion in the proposed project. However, the freeway agreement that will be executed by Caltrans and Madera County will include future grade separations at Avenue 13 and Avenue 14. A separate project to construct overcrossings will need to be planned and programmed. Section 1.4.1 has been updated to include language about overcrossings.

2. Working with Madera County, Caltrans modified Alternative 4 to be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. This change will allow the project to complement local planning.

3. Caltrans is required to include all project features in the environmental analysis of a project. Stormwater basins are a required feature of the project and are therefore included as part of the analysis. There are currently no facilities near the project that can handle the expected stormwater discharge. If appropriate facilities become available prior to the construction of the project, it may be possible to reduce the capacity of the proposed basins or eliminate them altogether. At this time, they must be included in the environmental analysis. See Appendix S for more information.

Comment from Gary W. Walker, North Fork Rancheria of Mono Indians of California

NORTH FORK RANCHERIA
OF MONO INDIANS OF CALIFORNIA

TRIBAL GOVERNMENT OFFICE
P.O. Box 929
North Fork, CA 93643-0929
(559) 877-2461
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1-866-291-9909

February 7, 2017

Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
855 M Street, Suite 200
Fresno, CA 93721

RE: Madera 41 South Expressway

Dear Mr. Putler

The North Fork Rancheria of Mono Indians of California has reviewed the Draft EIS/EA and Section 4 (f) Evaluation for the Madera 41 South Expressway. We clearly understand the purpose and need of the expressway due to the future growth in this area of Madera County and associated growth of Fresno County.

The proposed project area is a shared tribal area that's been utilized by the local tribes for thousands of years. There are many pre-historic sites that exist along and within the Highway 41 corridor. Little Table Top Mountain and the nearby San Joaquin River are especially important to the tribes. These features are important elements in relation to the historical ties that the tribes have in the project area. The Madera 41 South Expressway project has the potential to unearth culturally significant objects due to the proximity to the San Joaquin River and associated trail systems that used to exist prior to the European settlement era. We are providing the following comments for your consideration as you move forward with a final environmental document.

Summary ix:
Potential impact table: Utility service relocation-Relocates aerial and buried electric lines, telephone lines, cable television lines, and modifies the Madera Canal and Lateral 6.2 canal.

Comment:
Both alternatives have the potential to relocate utility service lines. The tribe is concerned over the ground disturbing impacts that this will have to subsurface archaeological deposits. 1

Summary ix:
Potential impact table: Water Quality/Storm Water Runoff-Requires four storm water detention basins requiring 71 aces of excavation (Alternative 2) and Requires five storm water detention basins requiring 88 aces of excavation (Alternative 2)

Comment:
Both alternatives have the potential to impact cultural resources. The tribe is concerned over the ground disturbing impacts that this will have to subsurface archaeological deposits. 2

Page 23:
Proposed map layout of alternatives.

Comment:
Alternative four has the least ground disturbing impacts because of the existing highway and should be highly considered. 3

Page 59 (third paragraph):
After a preferred alternative is identified and during the design phase of the project, a more detailed study would be conducted to determine the necessary relocation of additional utilities. Caltrans would meet with the affected utilities to coordinate the details for relocations and easements to avoid or minimize any interruption in services.

Comment:
Upon the identification of the preferred alternative, the tribe is requesting to also be notified of the design changes for utilities. 4

Page 71:
No avoidance, minimization, and mitigation measures are anticipated…If cultural materials are encountered during construction, it is the policy of Caltrans that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the discovery.

Comment:
Mitigation measures should be in place for ground disturbing activities related to cultural resources. The tribe has highly qualified individuals who will be able to provide monitoring services on this project. During the construction of the project, who will be responsible to locate cultural materials? Are heavy equipment operators and other field or engineering staff skilled to determine whether human remains or bone fragments are disturbed? This is a concern for the tribe; therefore there should be mitigation measures in place for the entire project due to the amount of ground disturbance projected. 5

Page 82:
The following mitigation measures are recommended to minimize potential impacts of the project: All open excavations more than 5 feet deep in native sediments of the Modesto and Turlock Lake Formations should be monitored full-time by a qualified paleontologist…during grading, sand interbeds with the Riverbank formation should be monitored part-time by a qualified paleontologist…should be spot checked by a qualified paleontologist.

Comment:
The potential of both paleontological and cultural resources are not equal in its mitigation measures. This inequality is of concern to the tribe. The likelihood of discovery of both types of resources may be equal in probability; therefore there should be equal concern and equal monitoring. 6

Page 233:
CEQA Checklist V. Cultural Resources d.) Disturb any human remains, including those interred outside of formal cemeteries.

Comment:
Native American human remains and paleontological resource surveys and technical studies can only provide a probability of where a resource could be. The likelihood of discovery can be anywhere along the project, yet both resources are on opposite sides of the significance spectrum of the CEQA checklist. One is marked as no impact while the other is marked as Potentially Significant Impact. The inequality of these two resources is of concern to the tribe. The impact in disturbing human remains should be of equal significance. 7

Our tribe is committed to the protection and preservation of our culture. We have a skilled workforce who will be able to provide monitoring services for this project. We have experience in working with local, state and federal agencies and are prepared to participate in the project as a subcontractor. The Draft EIR/EA mitigation measures for cultural resources are absent, we encourage you to take into consideration our concerns and develop measures to protect and preserve our culture. For further information please contact our Environmental Protection Department Environmental Director, Ms. Christina McDonald, at 559-877-2461 or e-mail at cmcdonald@nfr-nsn.gov

Respectfully,

Gary W Walker

Gary W. Walker
Tribal Chairperson

Response to Comments from Gary W. Walker, North Fork Rancheria of Mono Indians of California

Thank you for your comments.

1, 2 and 5. No archaeological resources were identified within the area of potential effects. The project is located above the Modesto and Turlock Lake Formations, which have a very low probability of containing archaeological resources. No avoidance, minimization, and mitigation measures are anticipated.

If cultural materials or remains are encountered during construction, it is the policy of Caltrans that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the discovery.

However, additional surveys would be required if project plans are changed to include areas that have not been previously surveyed, including the parcels where access was denied. Expansion of the area of potential effects for construction easements or utility relocation could result in supplemental studies.

3. Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

4. We will continue to update you periodically as the project progresses to the next phases.

6 and 7. The project is located above the Modesto and Turlock Lake Formations, which have a very low probability of containing archaeological resources, but a high probability of paleontological resources being found. Cultural studies do not indicate a need for archaeological monitors, but if cultural materials or remains are encountered during construction, it is the policy of Caltrans that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the discovery.

Comment from Zack Follett, Kuppa Joy

KUPPA JOY

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

Kuppa Joy is currently in discussions with Tesoro Viejo, Inc. to acquire commercially zoned property in the Tesoro Viejo project to establish a new store. We have reviewed the draft environmental impact report for the proposed expansion of State Route 41, according to which the right-of-way for Alternative 2 will be located approximately 700 feet to the west of the existing alignment of State Route 41. The proposed realignment of Alternative 2 would go right through the middle of the commercial properties in the Tesoro Viejo project and make it very difficult, if not impossible, for Kuppa Joy to locate a viable store there.

The draft environmental impact report also fails to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. The proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 on which they presently rely and would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would detract from the value and development potential of properties in the immediate area, including the development of new residential units in the area. Kuppa Joy depends on new residential development to increase its customer base and profitability. Loss of new development would affect the viability of operating a new store in the Tesoro Viejo project.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the existing alignment of State Route 41. Location of the freeway along the existing right-of-way would preserve more of the commercial property in Tesoro Viejo and allow Kuppa Joy to develop a viable store. Although Alternative 4 could require the relocation of certain of the existing businesses located west of the present alignment, relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the proposed realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

I am prepared to discuss these issues with you in more detail at your convenience. In the meantime, please contact me with any questions regarding this matter.

Sincerely,

Zack Follett

518 Clovis Ave, Clovis, CA 93612
(559) 298-7234

Response to Comments from Zack Follett, Kuppa Joy

Thank you for your comment.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Sherri Dodd, Arancio, LLC

ARANCIO, LLC

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

Arancio, LLC is the owner of approximately 87.65 acres of land located north of Avenue 12 and east of State Route 41. We have reviewed the draft environmental impact report for the proposed expansion of State Route 41, according to which the right-of way for Alternative 2 will be located approximately 700 feet to the west of the existing alignment of State Route 41. The draft environmental impact report fails, however, to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. This proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 that they presently enjoy, which would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would affect the value and development potential of our property and other properties in the immediate area.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the existing alignment of State Route 41, which would require the relocation of certain of the existing businesses located west of the present alignment, but such relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the proposed realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Sincerely,

Sherri Dodd

7020 N. Van Ness Blvd., Fresno, CA 93711
TEL: (559) 256-7000 FAX: (559) 256-7010

Response to Comments from Sherri Dodd, Arancio, LLC

Thank you for your comment.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Robert McCaffrey, Rio Mesa Holdings, LLC

RIO MESA HOLDINGS, LLC

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

Rio Mesa Holdings, LLC owns approximately 1,600 acres of property located east of State Route 41 between Avenue 12 and Avenue 15. We have reviewed the draft environmental impact report for the proposed expansion of State Route 41 according to which Alternative 2 would relocate the right-of-way approximately 700 feet to the east of the existing alignment and construct an interchange at Avenue 15. The proposed roadway and interchange would take approximately 57.73 acres of property and would isolate the land located between the proposed alignment and the existing alignment, depriving it of all economically viable use.

In addition to the direct impacts on our property, the draft environmental impact report fails to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. This proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 that they presently enjoy, which would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would affect the value and development potential of our property and other properties in the immediate area.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the existing alignment of State Route 41, and the proposed interchange would affect far less of our property and allow the remaining area of the property to remain in one piece. Although Alternative 4 would require the relocation of certain of the existing businesses located west of the present alignment, such relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the proposed realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative. 1

Another issue of concern is the proposed location under both Alternatives of large storm water retention basins on our property to accommodate runoff from the proposed freeway. We and other property owners, along with the County of Madera, are prepared to work with you to relocate the proposed basins in areas that would be less detrimental to our property interests. 2

I am prepared to discuss these issues with you in more detail at your convenience. In the meantime, please contact me with any questions regarding this matter.

Sincerely,

Robert McCaffrey

7020 N. Van Ness Blvd., Fresno, CA 93711
TEL: (559) 256-7000 FAX: (559) 256-7010

Response to Comments from Robert McCaffrey, Rio Mesa Holdings, LLC

Thank you for your comments.

1. Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

2. Caltrans is required to include all project features in the environmental analysis of a project. Stormwater basins are a required feature of the project and are therefore included as part of the analysis. There are currently no facilities near the project that can handle the expected stormwater discharge. If appropriate facilities become available before construction of the project, it may be possible to reduce the capacity of the proposed basins or eliminate them altogether. At this time, they must be included in the environmental analysis. See Appendix S for more information.

Comment from Jeffrey M. Reid, McCormick Barstow LLP

McCORMICK
BARSTOW LLP
ATTORNEYS AT LAW

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Partner
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and District of Columbia)
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February 8, 2017

Via Email to Richard.putler@dot.ca.gov
Mr. Richard Putler
Senior Environmental Planner
California Department of Transportation
1352 West Olive Avenue
Fresno, CA 93778-2616

Re: Madera 41 South Expressway EIR
State Clearing House #2015051074

This letter is provided on behalf of Mr. and Mrs. Richard Gunner, owners of lands in the environs of the proposed Madera 41 South Expressway Project (the "Project").

This is a comment letter concerning the Draft Environmental Impact Report ("DEIR") for the Project. Please ensure this letter is included in the Record of Proceedings regarding the consideration of the Project by the California Department of Transportation ("Caltrans") and the California Transportation Commission (the "CTC").

1. Insufficient Analysis, Disclosure and Mitigation of the Land Use Impacts. Mr. and Mrs. Gunner own the lands that are generally referred to as Gunner Ranch East that is entitled with planned land use under the Madera County Rio Mesa Project. Its location is generally depicted on Figure 2-3 of the DEIR.

Section A of Figure 1-4 of the EIR depicts a tremendously sized ponding basin at southeast corner of Highway 41 and Avenue 12. That ponding basin is on lands of Mr. and Mrs. Gunner that comprise part of the Gunner Ranch East Project. 1

The EIR provides no disclosure or analysis of the land uses that have been allocated by the Rio Mesa Area Plan at these environs. It therefore does not provide sufficient information to inform the public or decision makers about the consequences of the Project on the adopted land use plans of Madera County.

Without limiting the generality of the foregoing, the land use plans of Rio Mesa Area Plan are nowhere depicted or analyzed except for the impact on a few of the projects that have obtained addition development entitlements beyond the Area Plan. However, the Area Plan is itself a meaningful and important element of the County's existing land use policies, and are the basis for the other project approvals. Unfortunately, the DEIR effectively ignores and thereby negates the impacts of the Project on those land use policies.

2. Insufficient Analysis of Alternative Ponding Basin Locations and Designs. Additional analysis of alternative sizes and locations of the ponding basins are required as a means of evaluating effective mitigation measures where, as here, the mitigation measures themselves will create significant environmental impacts. However, there is insufficient analysis regarding the basis for the intended size,

McCORMICK
BARSTOW LLP
ATTORNEYS AT LAW

Mr. Richard Putler
Senior Environmental Planner
California Department of Transportation
February 8, 2017
Page 2

location, and design of the ponding basins in the EIR sufficient to inform reasonable deliberations concerning the impacts of those basins on the Madera County Land Use Plans. 2

3. Recirculation. The DEIR must be updated to incorporate appropriate discussion of the Rio Mesa Area Plan Land Use Plans, including the land uses allocated to Gunner Ranch East. Such an update will involve significant new information about new impacts that have not been sufficiently evaluated or mitigated. It will therefore require recirculation of the DEIR for further public review and comment. 3

4. Insufficient Analysis of Project Alternatives. CEQA requires that an EIR include a reasonable number of alternatives that would potentially lessen the impacts of the Project. The discussion must be set forth in a manner to foster meaningful public participation and informed decision-making. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR (CEQA Guidelines Section 15126.6(f)). 4

For the reasons detailed in items 1 through 3 above, the DEIR fails to conduct an adequate analysis of the Rio Mesa Land Use Plans allocated to the Gunner Ranch East properties, and fails to provide sufficient analysis of alternatives that would avoid or mitigate the significant impact and impairment of those land use plans.

5. Conclusion. Based on the foregoing, we respectfully request that Caltrans and the CTC not consider the Project EIR until after there has been appropriate inclusion of the required analysis of the impacts on the land use entitlements allocated to the Gunner Ranch East lands that will be impaired by the location and design of the intended ponding basin.

Sincerely,
McCORMICK, BARSTOW, SHEPPARD,
WAYTE & CARRUTH LLP

Jeffrey M. Reid

Response to Comments from Jeffrey M. Reid, McCormick Barstow LLP

Thank you for your comments.

1. Caltrans is required to include all project features in the environmental analysis of a project. Stormwater basins are a required feature of the project and are therefore included as part of the analysis. There are currently no facilities near the project that can handle the expected stormwater discharge. If appropriate facilities become available before construction of the project, it may be possible to reduce the capacity of the proposed basins or eliminate them altogether. At this time, they must be included in the environmental analysis. See Appendix S for more information.

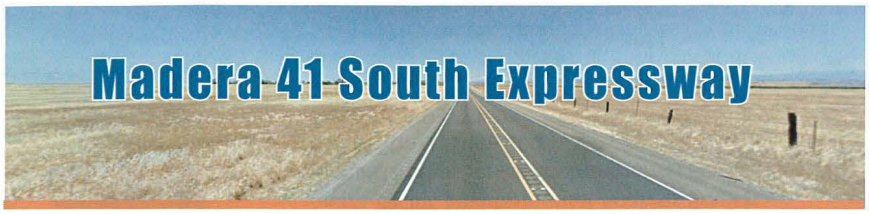
Madera County will need to update its general plan to accommodate the Madera 41 South Expressway project. The project is being undertaken with the cooperation Madera County. One of the main purposes of this document is to update the 1995 Route Adoption and the freeway agreement with Madera County

2. The proposed basins have been located by Caltrans hydraulics engineers based on topography and proximity to existing waterways (i.e. Root Creek). The size of basins is derived from the low permeability of the soils and the requirement to have stormwater surface discharge dissipate as quickly as possible. See Appendix S for more information.

3. The DEIR for the Madera 41 South Expressway Project is not the appropriate document to account for changes to land use. Caltrans will continue to work with Madera County to integrate the proposed project into the Madera County General Plan.

4. See Section 1.4 and Section 1.7 for more information on the range of alternatives analyzed for this project. See Chapter 4 for a discussion of public outreach conducted for this project.

Comment from Parwinder Singh Parmar



Public Hearing
Comment Card

NAME: Parwinderpal Singh Parmar

ADDRESS: 2806 Rising mist Ln CITY: Bakersfield CA ZIP: 93313

REPRESENTING: ORIG ASMT 051-364-001-000 / ASMT NUMBER 990-134-601-001

Do you wish to be added to the project mailing list? ☒ YES ☐ NO

Please drop comments in the Comment Box or

Mail to: California Department of Transportation
Sierra Pacific Environmental Analysis Branch
Richard Putler, Senior Environmental Planner
855 M Street, Suite 200
Fresno, CA 93721
or Email to: richard.putler@dot.ca.gov

I would like the following comments filed in the record (please print): I own the above said property (Corner of Huntington and AVE 15). This is a Commercial property but I attend the meeting last month regarding change of Hwy 41. I realized there is ~~not~~ no entrance to this property from AVE 15, I also raised this point when I was in meeting.

I spent a lot of money ($380,000) to buy this land with lot of different plans. If there is no entrance or access to this property from ave 15 my all investment will go in loss.

So Please, I want the access to this property from AVE 15. I must have an access to ~~this~~ my property from ave 15, NO matter which ~~ave~~ plan for 41 Hwy will go through.

Deadline for comments February 8, 2017

PH:- 661-332-1690 Regards Parwinder Parmar

Response to Comments from Parwinder Singh Parmar

Thank you for your comments.

Caltrans has identified Alternative 4 as the recommended preferred alternative. As presented, the future interchange at Avenue 15 will sever direct access from Huntington Rd to Avenue 15. Access between Avenue 15 and your property could be accomplished through the use of Avenue 14½ and Brookhill Rd. Your comment will be noted during the design phase of the project.

Comment from Jay Gill

JAY GILL

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

Re: State Route 41 Draft Environmental Impact Report – SCH# 2015051074

Dear Mr. Putler,

I am the owner of approximately 155.76 acres of land located north of Avenue 12 and east of State Route 41. I have reviewed the draft environmental impact report for the proposed expansion of State Route 41, according to which the right-of-way for Alternative 2 will be located approximately 700 feet to the west of the existing alignment of State Route 41. The draft environmental impact report fails, however, to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. This proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 that they presently enjoy, which would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would affect the value of development potential of my property and other properties in the immediate area.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the exiting alignment of State Route 41, which would require the relocation of certain of the existing businesses located west of the present alignment, but such relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the propose realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Sincerely,

Jay Gill

1100 S. Madera Avenue - Madera, CA 93537
(559) 906-6065

Response to Comments from Jay Gill

Thank you for your comments.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Goldie Lewis, Tesoro Viejo Master Mutual Water Company

TESORO VIEJO
MASTER MUTAL WATER COMPANY

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

The Tesoro Viejo Master Mutual Water Company has been organized to provide water, wastewater, and reclaimed water services to the Tesoro Viejo project and other property owners located east of the present alignment of State Route 41 between Avenue 12 and Avenue 15. We have reviewed the draft environmental impact report for the proposed expansion of State Route 41 and are extremely concerned regarding the proposed alignment of Alternative 2, which would locate the right-of way for State Route 41 approximately 700 feet to the east of the existing alignment. This alignment would isolate certain parcels of land within TVMMWC's service area between the proposed alignment and the existing right-of-way which is proposed to be retained as a frontage road. In order to service these parcels, TVMMWC would be required to install unplanned additional facilities to provide water, wastewater, and reclaimed water infrastructure, including potentially redundant systems and pumping stations. These additional facilities would greatly increase TVMMWC's infrastructure and maintenance costs. 1

Alternative 2 also affects TVMMWC's planned storm drain systems within portions of the Tesoro Viejo project area, which would require the rerouting of planned storm drain infrastructure including piping and retention basins. These rerouted facilities will need to be relocated elsewhere within the project, which will likely reduce the planned residential units, commercial space, school sites, and/or open space parks and parkways. Caltrans should also consider the effects that the alignment of Alternative 2 would have on TVMMWC's Phase II MS4 permit and how this would affect the water quality runoff for the entire community.

Although certain of these impacts could be avoided under Alternative 4 in the draft environmental impact report, the impacts on TVMMWC's storm water drainage system would also occur due to the proposed location of storm water retention basins under Alternative 4. Certain of these impacts could be reduced or eliminated if the proposed storm water retention basins were to be relocated. TVMMWC is proposing to provide storm water retention basins in connection with improvements to be constructed for the Tesoro Viejo project and is prepared to cooperate with Caltrans and the County of Madera regarding the ability to share storm water facilities in order to limit the impacts on planned facilities and minimize the amount of land that would otherwise be required for new basins. 2

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Sincerely,

Goldie Lewis

7020 N. Van Ness Blvd., Fresno, CA 93711
TEL: (559) 256-7000 FAX: (559) 256-7010

Response to Comments from Goldie Lewis, Tesoro Viejo Master Mutual Water Company

Thank you for your comments.

1. Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

2. Caltrans is required to include all project features in the environmental analysis of a project. Stormwater basins are a required feature of the project and are therefore included as part of the analysis. There are currently no facilities near the project that can handle the expected stormwater discharge. If appropriate facilities become available before construction of the project, it may be possible to reduce the capacity of the proposed basins or eliminate them altogether. At this time, they must be included in the environmental analysis. See Appendix S for more information.

Comment from Frank Hendrix

Atkinson-Baker Court Reporters
www.depo.com

1 January 11, 2017 Madera, California
2
3 PROCEEDINGS
4
5 MR. GARDENER: My name is Christopher Gardner.
6 I work at Caltrans. I'm a project manager. The date
7 is January 11th, 2017, 4:00 o'clock, and we are opening
8 the public hearing for the Madera 41 South Expressway
9 Project.
10 ***
11 (5:19 p.m.)
12 THE REPORTER: Please state your name, address
13 and county of residence.
14 MR. HENDRIX: 14108 Highway 41, Madera,
15 California.
16 THE REPORTER: Your name, please.
17 MR. HENDRIX: Frank Hendrix, H-e-n-d-r-i-x.
18 THE REPORTER: You may proceed.
19 MR. HENDRIX: I'm very concerned, and this
20 sounds foolish, but you're going to put that road in,
21 and I have that commercial piece of property there,
22 13 1/2 acres, and is willing to put out about
23 $2,000,000 to develop it, but when Caltrans says
24 they're going to come on the west side of the road,
25 when before they told me they were going to go on the

4

Public Hearing Comments
January 11, 2017

1 east side of the road, that put a stop to developing on
2 my property, which is zoned commercial, and spending
3 tens of thousands of dollars for the rezone and
4 environmental impact and all the rest of the stuff, and
5 the getting --
6 What do they call that Sherri, the surveyors?
7 Well, we had to have it surveyed, and -- but,
8 we had it --
9 Sherri. Sherri. Can you come over here for a
10 minute. I don't like this.
11 MS. SHERRI: Yes.
12 MR. HENDRIX: Those guys that went out there
13 and we had it all subdivided and had all that work,
14 what were they called?
15 MS. SHERRI: Surveyors?
16 MR. HENDRIX: Yeah.
17 MS. SHERRI: Architects?
18 MR. HENDRIX: And laid out the property, laid
19 out and all that, what are they called?
20 MR. SHERRI: I don't know. You had surveyors
21 come out and you had an architect draw it up. Planner?
22 Was it a city planner? I'm not sure what you're
23 talking about exactly.
24 MR. HENDRIX: No. It's --
25 MS. SHERRI: Property plan? I don't know.

They drew up a mock subdivision for you.

MR. HENDRIX: We had a subdivision map developed for it, which was very expensive. To move forward on the project would be about $2,000,000, from what I understand, what they told me, for the layout and development of making ten commercial pieces of property there, but it's all been put on hold. I can't develop it for business, commercial businesses, without something that tells me what you're going to do, the time involved.

So, now, I'm just -- looks like for the next 10, 15 years that you're just going to tie me up and I can't do anything with my property. That's a damn shame. So, please, let me know what you're going to do. You're going to land lock me either way, and I need to know what my alternatives are, but it doesn't look good.

(5:23 p.m.)

***

(Whereupon the Public Meeting concluded at 7:00 p.m.)

Response to Comments from Frank Hendrix

Thank you for your comment.

Caltrans has identified Alternative 4 as the recommended preferred alternative. This alternative will have a direct impact on your property. An estimated 4.4 acres of your land will be acquired for the construction of the complete project. Access to the remainder of your parcel will likely be via Avenue 14 across the Lateral 6.2 canal.

Phase 1 of the project is tentatively set to begin construction in 2022. Construction of Phase 2 is projected in 2035. Right of way staff will contact you during the next phase of the project after surveys are completed. Please see Appendix C for more information on your rights as a property owner.

Comment from Sam Kermanian, Canyon Springs Shopping Center LLC

Canyon Springs Shopping Center LLC

9301 Wilshire Blvd. Suite #315
Beverly Hills, California 90211

Tel: (310) 247-0755
Fax: (310) 247-0758

Mr. Richard Putler, Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Subject: Madera 41 South Expressway and Environmental Impact Report (EIR)

Dear Mr. Putler,

I am submitting this comment letter on behalf of Canyon Springs Shopping Center LLC. Canyon Springs Shopping Center LLC is the owner of approximately 281 acres proximal to and east of the Madera 41 South Expressway Project with approximately 1320 feet of frontage on the existing Highway. Our site is part of the Rio Mesa Area Plan and is in the northern portion of the Avenue 12 Village area. The site is designated for Light Industrial Land Uses along the Highway corridor fronting Highway 41 and Low Density Residential land use on the balance of the property.

I have reviewed the Draft Environmental Impact Report (EIR) and Project Description and appreciate the opportunity to submit this letter as part of the public review process. Canyon Springs Shopping Center LLC purchased this property based on the approved Rio Mesa Area Plan and the development potential of both the highway oriented Light Industrial property and the Low Density Residential development potential. While both Alternative 2, "East Alignment" and Alternative 4, "Existing Alignment" are improvements over the alignment approved with the Rio Mesa Area Plan, Alternative 2, "East Alignment", appears to have the least direct impact on the utilization of our site. Alternative 4, "Existing Alignment" includes a substantial drainage basin along our highway frontage that significantly impacts the economic viability of the property. However, both alternatives have significant impact on the economic viability of existing and future business opportunity along both the west and east sides of the corridor. The EIR fails to adequately address how these economic impacts will result in increased traffic and air quality and greenhouse gas impacts, because of the need for future residents in this area to travel further for services and jobs.

Cal Trans should be working closely with the County and the area property owners to resolve these concerns in the most environmentally sustainable means possible by protecting the viability of existing 1

businesses, ensuring the viability of lands designated for future business and job growth and providing solutions that provide effective means of connectivity for all modes of travel.

Canyon Springs Shopping Center LLC has the following comments on the proposed project and EIR.

Access

Of paramount concern is access to our property. Both proposed alignments will result in expressway status, prohibiting direct access to the highway along our 1300 + feet of frontage. Although the future alignment of Rio Mesa Blvd. traverses our site, the points of access from the highway are well north and south of our site (Avenue 15 and Avenue 12), significantly diminishing the economic value of the Light Industrial designated land. Neither of the Alternatives provide frontage road access to our site. The Project Description suggests that local access will provided via frontage road and utilization of abandoned segments of the existing Highway 41. However, no such access is afforded to our site. The EIR should include a discussion on the status of plans for both interim and long term access to our property and the associated impacts. 2

Connectivity

We understand that this project is included in the 2014 Regional Transportation Plan (RTP) as a "Constrained Capacity – Increasing Project". We also understand Cal Trans' single focus of moving the most vehicles through the area safely and efficiently, and therefore, the Expressway and potential Freeway designation is expected. However, Highway 41 as it currently operates has afforded more freedom of access through and across this area and as history has proven out, the implementation of access restricted expressways and/or freeways, has significantly impacted the connectivity and divided the urban fabric of many communities throughout this state and nation – much to the detriment of the social and economic wellbeing of those places. 3

The Project and EIR fail to adequately address the long-term traffic impacts of a diminished connectivity between east and west Madera County and the "barrier" to east-west connectivity that the Madera 41 South Expressway will put into place. Recognizing the County's long standing plans for the Rio Mesa Area as a new urban growth area for the County, Cal Trans should be including more opportunity for east west connectivity that will not only result in more opportunity for community cohesion, but also afford improved access where highway frontage access has been eliminated. The project should include, at least as a modified alternative or potential mitigation, an increased number of Expressway "flyovers" (e.g. at Avenue 13 and Avenue 14) connecting the areas east and west of the Highway 41 corridor. The EIR should analyze whether increased connectivity (and resulting enhanced economic viability) will serve to reduce (as would be expected) Air Quality and Greenhouse Gas impacts.

Specific Site Impacts

As noted above, Alternative 4, "Existing Alignment" includes a substantial basin on the 40 acres of Canyon Springs Shopping Center LLC's property directly fronting Highway 41. The Project Description is lacking in that the specific acreages assigned to the various project components are not clearly expressed

in the document. The acreage references in Table 1.3 – *Comparison of Alternatives* are without clear identification of what project components are represented. Therefore, the extent to which the proposed basin impacts our site is unknown. A detailed summary table of the breakdown of project components by acreage should be provided as a part of the Project Description. 4

Canyon Springs Shopping Center LLC and other property owners, along with the County of Madera, are prepared to work with you to relocate the proposed basins in areas that would be less detrimental to our property interests. We are prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Thank you for the opportunity to comment.

Sincerely,

Sam Kermanian
Asset Management Director
Canyon Springs Shopping Center LLC

Cc Isaac Moradi, Manager Canyon Springs Shopping Center LLC
Jim Kopshever
Norm Allinder, Community and Economic Development Director Madera County
John Wilbanks, RRM Design Group

Attachment: Aerial showing Canyon Springs Shopping Center LLC Property Location

Canyon Springs Shopping Center LLC Property

Response to Comments from Sam Kermanian, Canyon Springs Shopping Center LLC

Thank You for your comments.

1. Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases with the Phase 1 tentatively being constructed in 2022 and Phase 2 tentatively being constructed in 2035. See section 1.6 for more details. Caltrans will continue to work with Madera County to integrate the proposed project with the Madera County General Plan.

2. State Route 41 is listed in the California Freeway and Expressway System (Street and Highway Code - Division 1, Chapter 2, Article 2). These facilities are either presently freeway or expressway or designated to have access control in their future configuration. Furthermore, Freeway Agreements between Madera County and Caltrans have been in effect since December 6, 1954 with the most recent being executed on May 23, 1995. Existing access rights to State Route 41 by Caltrans were never guaranteed to be permanent nor were they implied when the facility is upgraded to expressway in the future. Madera County is responsible for the planning and construction of local roads within the Rio Mesa planning area. Caltrans works closely with Madera County to avoid landlocking property when an expressway is constructed and access to property is prohibited. Your question about a connection to the local road network will be forwarded to Madera County.

3. The Madera 41 South Expressway project does not preclude future overcrossings at Avenue 13 and Avenue 14. Traffic demand does not currently warrant their inclusion in the current proposed project. However, the freeway agreement that will be executed by Caltrans and Madera County will include future grade separations at Avenue 13 and Avenue14. A separate project to construct overcrossings will need to be planned and programmed. Section 1.4.1 has been updated to include language about overcrossings. Air quality impacts to future overcrossings and frontage roads not currently in the FTIP have not been analyzed. Future roads would be analyzed by Madera County if they are added to the General Plan.

4. The location and the size of the basins shown on the mapping is preliminary and is based on an initial hydrologic study that was developed to document all the environmental impacts of the project. It is probable that the size and location of the basins may change as the design of the project progresses. Alternatively, Caltrans may be able to discharge the storm water to master planned basins owned and operated by a public entity if one is available prior to construction. See Appendix S for more information.

Comment from Michael Prandini, Building Industry Association of Fresno/Madera Counties, Inc.

Building Industry Association
of Fresno/Madera Counties, Inc.

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

The Building Industry Association of Fresno/Madera Counties (BIA) is a membership-based organization representing builders, developers, subcontractors, and affiliated businesses in the residential, commercial, and industrial building industry in Fresno and Madera Counties. The mission of BIA is to cooperate with all branches of government and with other community organizations to promote housing affordability and economic development in Fresno and Madera Counties.

We have reviewed the Draft Environmental Impact Report (EIR) for the proposed expansion of State Route 41. The EIR indicates that the right-of way for Alternative 2 will be located approximately 700 feet to the east of the existing alignment of State Route 41. The EIR fails, however, to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. This proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 that they presently enjoy, which would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would affect the value and development potential of properties in the immediate area.

As you know, there are more than 15,000 dwelling units and approximately 5,000,000 square feet of commercial and industrial development currently planned or approved within southeast Madera County. Because blight would depress property values, it would become increasingly difficult for prospective homebuyers to qualify for FHA loans. Additional impacts associated with Alternative 2 would be the loss of up to 2,300,000 square feet of land designated for commercial and light industrial development which will result in a negative impact on job growth in the area, making the area less attractive for future homebuyers and further reducing property values.

420 E. Bullard Avenue, Suite 105 • Clovis, California 93612
(559) 226-5900 • FAX (559) 324-8237 • www.biafm.org

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
Page 2

Under Alternative 4 in the EIR, the right-of-way would generally follow the existing alignment of State Route 41, which would require the relocation rather than result in the failure of certain of the existing businesses located west of the present alignment, but would avoid the negative economic impact on surrounding properties and the loss of future development. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Sincerely,

Michael Prandini
President and CEO

Response to Comments from Michael Prandini, Building Industry Association of Fresno/Madera Counties, Inc.

Thank you for your comments.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Brent M. McCaffrey, The River Conservancy at Tesoro Viejo

THE RIVER CONSERVANCY AT
TESORO VIEJO

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

The River Conservancy at Tesoro Viejo is a non-profit corporation organized within the lands owned by Bellezze Naturali, LLC, and the open space preservation within Tesoro Viejo, and is in discussions with the San Joaquin River Parkway to support operation and maintenance of trails, public access, and low impact recreation at Ball Ranch and Ledger Island. Its primary funding source is 0.10 percent of the sale price of the homes in the Tesoro Viejo project. Thank you for the opportunity to review the draft environmental impact report for the proposed expansion of State Route 41. We have reviewed the draft environmental impact report and have the following comments.

The draft environmental impact report fails to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. The proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 on which they presently rely and would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would detract from the value and development potential of properties in the immediate area, including the development of new homes in the Tesoro Viejo project. The River Conservancy depends on the sale of the new homes to increase its customer base and profitability. Loss of new development due to blighted conditions would greatly hinder the Conservancy's funding for operations and maintenance.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the existing alignment of State Route 41. Although Alternative 4 could require the relocation of certain of the existing businesses located west of the present alignment, relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the proposed realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Sincerely,

Brent M. McCaffrey

7020 N. Van Ness Blvd., Fresno, CA 93711
TEL: (559) 256-7000 FAX: (559) 256-7010

Response to Comments from Brent M. McCaffrey, The River Conservancy at Tesoro Viejo

Thank you for your comments.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Ash Knowlton, Bellezze Naturali, LLC

Bellezze Naturali, LLC.

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

Bellezze Naturali, LLC is the owner of approximately 915.45 acres of land located north of Avenue 12 and east of State Route 41. We have reviewed the draft environmental impact report for the proposed expansion of State Route 41, according to which the right-of way for Alternative 2 will be located approximately 700 feet to the west of the existing alignment of State Route 41. The draft environmental impact report fails, however, to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. This proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 that they presently enjoy, which would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would affect the value and development potential of our property and other properties in the immediate area.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the existing alignment of State Route 41, which would require the relocation of certain of the existing businesses located west of the present alignment, but such relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the proposed realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative. 1

The draft environmental impact report also identifies the locations of a number of basins to accommodate storm water runoff in connection with both Alternatives. Please be advised that we are proposing to provide storm water retention basins in connection with improvements to be constructed on the Bellezze Naturali property and are prepared to cooperate with Caltrans and the County of Madera regarding the ability to share storm water facilities in order to minimize the amount of land that would otherwise be required for new basins. 2

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Sincerely,

Ash Knowlton

7020 N. Van Ness Blvd., Fresno, CA 93711
TEL: (559) 256-7000 FAX: (559) 256-7010

Response to Comments from Ash Knowlton, Bellezze Naturali, LLC

Thank you for your comments.

1.Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

2. Caltrans is required to include all project features in the environmental analysis of a project. Stormwater basins are a required feature of the project and are therefore included as part of the analysis. There are currently no facilities near the project that can handle our expected stormwater discharge. If appropriate facilities become available prior to the construction of the project, it may be possible to reduce the capacity of the proposed basins or eliminate them altogether. At this time they must be included in the environmental analysis. See Appendix S for more information.

Comment from Betty Morgan

BETTY MORGAN

February 6, 2017

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

Re: State Route 41 Draft Environmental Impact Report – SCH# 2015051074

Dear Mr. Putler,

My family owns approximately 103.19 acres of land located north of Avenue 15 and east of State Route 41. I have reviewed the draft environmental impact report for the proposed expansion of State Route 41 according to which Alternative 2 would relocate the right-of-way approximately 700 feet to the east of the existing alignment and construct an interchange at Avenue 15. The proposed roadway and interchange would take approximately 41 acres of our property and would significantly reduce the value of an additional 50 acres of our property which is designated for light industrial use in the Rio Mesa Area Plan by dividing the property into two disconnected pieces and decreasing the usable area.

According to the draft environmental impact report, under Alternative 4 the freeway right-of-way would generally follow the existing alignment of State Route 41, and the proposed interchange would affect far less of our property and allow the remaining area of the property to remain in one piece. Although it is not ideal, Alternative 4 would be the less detrimental for our property. We therefore encourage you to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

Sincerely,

Betty Morgan

Betty Morgan

600 W. Fremont Street
Stockton, California 95203

Response to Comments from Betty Morgan

Thank you for your comments.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Eric L. Vidmar, Anlin Window Systems

Mr. Richard Putler
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, California 93721

February 1, 2017

RE: State Route 41 Draft Environmental Impact Report - SCH# 2015051074

Dear Mr. Putler:

Anlin Windows is currently in discussions with Tesoro Viejo, Inc. to acquire industrially zoned property in the Tesoro Viejo project to establish a manufacturing facility. We have reviewed the draft environmental impact report for the proposed expansion of State Route 41, according to which the right-of way for Alternative 2 will be located approximately 700 feet to the west of the existing alignment of State Route 41. The proposed alignment of Alternative 2 would go right through the middle of the industrial properties in the Tesoro Viejo project and make it very difficult if not impossible for Anlin Windows to locate a viable manufacturing facility there.

The draft environmental impact report also fails to fully analyze the potential impact of the proposed alignment of Alternative 2 on the existing businesses located to the west of the current alignment. The proposed alignment would deprive those existing businesses of the proximity to and visibility from State Route 41 on which they presently rely and would result in loss of revenue and reduced property values. The economic impact could cause one or more of the businesses to fail, thereby resulting in economic blight, which would detract from the value and development potential of properties in the immediate area.

Under Alternative 4 in the draft environmental impact report, the right-of-way would generally follow the existing alignment of State Route 41. Location of the freeway along the existing right-of-way would preserve more of the industrial property in Tesoro Viejo and allow Anlin Windows to develop a viable manufacturing facility. Although Alternative 4 could require the relocation of certain of the existing businesses located west of the present alignment, relocation would likely be preferable to the existing business owners compared to the complete failure of the business due to the loss of access and visibility from the proposed realignment of State Route 41. Relocation rather than failure of the existing businesses would also avoid the negative economic impacts on surrounding properties. You are therefore encouraged to reject Alternative 2 and adopt Alternative 4 as the preferred alternative.

Thank you very much for your attention. I am prepared to discuss this with you in more detail at your convenience. In the meantime, please contact me with any questions regarding these issues.

Eric L. Vidmar
Executive Vice President
Anlin Window Systems

Response to Comments from Eric L. Vidmar, Anlin Window Systems

Thank you for your comment.

Caltrans has identified Alternative 4 as the recommended preferred alternative. Alternative 4 will be constructed in two phases, with Phase 1 tentatively set for construction in 2022 and Phase 2 tentatively set for construction in 2035. See Section 1.6 for more details.

Comment from Al Solis, Sol Development Associates, LLC

DEVELOPMENT
ASSOCIATES, LLC

Entitlements • Planning • Processing • Consulting • Representation • Public Relations

February 7, 2017

Richard Putler, Senior Environmental Planner
California Department of Transportation
Sierra Pacific Environmental Analysis Branch
855 M Street, Suite 200
Fresno, CA 93721

Re: Madera 41 South Expressway
APN's: 049-021-10, 15, 17, 18, 22, 23, 24 & 25

Dear Mr. Putler:

Our firm has represented the Tatham family for over 10 years on a variety of issues in Fresno and Madera Counties. One of these was the pre-planning of the above parcels for future urban development. We submitted a General Plan Amendment, General Plan Text Amendment, Conceptual Land Use Plan, and $17,224 in fees to Madera County on December 30, 2008. The decision was made by the property owner to hold up on proceedings with the project until we had a better sense of other development in the area.

Of major concern to us is future access for our properties to the Highway 41 Freeway/Expressway and our contacts with your staff regarding this concern date back to July 2015. We assume our current highway access will be replaced by a frontage road alternative.

I attended the public hearing on January 11, 2017 and was told by one of the staff persons there that access would be an issue resolved by Madera County and not Caltrans. We strongly disagree with that position and feel that access needs to be resolved now as part of the alternative selection process.

Very clearly there needs to be a frontage road connection that runs along the Freeway/Expressway between Avenue 12 and 15. This needs to be addressed now. I understand the preliminary tracts maps for the Riverstone Development north of Avenue 12 do not provide for a frontage road connection through their property into our property.

The intended development of the total Tatham properties will rival the intensity of the Riverstone project and planning needs to occur now to provide the proper amount of future circulation to service our properties.

906 "N" Street, Suite 100 | Fresno CA 93721 | Phone 559.497.1900 | Fax 559.497.0301 | www.soldevelopment.com

We also believe there needs to be an additional figure in the EIR besides Figure 2-2 that depicts the "other proposed development projects" listed on page 38.

We would request that a meeting be scheduled ASAP with Caltrans, Madera County and our client to discuss the issue.

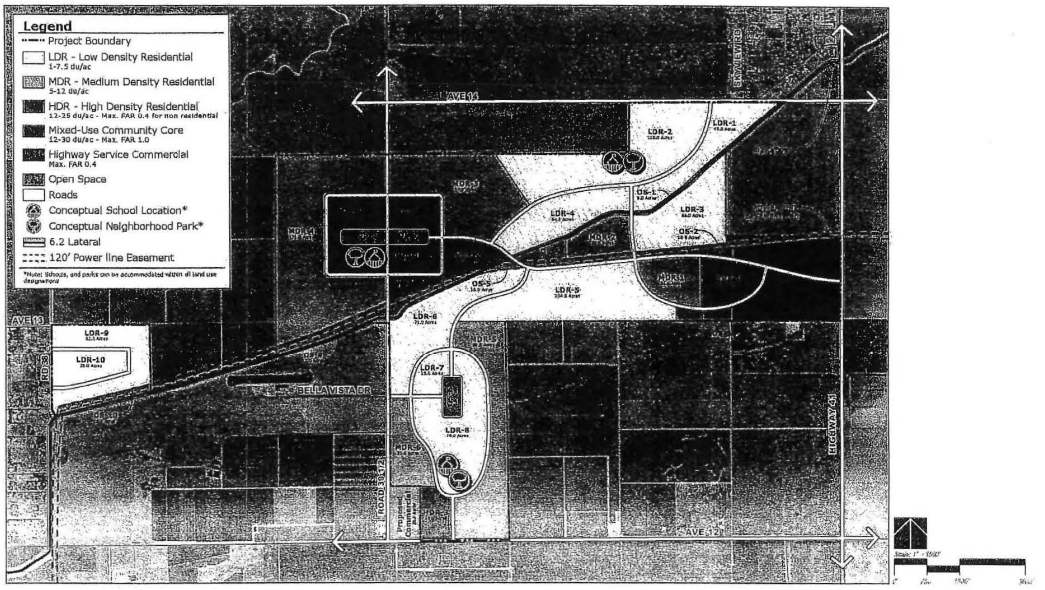
I can be reached at 559-497-1900.

Very truly yours,

Al Solis, AICP
Principal

Attachment: Conceptual Land Use Plan

Cc: Bill & Michael Tatham, Consolidated Land Company
Norm Allinder, Madera County Planning



Conceptual Land Use Plan

Tatham Property
Madera County, CA
December 2008

4

Response to Comments from Al Solis, Sol Development Associates, LLC

Thank you for your comment.

State Route 41 is listed in the California Freeway and Expressway System (Street and Highway Code - Division 1, Chapter 2, Article 2). These facilities are either presently freeway or expressway or designated to have access control in their future configuration. Furthermore, Freeway Agreements between Madera County and Caltrans has been in effect since December 6, 1954 with the most recent being executed on May 23, 1995. Existing access rights to State Route 41 by Caltrans were never guaranteed to be permeant nor were they implied when the facility is upgraded to expressway in the future. Madera County is responsible for the planning and construction of local roads within the Rio Mesa planning area. Caltrans works closely with Madera County to avoid landlocking property when an expressway is constructed and access to property is prohibited. Your question about a connection to the local road network will be forwarded to Madera County. Currently, the Madera 41 South Expressway project does not include the frontage roads you are proposing.

Appendix S Basins

The preliminary locations are based on engineering evaluation. The locations are based on preliminary profiles of the ultimate freeway, the preliminary profile of the proposed initial facility, existing terrain, existing lost detention storage, and existing creeks and drainage swales. The proposed drainage basins will capture runoff from impervious surfaces before discharging into existing creeks and drainage swales. Route 41 will drain to the basins by gravity, which is why the proposed Route 41 profiles will be so important in the placement of the basins.

The project's large amount of impervious surface will generate a large quantity of storm water runoff that must be mitigated. Besides mitigating for increased impervious area, the basins provide for water quality treatment. The soil classifications that are prevalent in the area have low infiltration rates. The basins are designed to have a shallow depth with a large flat bottom area to accommodate the slow percolation rate while trying to timely dispose of the water before mosquitos become a problem. The proposed basins have been designed with sufficient capacity to detain two 10-year 24-hour storm events for the ultimate 6-lane freeway with interchanges. Without the detention basins, the potential risk of downstream flooding and property damage will increase.

The location and the size of the basins shown on the mapping is preliminary and is based on an initial hydrologic study that was developed to document all the environmental impacts of the project. It is probable that the size and location of the basins may change as the design of the project progresses. Alternatively, Caltrans may be able to discharge the storm water to master planned basins owned and operated by a public entity if one is available prior to construction.

Appendix T RTP/FTIP Amendments

MCTC 2019 FTIP Amendment No. 3 – Summary of Changes

Summary of Changes
MCTC 2019 FTIP Amendment No. 3 (Formal, Type 5)

Existing / New	MPO FTIP ID	PROJECT TITLE	DESCRIPTION OF CHANGE	Phase	CTIPS Fund Source	PRIOR CTIPS Entry	CURRENT CTIPS Entry	FFY	FINANCIAL TABLE Fund Source Category	Net Increase/ Decrease	Total Change to Project Cost	Comments
Existing	MAD 417006 221-0000-0394	Madera SR 41 Expressway Phase 1 - In the County of Madera, from Avenue 10 (0.8 miles south of Avenue 11 Overcrossing) to Avenue 12 (0.7 miles north of Avenue 12). Widen from 3 Lane to 4 Lane Expressway.	COST DECREASE/ DELETE PROJECT	PE	N/A	$0	$0	18/19	N/A	$0	($3,000,000)	Delete Project per Caltrans Request
					Local	$3,000,000	$0	18/19	Local	($3,000,000)		
			COST DECREASE/ DELETE PROJECT	ROW	N/A	$0	$0	19/20	N/A	$0	($17,500,000)	Delete Project per Caltrans Request
					Local	$17,500,000	$0	19/20	Local	($17,500,000)		
			COST DECREASE/ DELETE PROJECT	CON	N/A	$0	$0	20/21	N/A	$0	($30,500,000)	Delete Project per Caltrans Request
					Local	$30,500,000	$0	20/21	Local	($30,500,000)		
Existing	MAD 417007 221-0000-0395	Madera SR 41 Expressway Phase 2 - In the County of Madera, from Avenue 12 (0.3 miles north of Avenue 12) to Avenue 15 (0.4 miles north of Avenue 15). Widen 2 Lane Conventional to 4 Lane Expressway.	COST DECREASE/ DELETE PROJECT	PE	N/A	$0	$0	18/19	N/A	$0	($4,000,000)	Delete Project per Caltrans Request
					Local	$4,000,000	$0	18/19	Local	($4,000,000)		
			COST DECREASE/ DELETE PROJECT	ROW	N/A	$0	$0	19/20	N/A	$0	($14,000,000)	Delete Project per Caltrans Request
					Local	$14,000,000	$0	19/20	Local	($14,000,000)		
			COST DECREASE/ DELETE PROJECT	CON	N/A	$0	$0	21/22	N/A	$0	($43,000,000)	Delete Project per Caltrans Request
					Local	$43,000,000	$0	21/22	Local	($43,000,000)		
NEW	MAD 417008 221-0000-0406	Madera SR 41 Expressway Phase 1 - In the County of Madera, from Ave 10.5 to Ave 12, widen to 4 lane expressway. From Ave 12 to Ave 14, widen to 4 lane expressway. From Ave 14 to 0.4 miles north of Ave 15, widen to 4 lane conventional highway.	COST INCREASE	PE	N/A	$0	$0	18/19	N/A	$0	$3,000,000	New project per Caltrans request
					Local	$0	$3,000,000	18/19	Local	$3,000,000		
			COST INCREASE	ROW	N/A	$0	$0	19/20	N/A	$0	$22,000,000	New project per Caltrans request
					Local	$0	$22,000,000	19/20	Local	$22,000,000		
			COST INCREASE	CON	N/A	$0	$0	20/21	N/A	$0	$70,000,000	New project per Caltrans request
					Local	$0	$70,000,000	20/21	Local	$70,000,000		
NEW	MAD 417009 221-0000-0407	Madera SR 41 Expressway Phase 2 - In the County of Madera, From Ave 12 to Ave 14 reconstruct existing 4 lane expressway in ultimate configuration. From Ave 14 to 0.4 miles north of Ave 15, upgrade to a 4 lane expressway. From 0.4 miles north of Ave 15 to 1.4 miles north of Ave 15, widen to a 4 lane expressway.	COST INCREASE	PE	N/A	$0	$0	32/33	N/A	$0	$4,000,000	New project per Caltrans request. Fiscal Year 32/33 is being shown for information purposes only
					Local	$0	$4,000,000	32/33	Local	$4,000,000		
			COST INCREASE	ROW	N/A	$0	$0	33/34	N/A	$0	$42,000,000	New Project per Caltrans request. Fiscal Year 33/34 is being shown for information purposes only
					Local	$0	$42,000,000	33/34	Local	$42,000,000		
			COST INCREASE	CON	N/A	$0	$0	34/35	N/A	$0	$39,000,000	New project per Caltrans request. Fiscal Year 34/35 is being shown for information purposes only
					Local	$0	$39,000,000	34/35	Local	$39,000,000		

	18/19	19/20	20/21	21/22	Totals
N/A	$0	$0	$0	$0	$0
Local	($4,000,000)	($9,500,000)	$25,500,000	($43,000,000)	($31,000,000)
Total	($4,000,000)	($9,500,000)	$25,500,000	($43,000,000)	($31,000,000)

TABLE 1: REVENUE

Madera County Transportation Commission
2019 Federal Transportation Improvement Program
Amendment 3
($'s in 1,000)

	Funding Source	NOTES	4 YEAR (FTIP Period)								
			FY 2019		FY 2020		FY 2021		FY 2022		TOTAL CURRENT
			Amendment		Amendment		Amendment		Amendment		
			Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	
LOCAL	**Sales Tax**										
	City										
	County										
	Gas Tax										
	Gas Tax (RA Revenues to Cities)										
	Gas Tax (RA Revenues to Counties)										
	Other Local Funds		$20,061	$16,061	$34,963	$25,463	$34,267	$73,767	$45,547	$2,547	$117,838
	County General Funds		$2,842	$2,842	$462	$462	$527	$527	$536	$536	$4,367
	City General Funds		$9,019	$9,019	$3,001	$3,001	$3,249	$3,249	$2,211	$2,211	$17,271
	Street Taxes and Developer Fees		$7,000	$3,000	$31,500	$22,000	$30,500	$70,000	$43,000		$95,000
	RSTP Exchange funds		$1,200	$1,200							$1,200
	Transit										
	Transit Fares										
	Other (See Appendix 1)										
	Local Total		**$20,061**	**$16,061**	**$34,963**	**$25,463**	**$34,267**	**$73,767**	**$45,547**	**$2,547**	**$117,838**
REGIONAL	**Tolls**										
	Bridge										
	Corridor										
	Regional Sales Tax		$709	$709			$2,350	$2,350	$8,250	$8,250	$11,309
	Other (See Appendix 2)										
	Regional Total		**$709**	**$709**			**$2,350**	**$2,350**	**$8,250**	**$8,250**	**$11,309**
STATE	**State Highway Operations and Protection Program (SHOPP)** [1]		$89,834	$96,634	$23,782	$23,782	$3,437	$3,437	$30,600	$30,600	$157,453
	SHOPP		$87,614	$97,614	$23,782	$23,782	$3,437	$3,437	$30,600	$30,600	$155,433
	SHOPP Prior										
	State Minor Program		$2,020	$2,020							$2,020
	State Transportation Improvement Program (STIP) [1]		$3,120	$3,120	$1,545	$1,545	$99	$99	$9,092	$9,092	$13,856
	STIP		$3,120	$3,120	$1,545	$1,545	$99	$99	$9,092	$9,092	$13,856
	STIP Prior										
	State Bond										
	Proposition 1A (High Speed Passenger Train Bond Program)										
	Proposition 1B (Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006)										
	Active Transportation Program (ATP)		$379	$379							$379
	Highway Maintenance (HM) Program										
	Highway Bridge Program (HBP) [1]		$1,976	$1,976	$337	$337	$121	$121	$1,060	$1,060	$3,494
	Road Repair and Accountability Act of 2017 (SB1)		$5,000	$5,000							$5,000
	Traffic Congestion Relief Program (TCRP)										
	State Transit Assistance (STA)(e.g., population/revenue based, Prop 42)										
	Other (See Appendix 3)										
	State Total		**$110,109**	**$110,109**	**$25,664**	**$25,664**	**$3,651**	**$3,651**	**$40,752**	**$40,752**	**$180,176**
FEDERAL TRANSIT	5307 - Urbanized Area Formula Grants		$3,008	$3,008	$3,008	$3,008	$1,670	$1,670	$1,548	$1,548	$9,962
	5309 - Fixed Guideway Capital Investment Grants										
	5309b - New and Small Starts (Capital Investment Grants)										
	5309c - Bus and Bus Related Grants										
	5310 - Enhanced Mobility of Seniors and Individuals with Disabilities										
	5311 - Formula Grants for Rural Areas		$418	$418	$437	$437	$456	$456	$476	$476	$1,787
	5311f - Intercity Bus										
	5337 - State of Good Repair Grants										
	5339 - Bus and Bus Facilities Formula Grants		$158	$158	$364	$364	$153	$153	$160	$160	$835
	FTA Transfer from Prior FTIP										
	Other (See Appendix 4)										
	Federal Transit Total		**$4,242**	**$4,242**	**$3,869**	**$3,869**	**$2,288**	**$2,288**	**$2,185**	**$2,185**	**$12,584**
FEDERAL HIGHWAY	Congestion Mitigation and Air Quality Improvement Program		$2,714	$2,714	$2,049	$2,049	$2,048	$2,048	$2,048	$2,048	$8,859
	Construction of Ferry Boats and Ferry Terminal Facilities (Ferry Boat Program)										
	Coordinated Border Infrastructure Program										
	Federal Lands Access Program		$11,434	$11,434							$11,434
	Federal Lands Transportation Program										
	GARVEE Bonds Debt Service Payments										
	Highway Infrastructure Program (HI)		$391	$391							$391
	Highway Infrastructure Program (HI) - PRIOR										
	High Priority Projects (HPP) and Demo										
	Highway Safety Improvement Program (HSIP)						$311	$311			$311
	National Highway Freight Program (NHFP)										
	Nationally Significant Freight and Highway Projects (FASTLANE/INFRA Grants)										
	Railway-Highway Crossings Program										
	Recreational Trails Program		$261	$261							$261
	SR2T (Safe Routes to School (SRTS))										
	Surface Transportation Block Grant Program (STBG/RHSTP)										
	Other (see Appendix 5)										
	Federal Highway Total		**$14,800**	**$14,800**	**$2,049**	**$2,049**	**$2,359**	**$2,359**	**$2,048**	**$2,048**	**$21,256**
FEDERAL RAIL	*Other Federal Railroad Administration (see Appendix 6)*										
	Federal Railroad Administration Total										
	Federal Total		**$19,042**	**$19,042**	**$5,918**	**$5,918**	**$4,647**	**$4,647**	**$4,233**	**$4,233**	**$33,840**
INNOVATIVE FINANCE	TIFIA (Transportation Infrastructure Finance and Innovation Act)										
	Other (See Appendix 7)										
	Innovative Financing Total										
REVENUE TOTAL			**$149,921**	**$145,921**	**$66,545**	**$57,045**	**$44,815**	**$84,415**	**$98,782**	**$55,782**	**$343,163**

Financial Summary Notes:
[1] *State Programs that include both state and federal funds*
[2] *CMAQ - Additional $700,000 Loan Repayment from TCAG FY19*

Caltrans, Division of Transportation Programming
Office of Federal Transportation Management Program
LG: Revised 6/5/2018

TABLE 1: REVENUE - APPENDICES

Madera County Transportation Commission
2019 Federal Transportation Improvement Program
Amendment 3
($'s in 1,000)

Appendix 1 - Local Other

Local Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Local Other Total									

Appendix 2 - Regional Other

Regional Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Regional Other Total									

Appendix 3 - State Other

State Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
State Other Total									

Appendix 4 - Federal Transit Other

Federal Transit Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Federal Transit Other Total									

Appendix 5 - Federal Highway Other

Federal Highway Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Federal Highway Other Total									

Appendix 6 - Federal Railroad Administration Other

Federal Railroad Administration Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Federal Railroad Administration Other Total									

Appendix 7 - Innovative Other

Innovative Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Innovative Other Total									

Page 2 of 5

TABLE 2: PROGRAMMED

Madera County Transportation Commission
2019 Federal Transportation Improvement Program
Amendment 3
($'s in 1,000)

	FUNDING SOURCES	NOTES	4 YEAR (FTIP Period)								
			FY 2019		FY 2020		FY 2021		FY 2022		TOTAL CURRENT
			Amendment		Amendment		Amendment		Amendment		
			Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	
LOCAL	**Local Total**		$20,061	$16,061	$34,963	$25,463	$34,267	$73,767	$45,547	$2,547	**$117,838**
REGIONAL	**Tolls**										
	Bridge										
	Corridor										
	Regional Sales Tax		$709	$709			$2,350	$2,350	$8,250	$8,250	**$11,309**
	Other (See Appendix A)										
	Regional Total		**$709**	**$709**			**$2,350**	**$2,350**	**$8,250**	**$8,250**	**$11,309**
STATE	State Highway Operations and Protection Program (SHOPP)[1]		$90,634	$90,634	$23,782	$23,782	$3,437	$3,437	$30,600	$30,600	**$157,453**
	SHOPP		*$97,614*	*$97,614*	*$23,782*	*$23,782*	*$3,437*	*$3,437*	*$30,600*	*$30,600*	***$155,433***
	SHOPP Prior										
	State Minor Program		*$2,020*	*$2,020*							***$2,020***
	State Transportation Improvement Program (STIP)[1]		$3,120	$3,120	$1,545	$1,545	$93	$93	$9,092	$9,092	**$13,850**
	STIP		*$3,120*	*$3,120*	*$1,545*	*$1,545*	*$93*	*$93*	*$9,092*	*$9,092*	***$13,850***
	STIP Prior										
	State Bond										
	Proposition 1A (High Speed Passenger Train Bond Program)										
	Proposition 1B (Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006)										
	Active Transportation Program		$379	$379							$379
	Highway Maintenance (HM) Program[1]										
	Highway Bridge Program (HBP)[1]		$1,976	$1,976	$337	$337	$121	$121	$1,060	$1,060	$3,494
	Road Repair and Accountability Act of 2017 (SB1)		$5,000	$5,000							$5,000
	Traffic Congestion Relief Program (TCRP)										
	State Transit Assistance (STA)(e.g., population/revenue based, Prop 42)										
	Other (See Appendix B)										
	State Total		**$110,189**	**$110,189**	**$26,664**	**$26,664**	**$3,651**	**$3,651**	**$40,752**	**$40,752**	**$180,176**
FEDERAL TRANSIT	5307 - Urbanized Area Formula Grants		$3,666	$3,666	$3,068	$3,068	$1,679	$1,679	$1,549	$1,549	$9,962
	5309 - Fixed Guideway Capital Investment Grants										
	5309b - New and Small Starts (Capital Investment Grants)										
	5309c - Bus and Bus Related Grants										
	5310 - Enhanced Mobility of Seniors and Individuals with Disabilities										
	5311 - Formula Grants for Rural Areas		$418	$418	$437	$437	$456	$456	$476	$476	$1,787
	5311f - Intercity Bus										
	5337 - State of Good Repair Grants										
	5339 - Bus and Bus Facilities Formula Grants		$158	$158	$364	$364	$153	$153	$160	$160	$835
	FTA Transfer from Prior FTIP										
	Other (See Appendix C)										
	Federal Transit Total		**$4,242**	**$4,242**	**$3,869**	**$3,869**	**$2,288**	**$2,288**	**$2,185**	**$2,185**	**$12,584**
FEDERAL HIGHWAY	Congestion Mitigation and Air Quality (CMAQ) Improvement Program		$2,310	$2,310	$1,870	$1,870	$1,970	$1,970	$1,871	$1,871	$8,021
	Construction of Ferry Boats and Ferry Terminal Facilities (Ferry Boat Program)										
	Coordinated Border Infrastructure Program										
	Federal Lands Access Program		$11,434	$11,434							$11,434
	Federal Lands Transportation Program										
	GARVEE Bonds Debt Service Payments										
	Highway Infrastructure Program (HIP)										
	Highway Infrastructure Program (HIP) - PRIOR										
	High Priority Projects (HPP) and Demo										
	Highway Safety Improvement Program (HSIP)						$311	$311			$311
	National Highway Freight Program (NHFP)										
	Nationally Significant Freight and Highway Projects (FASTLANE/INFRA Grants)										
	Railway-Highway Crossings Program										
	Recreational Trails Program		$261	$261							$261
	SAFETEA-LU Safe Routes to School (SRTS)										
	Surface Transportation Block Grant Program (STBGP/RSTP)										
	Other (see Appendix D)										
	Federal Highway Total		**$14,005**	**$14,005**	**$1,870**	**$1,870**	**$2,281**	**$2,281**	**$1,871**	**$1,871**	**$20,027**
FEDERAL RAIL	Other Federal Railroad Administration (see Appendix E)										
	Federal Railroad Administration Total										
	Federal Total		**$18,247**	**$18,247**	**$5,739**	**$5,739**	**$4,569**	**$4,569**	**$4,056**	**$4,056**	**$32,611**
INNOVATIVE FINANCE	TIFIA (Transportation Infrastructure Finance and Innovation Act)										
	Other (See Appendix F)										
	Innovative Financing Total										
PROGRAMMED TOTAL			**$149,126**	**$145,126**	**$66,366**	**$56,866**	**$44,837**	**$84,337**	**$98,605**	**$55,605**	**$341,934**

MPO Financial Summary Notes:
[1] *State Programs that include both state and federal funds.*

Caltrans, Division of Transportation Programming
Office of Federal Transportation Management Program
LG: Revised 6/5/2018

TABLE 2: PROGRAMMED - APPENDICES

Madera County Transportation Commission
2019 Federal Transportation Improvement Program
Amendment 3
($'s in 1,000)

Appendix A - Regional Other

Regional Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Regional Other Total									

Appendix B - State Other

State Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
State Other Total									

Appendix C - Federal Transit Other

Federal Transit Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Federal Transit Other Total									

Appendix D - Federal Highway Other

Federal Highway Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Federal Highway Other Total									

Appendix E - Federal Railroad Administration Other

Federal Railroad Administration Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Federal Railroad Administration Other Total									

Appendix F - Innovative Finance Other

Innovative Other	FY 2019		FY 2020		FY 2021		FY 2022		CURRENT
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	TOTAL
Innovative Other Total									

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TABLE 3: REVENUE-PROGRAMMED

Madera County Transportation Commission
2019 Federal Transportation Improvement Program
Amendment 3
($'s in 1,000)

	FUNDING SOURCES	4 YEAR (FTIP Period)								
		FY 2019		FY 2020		FY 2021		FY 2022		TOTAL CURRENT
		Amendment		Amendment		Amendment		Amendment		
		Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	Prior No. 2	Current No. 3	
LOCAL	**Local Total**									
REGIONAL	**Tolls**									
	Bridge									
	Corridor									
	Regional Sales Tax									
	Other									
	Regional Total									
STATE	**State Highway Operations and Protection Program (SHOPP)** [1]									
	SHOPP									
	SHOPP Prior									
	State Minor Program									
	State Transportation Improvement Program (STIP) [1]									
	STIP									
	STIP Prior									
	State Bond									
	Proposition 1A (High Speed Passenger Train Bond Program)									
	Proposition 1B (Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006)									
	Active Transportation Program [1]									
	Highway Maintenance (HM) Program [1]									
	Highway Bridge Program (HBP) [1]									
	Road Repair and Accountability Act of 2017 (SB1)									
	Traffic Congestion Relief Program (TCRP)									
	State Transit Assistance (STA)(e.g., population/revenue based, Prop 42)									
	Other									
	State Total									
FEDERAL TRANSIT	5307 - Urbanized Area Formula Grants									
	5309 - Fixed Guideway Capital Investment Grants									
	5309b - New and Small Starts (Capital Investment Grants)									
	5309c - Bus and bus Related Grants									
	5310 - Enhanced Mobility of Seniors and Individuals with Disabilities									
	5311 - Formula Grants for Rural Areas									
	5311f - Intercity Bus									
	5337 - State of Good Repair Grants									
	5339 - Bus and Bus Facilities Formula Grants									
	FTA Transfer from Prior FTIP									
	Other									
	Federal Transit Total									
FEDERAL HIGHWAY	Congestion Mitigation and Air Quality (CMAQ) Improvement Program	$404	$404	$179	$179	$78	$78	$177	$177	$838
	Construction of Ferry Boats and Ferry Terminal Facilities (Ferry Boat Program)									
	Coordinated Border Infrastructure Program									
	Federal Lands Access Program									
	Federal Lands Transportation Program									
	GARVEE Bonds Debt Service Payments									
	Highway Infrastructure Program (HIP)	$391	$391							$391
	Highway Infrastructure Program (HIP) - PRIOR									
	High Priority Projects (HPP) and Demo									
	Highway Safety Improvement Program (HSIP)									
	National Highway Freight Program (NHFP)									
	Nationally Significant Freight and Highway Projects (FASTLANE/INFRA Grants)									
	Railway-Highway Crossings Program									
	Recreational Trails Program									
	SAFETEA-LU Safe Routes to School (SRTS)									
	Surface Transportation Block Grant Program (STBGP/RSTP)									
	Other									
	Federal Highway Total	$795	$795	$179	$179	$78	$78	$177	$177	$1,229
FEDERAL RAIL	Other Federal Railroad Administration									
	Federal Railroad Administration Total									
	Federal Total	$795	$795	$179	$179	$78	$78	$177	$177	$1,229
INNOVATIVE FINANCE	TIFIA (Transportation Infrastructure Finance and Innovation Act)									
	Other									
	Innovative Financing Total									
REVENUE - PROGRAM TOTAL		$795	$795	$179	$179	$78	$78	$177	$177	$1,229

Caltrans, Division of Transportation Programming
Office of Federal Transportation Management Program
LG: Revised 6/5/2018

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MCTC 2018 Constrained Capacity Increasing Projects - Schedule/Fund Source

							FUNDING SOURCE					
Project #	Agency	Route	Project Limits	Planned Improvement	Total Cost	Project Opening Year	Measure T Regional	Measure T Flexible	Future Measure T	Local TIF and Other	STIP	Other Fed/State
1	Chowchilla	SR 233 (Robertson Blvd)	15th St to Palm Pkwy	Restripe to 4 Lanes	#	2022				$ 1,000,000		
2	Chowchilla	SR 99	SR 233 Interchange	Interchange Operational Improvements	#	2024	$ 7,600,000	$ 4,900,000		$ 3,500,000		
3	Chowchilla	Ave 26	SR 99 to Coronado St	2 lanes to 4 Lanes	#	2025				$ 10,000,000		
4	Chowchilla	Fig Tree Rd	SR 99 Overcrossing	2 Lane Overcrossing to Chowchilla Blvd	#	2030			$ 4,000,000	$ 10,000,000		
5	County	Oakhurst Midtown	Rd 427 to SR 41	New 2 lane	#	2020	$ 4,080,000	$ 4,270,000				$ 5,000,000
6	County	Rd 40	Ave 10 to Ave 12	2 lanes to 4 Lanes	#	2020				$ 11,100,000		
7	County	Ave 9	SR 99 to Rd 33 1/2	2 lanes to 4 Lanes	#	2020				$ 8,100,000		
8	County	SR 41	SR 145 to Rd 208 (tie into new constructed Passing	Passing Lanes	#	2022				$ 11,000,000		
9	County	SR 41	Ave 10 1/2 to Ave 12	3 lane to 4 lane Expressway	#	2022				$ 39,000,000		
10	County	SR 41	Ave 12 to 15	2 lanes to 4 Lanes	#	2023				$ 56,000,000		
11	County	Ave 9	Rd 28 to Children's Blvd	2 lanes to 4 Lanes	#	2025				$ 9,730,000		
12	County	SR 41	Madera County Line to Ave 10	4 lanes to 6 Lanes	#	2025				$ 5,400,000		
13	County	Ave 12	Rd 30 1/2 to Rd 36	2 lanes to 4 Lanes	#	2030			$ 10,550,000	$ 10,550,000		
14	County	Ave 12	Rd 28 to SR 41	2 lanes to 4 Lanes	#	2030			$ 6,775,000	$ 6,775,000		
15	County	Ave 12 By Pass	Rd 36 to Rd 38	New 2 Lanes	#	2030			$ 8,675,000	$ 29,025,000		
16	County	Ave 12	SR 41 to Flagoon Rd	2 lanes to 4 Lanes	#	2030				$ 4,250,000		
17	County	Rio Mesa Blvd.	Ave 12 to Ave 15	New 4 Lanes Road	#	2030				$ 16,250,000		
18	County	SR 49	Meadow Vista Dr. to Westlake Dr	2 lanes to 4 Lanes	#	2035			$ 3,500,000	$ 3,500,000		
19	County	Rio Mesa Blvd.	Children's Blvd to Ave 12	2 lanes to 4 Lanes	#	2035				$ 3,750,000		
20	County	SR 41	Ave 14 to 15	4 lanes conventional to 4 lanes	#	2037				$ 85,000,000		
21	County	SR 41	Ave 10 to Ave 12	6 lanes Freeway / Interchange at Ave 12	#	2040			$ 40,250,000	$ 60,750,000		
22	County	Ave 10	Rd 40 to lanes Bridge	Widen to 4 Lanes	#	2040				$ 8,200,000		
23	County	Children's Blvd	SR 41 NB Ramps to Cocket Way	4 lanes to 6 Lanes	#	2040			$ 3,300,000	$ 3,300,000		
24	County	SR 41	Ave 15 to SR 145	2 lanes to 4 Lanes	#	2040			$ 11,250,000	$ 13,878,712	$ 19,871,288	
25	Madera	Olive Ave	Gateway to Roosevelt	2 lanes to 4 Lanes	#	2018				$ 6,000,000		
26	Madera	Sharon Blvd	Ave 17 to 1320 feet South	New 4 Lane road	#	2018				$ 3,700,000		
27	Madera	Ave 17	Rd 23 to Golden State Blvd	2 lanes to 4 Lanes	#	2021				$ 3,000,000		
28	Madera	Lake St	4th St to Cleveland Ave	2 lanes to 4 Lanes	#	2022				$ 5,500,000		
29	Madera	Ave 17	SR 99 Interchange	Interchange Improvements/Widen	#	2023				$ 56,885,000		
30	Madera	Rd 23	Ave 15 1/2 to Ave 17	2 lanes to 4 Lanes	#	2023				$ 15,000,000		
31	Madera	Cleveland Ave	Sharon Ave to Tozer St	Restripe to 4 Lanes	#	2025				$ 500,000		
32	Madera	Aviation Dr	Extend to Ave 17	New 2 lane	#	2025				$ 1,500,000		
33	Madera	Yeager Dr	Falcon Dr to Aviation Dr	New 2 Lane	#	2025				$ 1,500,000		
34	Madera	Ellis St	Rd 26 to Krohn St	2 lanes to 4 Lanes	#	2025				$ 5,875,000		
35	Madera	Westberry Blvd	At Fresno River	New 4 Lane bridge	#	2025				$ 13,000,000		
36	Madera	Cleveland Ave	Schnoor St to SR 99	4 lanes to 6 Lanes	#	2026	$ 1,610,000	$ 2,800,000		$ 350,000		
37	Madera	Gateway Dr	Yosemite Ave to Cleveland Ave	2 lanes to 4 Lanes	#	2027	$ 7,940,000	$ 3,160,000		$ 2,500,000		
38	Madera	Gateway Dr	Olive to 9th	2 lanes to 4 Lanes	#	2030				$ 2,872,000		
39	Madera	Ellis St	Rd 26 to Lake St	2 lanes to 4 Lanes	#	2030				$ 3,915,000		
40	Madera	Schnoor St	Trevor Wy to Sunset Ave	Overlay/restripe to 4 lanes	#	2030				$ 1,107,000		
41	Madera	Sharon Blvd	1320 feet South of Ave 17 to Ellis St.	New 4 lane road	#	2030				$ 5,000,000		
42	Madera	Granada Dr	At Fresno River	Widen Structure 2 Lanes to 4 Lanes	#	2030				$ 6,500,000		
43	Madera	Westberry Blvd	Cleveland Ave to Ave 16	2 lanes to 4 Lanes	#	2030				$ 2,717,000		
44	Madera	Howard Rd	Westberry Blvd to Granada Dr	2 lanes to 4 Lanes	#	2030				$ 4,674,000		
45	Madera	Pecan Ave	Golden State Blvd to Stadium Rd	2 lanes to 4 Lanes	#	2030				$ 4,874,000		
46	Madera	Pine St	Almond Ave to Madera South High School Driveway	2 lanes to 4 Lanes	#	2030				$ 2,000,000		
47	Madera	Sunrise Ave	B Street to Rd 28	2 lanes to 4 Lanes	#	2030				$ 3,000,000		
48	Madera	Sunset Ave	4th St to Westberry Blvd	2 lanes to 4 Lanes	#	2035			$ 3,000,000			
49	Madera	D St	Clark St to Adell St	2 lanes to 4 Lanes	#	2035				$ 1,500,000		
50	Madera	Rd 29	Olive Ave to Ave 13	2 lanes to 4 Lanes	#	2035			$ 1,938,576	$ 6,168,424		
51	Madera	Rd 29	Ave 12 to Ave 13	2 lanes to 4 Lanes	#	2035				$ 8,100,000		
52	Madera	Rd 29	Ave 14 to Ave 15	2 lanes to 4 Lanes	#	2035				$ 4,723,000		
53	Madera	SR 145	Ave 12 to Ave 13 1/2	2 lanes to 4 Lanes	#	2035			$ 1,500,000	$ 1,415,000	$ 1,100,000	
54	Madera	SR 145	SR 99 to Yosemite Ave	2 lanes to 4 Lanes	#	2035			$ 1,500,000	$ 2,678,884	$ 1,163,116	
55	Madera	Stadium Rd	Pecan Ave to Maple St	2 lanes to 4 Lanes	#	2035				$ 1,710,000		
56	Madera	Tozer St/Rd 28	Ave 13 to Knox St	2 lanes to 4 Lanes	#	2035			$ 2,000,000			
57	Madera	Howard Rd	Pine St to Schnoor St	4 lanes to 5 Lanes	#	2040			$ 5,000,000			
58	Madera	Ave 17	Rd 28 to Rd 27	2 lanes to 4 Lanes	#	2040			$ 3,000,000			
59	State	SR 99	Ave 12 to Ave 17	4 lanes to 6 Lanes	#	2022		$ 4,850,000			$ 1,545,000	$ 75,000,000
60	State	SR 99	Ave 7 to Ave 12	4 lanes to 6 Lanes	#	2028					$ 8,631,025	$ 179,386,975
61	State	SR 99	Ave 17 to Ave 21 1/2	4 lanes to 6 Lanes	#	2036			$ 5,000,000		$ 23,243,021	$ 21,756,979
					$ 1,077,928,000		$ 18,220,000	$ 18,880,000	$112,188,576	$ 589,259,020	$ 55,559,460	$ 281,125,954

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Madera SR 41 Programming Changes Summary

Madera SR 41 Expressway Phase 1

EA: 06-0R0401 CT Project ID: 0618000023 PPNO: 6692A
Route: 41 PM: 1.5/6.6
Description: From 0.8 mile south of Avenue 11 Undercrossing to 0.4 mile north of Avenue 15 in Madera County. From Avenue 10 to Avenue 12, widen from a 3 lane expressway to a 4 lane expressway, from Avenue 12 to Avenue 14 widen from a 2 lane conventional highway to a 4 lane expressway and from Avenue 14 to Avenue 15 widen from a 2 lane conventional highway to a 4 lane conventional highway.
Open to Traffic: 2023

Fund Source	Fiscal Year Programming						
Local Funds	Prior	18/19	19/20	20/21	21/22	22/23	Total
Component	In thousands of dollars ($1,000)						
PE		$3,000					$3,000
RW			$22,000				$22,000
Con				$70,000			$70,000
Total		$3,000	$22,000	$70,000			$95,000

Madera SR 41 Expressway Phase 2

EA: 06-0R0402 CT Project ID: 0618000024 PPNO: 6692B
Route: 41 PM: 5.2/7.6
Description: From Avenue 14 to 1.4 miles north of Avenue 15 in Madera County. Widen from a 4 lane conventional highway to a 4 lane expressway.
Open to Traffic: 2037

Fund Source	Fiscal Year Programming						
Local Funds	Prior	32/23	33/34	34/35	35/36	Future	Total
Component	In thousands of dollars ($1,000)						
PE		$4,000					$4,000
RW			$42,000				$42,000
Con				$39,000			$39,000
Total		$4,000	$42,000	$39,000			$85,000

Revised Date September 19, 2018

Appendix U List of Technical Studies

Air Quality Report, May 2016 revision

Air Quality Report, August 2019

Noise Study Report, October 2015

Noise Study Report, February 2019

Water Quality Report, January 2016

Natural Environment Study, May 2016 revision

Revised Natural Environment Study, October 2019

Floodplain Evaluation, September 2015

Hazardous Waste Reports

- Initial Site Assessment, August 2015
- Initial Site Assessment – Project Description Change, December 2015

Visual Impact Assessment, May 2016 revision

Paleontology Studies

- Paleontological Identification Report, April 2015
- Paleontological Evaluation Report and Preliminary Paleontological Mitigation Plan, November 2015

Draft Relocation Impact Report, September 2015

- Addendum, August 2016

Community Impact Assessment, April 2016 Revision

Historical Property Survey Report, December 2015