State Route 132 Dakota Avenue to Gates Road

On State Route 132 (Maze Boulevard) in Stanislaus County,
from West of Gates Road/Paradise Road to North Dakota Avenue

10-STA-132-4.5/R11.7

EA 10-1E280/Project ID 1015000027

Draft Environmental Impact Report/

Environmental Assessment and Draft Section 4(f) Evaluation

Volume 1 of 2

Prepared by the
State of California Department of Transportation
and Stanislaus County

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

March 2021

Caltrans

General Information About This Document

What's in this document:
The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project in Stanislaus County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:
Please read the document. Additional copies of the document and the related technical studies are available for review at the following locations: the Caltrans District 10 Office at 1976 East Doctor Martin Luther King Junior Boulevard, Stockton, California, 95205; the Stanislaus County Public Works Department at 1716 Morgan Road, Modesto, California, 95358; and the Stanislaus County Library at 1500 I Street, Modesto, California, 95354. Volume 1 of this document may be downloaded at the following website: https://dot.ca.gov/caltrans-near-me/district-10/district-10-current-projects/state-route-132-dakota-avenue-to-gates-road-project.

Attend the virtual public information meeting/public hearing on May 6, 2021.

We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the virtual public meeting, and/or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Jennifer Lugo, Senior Environmental Planner, Central Region Environmental, California Department of Transportation, 2015 East Shield Avenue, Fresno, California, 93726. Submit comments via email to: jennifer.lugo@dot.ca.gov. Submit comments by the deadline: May 21, 2021.

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

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Jennifer Lugo, Central Region Environmental, California Department of Transportation, 2015 East Shields Avenue, Fresno, California, 93726; 559-779-6612 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

SCH Number 2018092062

10-STA-132-4.5/R11.7

EA 10-1E280/Project ID 1015000027

Widen State Route 132 to a four-lane freeway or expressway on a new alignment from post miles 4.5 to R11.7 in Stanislaus County

DRAFT ENVIRONMENTAL IMPACT REPORT /ENVIRONMENTAL ASSESSMENT and Draft Section 4(f) Evaluation

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

Stanislaus County

Responsible Agencies: California Transportation Commission

Dennis T. Agar

Dennis T. Agar

District Director

California Department of Transportation

NEPA and CEQA Lead Agency

03/22/21

Date

The following individual can be contacted for more information about this document:
Jennifer Lugo, Central Region Environmental, 2015 East Shields Avenue, Fresno, California, 93726; 559-779-6612

Summary

NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 U.S. Code 327 for more than 5 years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Barack Obama on July 6, 2012, amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, Caltrans entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 (NEPA Assignment Memorandum of Understanding) with the Federal Highway Administration. The NEPA Assignment Memorandum of Understanding became effective October 1, 2012, and was renewed on December 23, 2016, for a term of 5 years. In summary, 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 the U.S. Department of Transportation Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off 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 U.S. Code 326 Categorical Exclusion Assignment Memorandum of Understanding, projects excluded by definition, and specific project exclusions.

The information in this summary is based on the analyses and other information documented in the draft environmental impact report/environmental assessment and the technical studies in support of the environmental impact report/environmental assessment for the State Route 132 Dakota Avenue to Gates Road project.

Caltrans, in cooperation with Stanislaus County, proposes to improve 7.2 miles of State Route 132 from post miles 4.5 to R11.7, which is 2 miles west of the City of Modesto (see Figure 1-1 and Figure 1-2). Caltrans is the lead agency under CEQA and NEPA.

The project proposes to build a new four-lane freeway or expressway along a new alignment from Gates Road/Paradise Road to North Dakota Avenue, from post miles 6.4 to R11.7. West of Gates Road/Paradise Road, roadway improvements from post miles 4.5 to 6.4 would be made to transition to the newly built highway. This project (State Route 132 Dakota Avenue to Gates Road) would be an extension of the State Route 132 West Freeway/Expressway project that is currently being built on a new alignment in the City of Modesto.

The purpose of the project is to improve mobility through western Stanislaus County, improve capacity for regional movement of traffic and goods, improve the circulation of local roads and connectivity to State Route 132, and provide route continuity. The project is needed to provide ease of movement to any given

traveler. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in Stanislaus County. Users of State Route 132 include local drivers, commuters to the Bay Area, tourists, commercial trucks, and agricultural vehicles, including tractors. Although each of these users has specific transportation needs, improving mobility will benefit all users on State Route 132. Within the project area, existing State Route 132 (Maze Boulevard) is a two-lane undivided conventional highway with shoulders and isolated left-turn lanes and right-turn lanes at some intersections, which create a conflict of movement for the mainline traffic. Local drivers must slow down to turn onto local roads or private driveways, which causes through traffic to slow down. Local drivers include residents who live near the project area and employees of the 15 businesses—mostly agribusinesses with less than 20 employees—within 0.5 mile of the project area.

Five alternatives are under consideration, including the No-Build (No-Action) Alternative. Each of the four Build Alternatives will replace a portion (about 0.3 mile) of State Route 132 east of North Dakota Avenue.

Under consideration for the proposed project are four Build Alternatives and the No-Build (No-Action) Alternative. Each of the Build Alternatives would involve the construction of a four-lane access-controlled facility about 2 miles west of the City of Modesto in Stanislaus County. Section 1.3, Project Description, provides a detailed description of the work under all Build Alternatives.

All of the Build alternatives would meet the purpose and need by converting State Route 132 into a four-lane access-controlled freeway/expressway

Build Alternative 1 would involve the construction of a controlled-access four-lane divided expressway about 0.5 mile north of the existing State Route 132 (Maze Boulevard). Two roundabouts would be built at the intersection of realigned Gates Road and the proposed State Route 132, and the intersection of the proposed State Route 132 and Hart Road. The proposed alignment (see Figure 1-5) would connect to the existing State Route 132 (Maze Boulevard) at North Dakota Avenue, where an overcrossing would be built. There are two crossings over the Butler Ditch at post mile R6.25 and post mile R7.82. The crossing would be built either pipe culvert or concrete box culvert.

Build Alternative 2 would involve the construction of a controlled-access four-lane divided freeway about 0.5 mile north of the existing State Route 132 (Maze Boulevard). Two interchanges would be built on the new alignment of State Route 132 at realigned Gates Road and Hart Road. Each of the interchanges would have a roundabout at the on-ramps and off-ramps, for a total of four roundabouts. The proposed alignment (see Figure 1-6) would connect to the existing State Route 132 (Maze Boulevard) at North Dakota Avenue, where an overcrossing would be built. Build Alternative 2 would have two crossings over the Butler Ditch. The first elevated crossing at post mile R6.74 would be built either with piped or an underground box. The second crossing would occur at post mile R7.82 and would be built into a pipe or underground culvert.

Build Alternative 3 would involve the construction of a controlled-access four-lane expressway next to the existing State Route 132 (Maze Boulevard), on the northern side. Signalized intersections would be installed at realigned Gates Road/Paradise Road, Hart Road, Maze Boulevard, and North Dakota Avenue. Maze Boulevard would be converted into a frontage road (see Figure 1-7). Existing access from Paradise/Gates Road would be removed and replaced with two cul-de-sacs on either side of State Route 132 (Maze Boulevard).

Build Alternative 4 would involve the construction of a controlled-access four-lane expressway next to the existing State Route 132 (Maze Boulevard), on the southern side. Signalized intersections would be installed at realigned Gates Road/Paradise Road, Hart Road, Maze Boulevard, and North Dakota Avenue. Maze Boulevard would be converted into a frontage road (see Figure 1-8). The existing State Route 132 (Maze Boulevard) would be given to Stanislaus County and become a frontage road and would end as a cul-de-sac at both the eastern and western ends.

The No-Build (No-Action) Alternative would leave the facility as it is, and the existing State Route 132 (Maze Boulevard) would remain a two-lane conventional highway.

Project funding is based on a combination of local, state, and federal sources. The project is included in the Stanislaus Council of Governments' Federal Transportation Improvement Program, the fiscally constrained 2018 Regional Transportation Plan/Sustainable Communities Strategy, and the 2019 Federal Transportation Improvement Program Amendment Number 9, along with Regional Transportation Plan Amendment Number 1. Total costs for the project are estimated to be between $116 million and $183 million using 2021 dollars, depending on the Build Alternative.

Route Adoption/Freeway Agreement

The route adoption for this segment of State Route 132 was approved on June 20, 1956 and covers the highway from State Route 99 to the San Joaquin River. A freeway agreement was approved in April 1961. The freeway agreement would need to be amended or replaced based on the project alternative selected.

- Build Alternative 1 would require an amendment to the freeway agreement for the Dakota access change.
- Build Alternative 2 would require an amendment to the existing freeway agreement to address the change in the interchange access of Dakota and Gates Road. Build Alternative 2 would also address the change to end the freeway at post mile R7.4 and the new alignment as a controlled-access highway.
- If Build Alternative 3 or 4 is selected, a new controlled access highway agreement would be required, and the existing one canceled. This would supersede the existing freeway agreement.

Joint California Environmental Quality Act/National Environmental Policy Act Documentation

The proposed project is a joint project by the California Department of Transportation (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 California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under NEPA and CEQA. Additionally, the Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 and the Memorandum of Understanding dated December 23, 2016, and executed by the Federal Highway Administration and Caltrans.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, often a "lower-level" document is prepared for NEPA. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment.

After receiving comments from the public and reviewing agencies, a final Environmental Impact Report/Environmental Assessment would be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Final Environmental Impact Report/Environmental Assessment would include responses to comments received on the Draft Environmental Impact Report/Environmental Assessment and would identify the preferred alternative. After the Final Environmental Impact Report/Environmental Assessment circulates, if the decision is made to approve the project, a Notice of Determination would be published for compliance with CEQA, and Caltrans would decide whether to issue a Finding of No Significant Impact or require an environmental impact statement for compliance with NEPA. A Notice of Availability of the Finding of No Significant Impact would be posted in the Federal Register and would be sent to the affected units of federal, state, and local government, and the State Clearinghouse in compliance with Executive Order 12372.

Project Impacts

The following table summarizes the potential impacts that would result from the construction and operation of the four proposed Build Alternatives. For comparison purposes, the impacts of the No-Build (No-Action) Alternative are also included. The table summarizes the potential impacts of the proposed project, as described throughout Chapter 2 in the Environmental Consequences sections within each resource subchapter. For a summary of significant impacts and mitigation measures in compliance with CEQA, see Chapter 3 and discussion of Mitigation Measures within Chapter 2.

Table S.1 Summary of Potential Impacts from Alternatives

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Meets Purpose and Need	Yes	Yes	Yes	Yes	No
Land Use—Consistency with the Modesto General Plan	No Impact	No Impact	No Impact	No Impact	No Impact
Land Use—Consistency with the Stanislaus County General Plan	No Impact	No Impact	No Impact	No Impact	No Impact
Land Use/Farmland	Build Alternative 1 would convert 299.82 acres of farmland. Of this, there are 222 acres of Prime and Unique designated farmland, and 12 acres of Statewide and Local Importance designated farmland. Additionally, 97.11 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 1.	Build Alternative 2 would convert 446.21 acres of farmland. Of this, there are 371 acres of Prime and Unique designated farmland, and 22 acres of Statewide and Local Importance designated farmland. Additionally, 153.62 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 2.	Build Alternative 3 would convert 305.64 acres of farmland. Of this, there are 237 acres of Prime and Unique designated farmland, and 3 acres of Statewide and Local Importance designated farmland. Additionally, 136.12 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 3.	Build Alternative 4 would convert 282 acres of farmland. Of this, there are 234 acres of Prime and Unique designated farmland, with no designated farmland of Statewide and Local Importance. Additionally, 144.74 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 4.	No Impact
Growth	No Impact	No Impact	No Impact	No Impact	No Impact
Community Character and Cohesion	No Impact	No Impact	No Impact	No Impact	No Impact
Business Displacements	No Impact	Potential to impact one business.	Potential to impact four businesses.	Potential to impact four businesses.	No Impact
Housing Displacements	Potential to impact four single-family homes.	Potential to impact seven single-family homes.	Potential to impact 34 single-family homes.	Potential to impact 25 single-family homes, one duplex, and 14 mobile homes.	No Impact
Utility Service Relocation	Electricity, telephone, cable, and natural gas would be relocated.	Electricity, telephone, cable, and natural gas would be relocated.	Electricity, telephone, cable, and natural gas would be relocated.	Electricity, telephone, cable, and natural gas would be relocated.	No Impact
Environmental Justice	There would not be disproportionate impacts to environmental justice communities. Noise, visual, and dust from construction activities would cause minor temporary impacts to the mobile park.	There would not be disproportionate impacts to environmental justice communities. Noise, visual, and dust from construction activities would cause minor temporary impacts to the mobile park.	There would not be disproportionate impacts to environmental justice communities. Noise, visual, and dust from construction activities would cause minor temporary impacts to the mobile park.	There would be high and adverse disproportionate impacts on the Mobile Home Park due to relocations. Adequate relocation of the properties is expected to be available within Stanislaus County.	No Impact
Utilities/Emergency Services	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No Impact
Traffic and Transportation/ Pedestrian and Bicycle Facilities	The levels of service would be improved.	The levels of service would be improved.	The levels of service would be improved.	The levels of service would be improved.	The levels of service would deteriorate, decrease average speed, and increase travel times.
Visual/Aesthetics	Moderate Visual Impact: Would cause topographic feature change, vegetation loss, and reduction of views of scenic resources from the highway and homes in the project area.	High Visual Impact: Would have a high level of impact on existing visual resources.	Moderately Low Visual Impact: Would cause topographic feature change, vegetation loss, and reduction of views of scenic resources from the highway and homes in the project area.	Moderately Low Visual Impact: Would cause topographic feature change, vegetation loss, and reduction of views of scenic resources from the highway and homes in the project area.	No Impact

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Cultural Resources (Archaeological)	Would have a low potential for buried archaeological deposits.	Would have a low potential for buried archaeological deposits.	Would have a low potential for buried archaeological deposits.	Would have a low potential for buried archaeological deposits.	No Impact
Cultural Resources (Architectural History)	Would not have an adverse impact on Butler Ditch, which is a contributing feature to the Modesto Irrigation District.	Would not have an adverse impact on Butler Ditch, which is a contributing feature to the Modesto Irrigation District.	No Impact	No Impact	No Impact
Hydrology and Floodplain	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	No Impact
Water Quality and Stormwater Runoff	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	No Impact
Geology, Soils, Seismicity and Topography	No Impact	No Impact	No impact	No impact	No Impact
Paleontology	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources. Anticipate 250,00 cubic yards of excavation and 15 drainage basins.	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources. Anticipate 300,000 cubic yards of excavation and 24 drainage basins.	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources. Anticipate 140,000 cubic yards of excavation and 13 drainage basins.	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources. Anticipate 140,000 cubic yards of excavation and 11 drainage basins.	No Impact
Hazardous Waste and Materials	There are 11 low-risk residential properties. Soils in the area might contain pesticides and herbicides, including arsenic, as a result of past farm operations.	There are 11 low-risk residential properties. Soils in the area might contain pesticides and herbicides, including arsenic, as a result of past farm operations.	There are 34 low-risk single-family properties and one high-risk property from the Cortese list.	There are 25 low-risk single-family properties and one high-risk property from the Cortese list.	No Impact
Air Quality	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Not improving the roadway would cause more traffic congestion, which would worsen the air quality.

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Noise and Vibration	Predicted future (2046) noise levels would permanently impact five receivers. There would also be temporary noise impacts from construction traffic and activities. Noise abatement not proposed resulting in unavoidable noise impact.	Predicted future (2046) noise levels would permanently impact five receivers. Noise abatement in the form of a soundwall was proposed for four receivers; however, it was not found to be feasible or reasonable. Noise abatement not proposed resulting in unavoidable noise impact.	Predicted future (2046) noise levels would permanently impact 36 receivers. There would also be temporary noise impacts from construction traffic and activities. No avoidance, minimization, and/or mitigation measures would be required for Build Alternatives 3 and 4.	Predicted future (2046) noise levels would permanently impact 36 receivers. There would also be temporary noise impacts from construction traffic and activities. No avoidance, minimization, and/or mitigation measures would be required for Build Alternatives 3 and 4.	No Impact
Energy	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be no energy impacts. Congestion and other transportation inefficiencies are likely to continue and result in an increase in energy consumption.
Natural Communities	Would permanently impact 24.08 acres of habitat areas (6.25 acres of ruderal, 14 acres of hayfield, and 3.38 acres of irrigated pasture). Would temporarily impact 2.09 acres of hayfield habitat.	Would permanently impact 94.35 acres of habitat areas (6.40 acres of ruderal, 84.24 acres of hayfield, and 3.71 acres of irrigated pasture).	Would permanently impact 56.18 acres of habitat areas (7.78 acres of ruderal, 33.59 acres of hayfield, and 14.21 acres of irrigated pasture). Would temporarily impact 3.73 acres of hayfield habitat.	Would permanently impact 64.53 acres of habitat areas (8.28 acres of ruderal, 50.41 acres of hayfield, and 5.24 acres of irrigated pasture). Would temporarily impact14.48 acres of hayfield habitat.	No Impact
Wetlands	Would permanently impact 0.053 acre of seasonal wetlands.	Would permanently impact 0.053 acre of seasonal wetlands.	Would permanently impact 0.166 acre of seasonal wetlands.	Would permanently impact 0.166 acre of seasonal wetlands.	No Impact
Waters of the U.S.	Would permanently impact 0.304 acre and temporarily impact 0.124 acre of Waters of the U.S.	Would permanently impact 4.95 acres and temporarily impact 0.074 acre of Waters of the U.S.	Would permanently impact 1.59 acres of Waters of the U.S.	Would permanently impact 0.537 acre and temporarily impact 0.134 acre of Waters of the U.S.	No Impact
Plant Species	Possible construction-related impacts to Alkali grass *(Puccinellia simplex)* and Parry's rough tarplant *(Centromadia parryi ssp. rudis)* habitat.	Possible construction-related impacts to Alkali grass *(Puccinellia simplex)* and Parry's rough tarplant *(Centromadia parryi ssp. rudis)* habitat.	Possible construction-related impacts to Alkali grass *(Puccinellia simplex)* and Parry's rough tarplant *(Centromadia parryi ssp. rudis)* habitat.	Possible construction-related impacts to Alkali grass *(Puccinellia simplex)* and Parry's rough tarplant *(Centromadia parryi ssp. rudis)* habitat.	No Impact
Animal Species	Possible impacts to Modesto song sparrow *(Melospiza melodia),* burrowing owls *(Athene cunicularia),* and merlin *(Falco columbarius).*	Possible impacts to Modesto song sparrow *(Melospiza melodia)*, burrowing owls *(Athene cunicularia),* and merlin *(Falco columbarius).*	Possible impacts to Modesto song sparrow *(Melospiza melodia)*, burrowing owls *(Athene cunicularia),* and merlin *(Falco columbarius).*	Possible impacts to Modesto song sparrow *(Melospiza melodia)*, burrowing owls *(Athene cunicularia),* and merlin *(Falco columbarius).*	No Impact
Threatened and Endangered Species	Would impact vernal pool fairy shrimp *(Branchinecta lynchi),* tricolored blackbirds *(Agelaius tricolor)*, Swainson's hawk *(Buteo swainsoni)*, and California tiger salamander *(Ambystoma californiense).*	Would impact vernal pool fairy shrimp *(Branchinecta lynchi),* tricolored blackbirds *(Agelaius tricolor)*, Swainson's hawk *(Buteo swainsoni)*, and California tiger salamander *(Ambystoma californiense).*	Would impact vernal pool fairy shrimp *(Branchinecta lynchi),* tricolored blackbirds *(Agelaius tricolor)*, Swainson's hawk *(Buteo swainsoni)*, and California tiger salamander *(Ambystoma californiense).*	Would impact vernal pool fairy shrimp *(Branchinecta lynchi),* tricolored blackbirds *(Agelaius tricolor)*, Swainson's hawk *(Buteo swainsoni)*, and California tiger salamander *(Ambystoma californiense).*	No Impact
Invasive Species	The project area is impacted by non-native species such as cheatgrass *(Bromus tectorum),* yellow starthistle *(Centaurea solstitialis),* and perennial pepperweed *(Lepidium latifolium).*	The project area is impacted by non-native species such as cheatgrass *(Bromus tectorum),* yellow starthistle *(Centaurea solstitialis),* and perennial pepperweed *(Lepidium latifolium).*	The project area is impacted by non-native species such as cheatgrass *(Bromus tectorum),* yellow starthistle *(Centaurea solstitialis),* and perennial pepperweed *(Lepidium latifolium).*	The project area is impacted by non-native species such as cheatgrass *(Bromus tectorum),* yellow starthistle *(Centaurea solstitialis),* and perennial pepperweed *(Lepidium latifolium).*	No Impact
Cumulative Impacts	Cumulative impacts to visual resources and farmland are expected.	Cumulative impacts to visual resources and farmland are expected.	Cumulative impacts to visual resources and farmland are expected.	Cumulative impacts to visual resources and farmland are expected.	No Impact

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Wildfire	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	No Impact
Climate Change	Would result in a 600 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 3,153 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 5,805 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 6,225 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year(2018).	Would result in a 347 tons per year reduction in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).

Public Scoping

A Notice of Preparation was sent to numerous federal, state, and local officials, as well as residents and other interested groups, and recorded at the State Clearinghouse on September 26, 2018. The filing of the Notice of Preparation began a 30-day scoping period that extended through October 25, 2018. This informed the recipients of Caltrans' and the Stanislaus Council of Governments' intent to prepare an Environmental Impact Report/Environmental Assessment and provided the project description, alternatives under consideration, and the environmental resources the project has the potential to affect. Recipients were also alerted to the state law requiring submittal of their comments to Caltrans no later than 30 days after receipt of the Notice of Preparation. A public information meeting was held on October 10, 2018. Meeting attendees were encouraged to provide written/oral comments at the meeting or directly to Caltrans staff via postal mail or email. Comments provided at the public information meeting were related to support for alternatives, environmental impacts, funding, existing traffic issues, loss of farmland, impacts to wildlife, and post mile clarification. See Chapter 4, Comments and Coordination, for additional information.

Coordination with the Public and Other Agencies

The proposed project would include coordination with agencies such as the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, the Regional Water Quality Control Board, the U.S. Environmental Protection Agency, and the State Historic Preservation Officer. Numerous outreach efforts were made in the form of public meetings and mailings to the public. Please see Chapter 4, Comments and Coordination, for a complete list of coordination efforts.

Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction.

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	1602 Streambed Alteration Coordination	Application to be submitted during the project's final design phase.
California Transportation Commission	Approval of a New Public Road	Application to be submitted after the approval of the project's final environmental impact report.
Regional Water Quality Control Board	401 Certification Coordination	Application to be submitted during the project's final design phase.
Regional Water Quality Control Board	National Pollutant Discharge Elimination System Permit/Caltrans National Pollutant Discharge Elimination System Permit CAS000003 and CAS00002 (General Construction Permit), Order Number 2009-0009-DWQ and Order Number 99-06-DWR.	Construction General Permit effective July 1, 2010; Caltrans National Pollutant Discharge Elimination System Permit effective July 1, 2013.
U.S. Army Corps of Engineers	404 Nationwide Permit Coordination	Application to be submitted during the project's final design phase.
U.S. Fish and Wildlife Service	Letter of Concurrence	To be obtained before the final environmental document.
State Historic Preservation Officer	Determinations of eligibility and effects upon cultural resources	In accordance with Section 106 of the National Historic Preservation Act, the State Historic Preservation Officer has provided concurrence with Caltrans' finding of No Adverse Effect for the proposed project on June 29, 2020.
Utility Companies	Utility Relocation/Modification Agreements	Agreements would be completed before construction.
Caltrans and Stanislaus County	Freeway Maintenance Agreement/Cooperative Agreement	To be developed during the final design phase and before construction.
San Joaquin Valley Air Pollution Control District	Air Impact Assessment Indirect Source Review as required (Rule 9510)	Contractor to comply with the requirements before construction.
San Joaquin Valley Air Pollution Control District	Air Quality Dust Control Plans	Contractor responsible to submit and obtain approval before construction.
Stanislaus County Department of Public Works	Encroachment Permit	Submittal and approval before construction.

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, is the lead agency under the National Environmental Policy Act. Caltrans is the lead agency under the California Environmental Quality Act. Caltrans proposes to improve 7.2 miles of State Route 132 from post miles 4.5 to R11.7, which is 2 miles west of the city of Modesto in Stanislaus County.

Under consideration are four Build Alternatives and a No-Build (No-Action) Alternative. The four Build Alternatives would involve the construction of a four-lane freeway or expressway from east of North Dakota Avenue to near Gates Road/Paradise Road. Build Alternatives 1 and 2 would be north of existing State Route 132 (Maze Boulevard) with a western end transition between existing State Route 132 alignments. Build Alternatives 3 and 4 would be next to existing State Route 132 (Maze Boulevard) with an eastern end transition between existing State Route 132 alignments. West of Gates Road/Paradise Road, roadway improvements would transition to the existing highway. See Figure 1-1 for the project vicinity map and Figure 1-2 for the project location map. See Figures 1-5 through 1-8 for the four Build Alternatives and their major proposed design features.

State Route 132 (Maze Boulevard) was originally a county road built in the early 1900's. It was added to the State Highway System in 1933.

In 1935, the California Highway Commission adopted the existing State Route 132 (Maze Boulevard), including a portion of the project limits, as a conventional highway. In 1956, the state of California, with support from Stanislaus County and the city of Modesto, adopted a freeway corridor along an alignment 0.5 mile north of the existing State Route 132 (Maze Boulevard). In 1958, the state of California proceeded with property acquisition for this project, and to date, Caltrans owns about 160 acres of right-of-way within and outside the project limits. However, the original project was delayed in part because the Federal-Aid Highway Act of 1956 diverted funds to projects that would complete the Interstate highway system and away from local highway projects.

Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. According to the Stanislaus County Comprehensive Economic Development Strategy, 43 percent of Stanislaus County's employed residents commute outside of the county, and 80 percent of those residents work in Bay Area communities.

Project funding is based on a combination of local, state, and federal sources. The project is included in the Stanislaus Council of Governments' Federal Transportation Improvement Program, the fiscally constrained 2018 Regional Transportation Plan/Sustainable Communities Strategy, and the 2019 Federal Transportation Improvement Program Amendment Number 9, along with Regional Transportation Plan Amendment Number 1. Total costs for the project are estimated to be between $116 million and $183 million using 2021 dollars, depending on the Build Alternative.

Figure 1-1 Project Vicinity Map

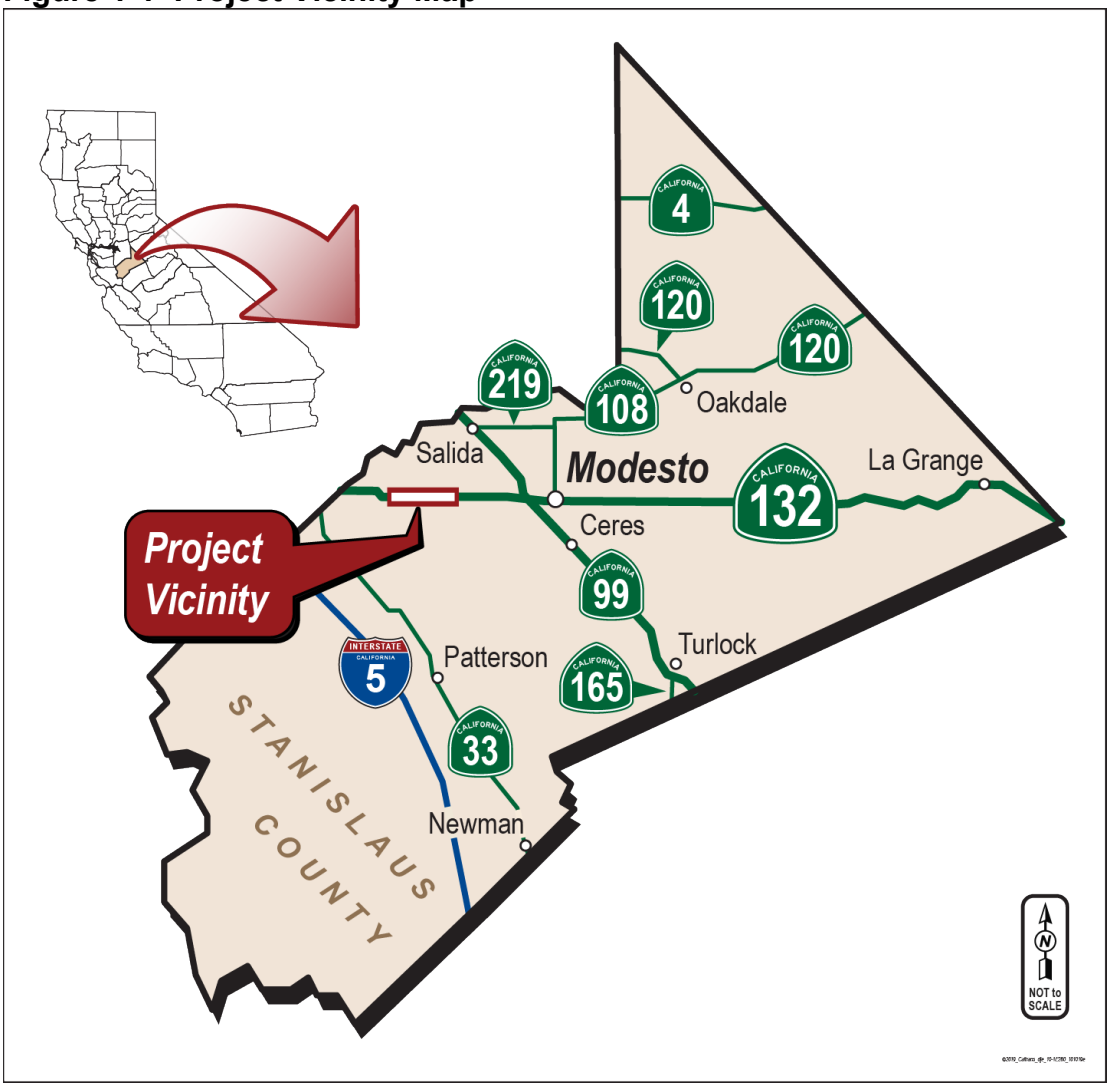
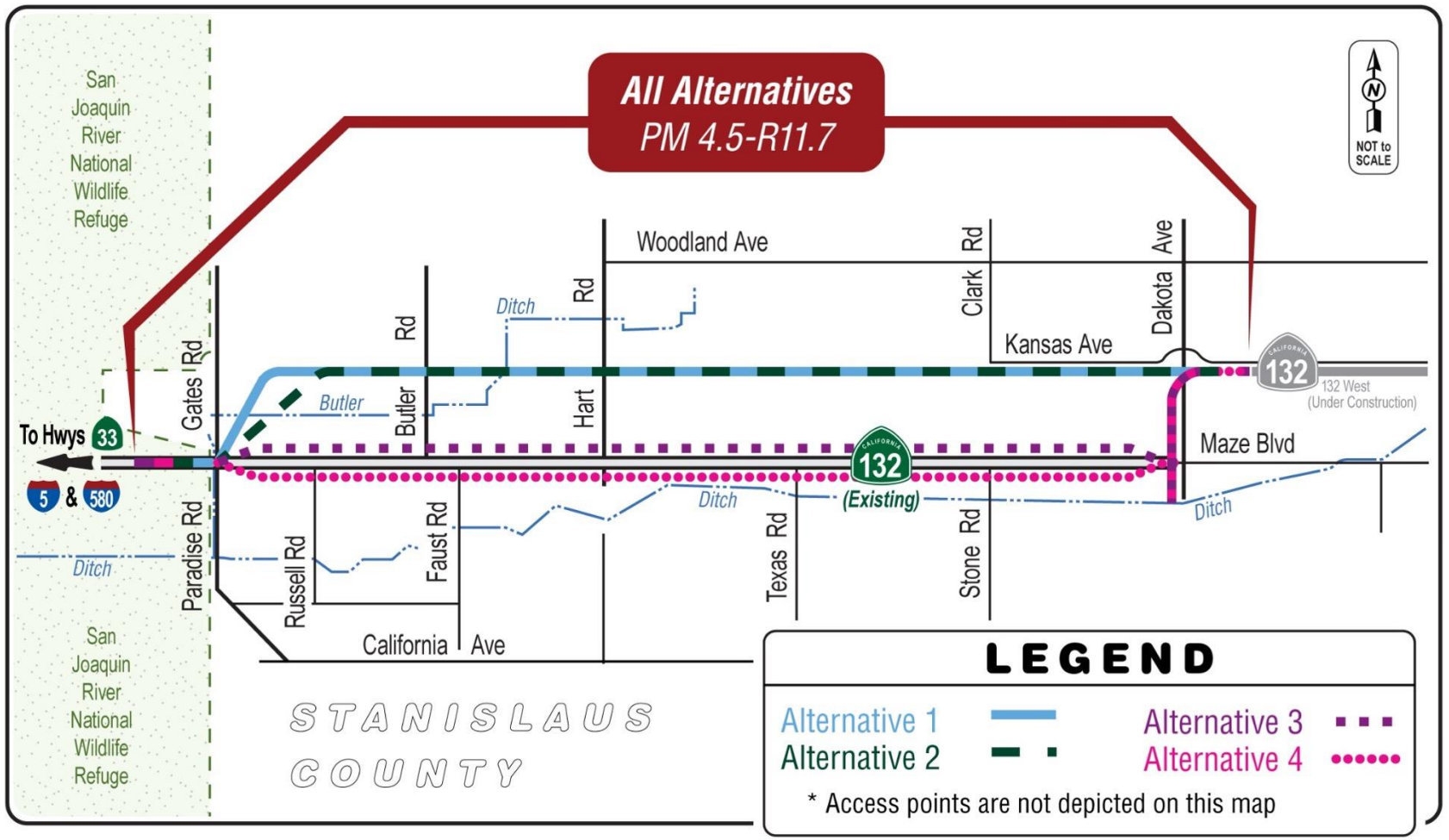


Figure 1-2: Project Location Map



The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. Existing State Route 132 (Maze Boulevard) is part of the regional expressway system and is the main east-west corridor in Stanislaus County. The two-lane conventional highway provides an interregional connection between Interstate 5 near the city of Tracy to the west and State Route 99 in the City of Modesto to the east. The existing highway is the only east-west corridor with access across the Tuolumne, San Joaquin, and Stanislaus rivers from the City of Modesto. State Route 132 has increasingly served the San Joaquin Valley and has become a major truck route between Interstate 5 and State Route 99.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to do the following:

- Improve mobility through western Stanislaus County.
- Improve capacity for regional movement of traffic and goods.
- Improve the circulation of local roads and connectivity to State Route 132.
- Provide route continuity.

1.2.2 Need

Improve Mobility Through Western Stanislaus County

Mobility refers to the ease of movement of any given traveler. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in the county. Users of State Route 132 include local drivers, commuters to the Bay Area, tourists, commercial trucks, and agricultural vehicles, including tractors. Although each of these users has specific transportation needs, improving mobility will benefit all users on State Route 132.

Existing Facility

State Route 132 (existing Maze Boulevard) was originally a county road constructed in the early 1900s and was added to the State Highway System in 1933. This route is the only highway connecting Interstate 5 and State Route 99 in the county and is essential to regional and interregional circulation. State Route 132 from Post Mile 4.5 to Post Mile 6.4 is a 3-lane passing lane section of the conventional highway, in which the eastbound passing lane section is Post Mile 4.5/5.5 and the westbound passing lane section is Post Mile 5.4/6.4. The passing lane section does not have a median and the outside shoulders vary from 2 feet to 8 feet. State Route 132 from

Post Mile 6.4 to Post Mile 11.4=T10.9 is a 2-lane, undivided, conventional highway with 12 feet travel lanes and 8 feet shoulders. There are existing isolated left and right-turn lanes at major intersections including Gates Road/Paradise Road, Hart Road and North Dakota Avenue/South Dakota Avenue. For the State Route 132 West Project, State Route 132 follows a temporary alignment along North Dakota Avenue between Maze Boulevard (Post Mile 11.4=T10.9) and the new alignment of State Route 132 expressway/freeway.

The posted speed of State Route 132 is 55 miles per hour along the highway portion and 65 miles per hour along the expressway portion being constructed (EA 10-40350) with the State Route 132 West Project. The posted speed limit is 45 miles per hour along the temporary State Route 132 highway roadway. Within the study area, the posted speed limit on State Route 132/Maze Boulevard varies between 25 miles per hour to 40 miles per hour within City limits and 55 miles per hour west of Rosemore Avenue.

The Final Traffic Operations Analysis Report produced for the project evaluated the operations of twelve intersections within the project limits. Only 3 contain dedicated turn lanes for motorists while the other intersections require motorists to turn directly from State Route 132. Turning movements directly off of the State Route has created conflicts for mainline traffic flow. Local drivers must slow down to turn onto local roads or private driveways directly from State Route 132, which causes through traffic to slow down. Local drivers include residents who live near the project area and employees of the 15 businesses within 0.5 mile of the project area. According to the traffic analysis report, the overall accident rate on this portion of State Route 132/Maze Boulevard is about 25 percent higher than the statewide average. The majority of accidents (32 percent) were rear end accidents, while the next major type of accident was broadside (28 percent). The high percentage of rear end accidents on State Route 132/Maze Boulevard were due to speeding (84.6 percent), improper turn (5.2 percent), failure to yield (5.1 percent), following too close (2.6 percent) and other than driver (2.6 percent). Out of the 39 rear end collisions, there are only three that occurred at an intersection. The majority of the rear end collisions occurred during traffic hours.

The 2018 Regional Transportation Plan Tri-County Model is the current travel demand model used to develop traffic volumes for all scenarios in the traffic analysis report and this document. The existing conditions were based on 2018 counts.

For 2018, along State Route 132, the existing truck percentages derived from counts were 8 percent of daily, 21 percent of morning peak hour and 6 percent of evening peak hour traffic. The Tri-County Model projects 2046 design year truck percentages forecasted for no project conditions to be 14

percent daily, 36 percent of morning peak hour and 13 percent evening peak hour traffic.

The Measures of Effectiveness determines the overall operation of State Route 132 (see Section 2.1.8, Traffic and Transportation/Pedestrian and Bicycle Facilities, for detailed information on the measures). For 2018, the Traffic Operations Analysis Report listed vehicles entering the network in the morning peak hour at 1,851 and 2,727 in the evening peak hour. For the 2026 no project condition, it is anticipated that 2,515 vehicles would enter the network in the morning peak hour and 3,465 in the evening peak hour. For the 2046 no project condition, it is anticipated that 3,464 vehicles would enter the network in the morning peak hour and 4,615 in the evening peak hour. If this increasing traffic along State Route 132 is not addressed, all Measures of Effectiveness would worsen by 2026, particularly total vehicle hours of delay by 44 percent in the morning and evening peak hours. Total vehicle hours of delay are the amount of delay incurred during the peak period because of congestion and demand exceeding the capacity of the freeway.

Although mobility is not one of the Measures of Effectiveness, it can be measured in two ways—time traveled, or distance traveled. Average speed is an effective way to measure the mobility of any road because it is calculated by dividing a distance by the time it takes to get there (which are the two factors of mobility). Table 1.1, obtained from the Traffic Operations Analysis Report, shows the average speed in miles per hour on State Route 132 during peak hours in existing conditions (2018), the construction year (2026), and the design year (2046). The table shows that average speeds on State Route 132 would decrease significantly by 2046. Additional traffic information is also provided within Section 2.1.8 of this document.

Table 1.1 Average Speed In Miles Per Hour on Existing State Route 132

Measure of Effectiveness	Peak Hour	Existing Conditions (2018)	Construction Year (2026)	Design Year (2046)
Average Speed	Morning	46	43	26
Average Speed	Evening	44	41	28

Source: Final Traffic Operations Analysis Report (October 2019).

Level of Service is another measurement that can provide information about the mobility of vehicles on a roadway. It is a rating that uses qualitative measures to characterize operational conditions within a traffic stream and their perception by users. It is defined by “percent time-spent-following” and average travel speed. These two factors can indicate how congested a road is, with a Level of Service A indicating free-flow travel and Level of Service F indicating congested traffic at a standstill. Table 1.2 shows that during peak hours, State Route 132 (Maze Boulevard) is mostly at a Level of Service D, meaning high-density flow in which speed and freedom to maneuver are severely restricted, and comfort and convenience have declined even though

flow remains stable. Table 1.3 lists the current and projected average daily traffic along existing State Route 132 (Maze Boulevard). It is expected that the Level of Service, as shown in Table 1.3, would continue to decline on State Route 132 if Bay Area commuters continue to move into and live in communities with affordable housing in the Central Valley.

Figure 1-3 Levels of Service for Two-Lane Highway, Intersections with Traffic Signals, and Two-Way Stop Intersections

LEVELS OF SERVICE
for Intersections with Traffic Signals

Level of Service	Delay per Vehicle (seconds)
A	≤10
B	11-20
C	21-35
D	36-55
E	56-80
F	>80

Factors Affecting LOS of Signalized Intersections

Traffic Signal Conditions:
- Signal Coordination
- Cycle Length
- Protected left turn
- Timing
- Pre-timed or traffic activated signal
- Etc.

Geometric Conditions:
- Left- and right-turn lanes
- Number of lanes
- Etc.

Traffic Conditions:
- Percent of truck traffic
- Number of pedestrians
- Etc.

Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

LEVELS OF SERVICE
for Two-Way Stop Intersections

Level of Service	Flow Conditions	Delay per Vehicle (seconds)	Technical Descriptions
A		≤10	Very short delays
B		11-15	Short delays
C		16-25	Minimal delays
D		26-35	Minimal delays
E		36-50	Significant delays
F		>50	Considerable delays

Source: 2000 HCM, Exhibit 17-2, Level of Service Criteria for TWSC Intersections

LEVELS OF SERVICE
for Unsignalized Intersections

Level of Service	Flow Conditions	Delay per Vehicle (seconds)	Technical Descriptions
A		<10	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **Very short delay**
B		10-15	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		15-25	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		25-35	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35-50	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F		>50	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

Table 1.2 Levels of Service on Existing State Route 132 (Maze Boulevard)

Road Segment	Levels of Service for Morning Peak Hour (2018)	Levels of Service for Evening Peak Hour (2018)
State Route 132 (Maze Boulevard) between 1 mile east of Dakota Avenue and Dakota Avenue	D	D
State Route 132 (Maze Boulevard) between South Dakota Avenue and Stone Avenue	D	E
State Route 132 (Maze Boulevard) between Stone Avenue and Hart Road	D	D
State Route 132 (Maze Boulevard) between Hart Road and Gates Road/Paradise Road	D	D
State Route 132 (Maze Boulevard) between Gates Road and 1 mile west of Gates Road	D	D

Source: Final Traffic Operations Analysis Report (October 2019).

Table 1.3 Levels of Service on Existing State Route 132 (Maze Boulevard) in Future Years

Road Segment	Morning Peak Hour (2026)	Evening Peak Hour (2026)	Morning Peak Hour (2046)	Evening Peak Hour (2046)
State Route 132 eastbound from 1 mile west of Gates Road to Gates Road	D	F	C	F
State Route 132 eastbound from Gates Road to Hart Road	D	E	D	E
State Route 132 eastbound from Hart Road to Maze Boulevard	C	E	D	E
State Route 132 eastbound from Maze Boulevard to Dakota Avenue	A	C	B	D
State Route 132 eastbound from Dakota Avenue to 1 mile east of Dakota Avenue	A	C	B	D
State Route 132 westbound from 1 mile east of Dakota Avenue to Dakota Avenue	A	B	B	C
State Route 132 westbound from Dakota Avenue to Maze Boulevard	A	B	B	D
State Route 132 westbound from Maze Boulevard to Hart Road	D	D	E	E
State Route 132 westbound from Hart Road to Gates Road	D	D	E	E
State Route 132 westbound from Gates Road to 1 mile west of Gates Road	E	F	F	F

Source: Final Traffic Operations Analysis Report (October 2019).

Improve Capacity for Regional Movement of Traffic and Goods

Stanislaus County is an important food-processing region where poultry, dairy, and vegetable products are processed and distributed throughout the world every day. Goods movement is the result of production activities within and outside the region, using a complex system of routes, modes, terminals, and warehouse facilities. The Central Valley is a high priority region in the state's Goods Movement Action Plan (2007), with particular emphasis on Bay Area/Central Valley Access Improvements.

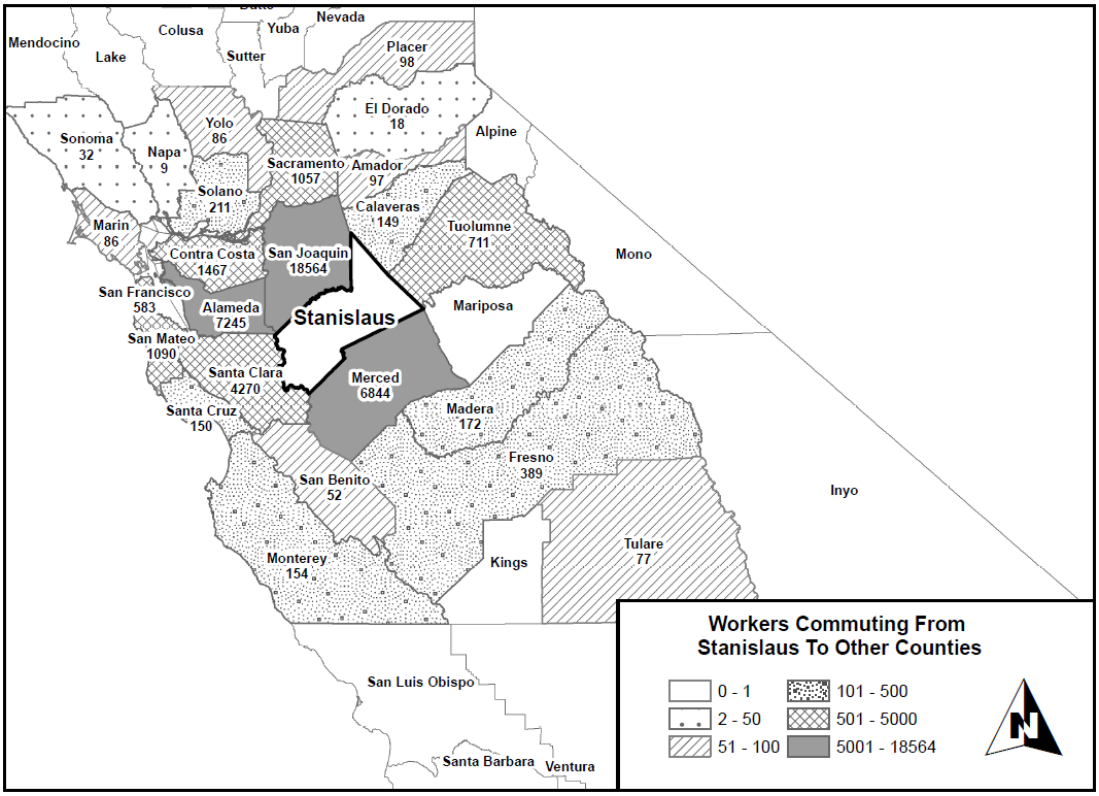
Traffic congestion and operational conflicts between trucks and passenger vehicles have been identified by the Final Traffic Operation Analysis Report

as key issues that need to be addressed to maintain an efficient goods movement. The high percentage of trucks on the roads in the study area reflects the high demand in the area for goods movement. According to the Stanislaus County Regional Transportation Plan, over the past few decades, Stanislaus County has been able to sustain its growth without extensive expansion of county roads and state highways because sufficient capacity has been available on the existing system to absorb the traffic generated by new growth. However, over the past few years, the rate of traffic growth in Stanislaus County has started to exceed the available transportation system capacity in some areas.

Goods movement would also increase with an expanded population and economic base. Large urbanized areas require millions of tons of goods each year to maintain their economic activities. Truck traffic would continue to increase on State Route 132. Under existing conditions, up to 21 percent of the average daily traffic on State Route 132 is trucks (TOAR 2019). Farm equipment, such as tractors, also use State Route 132 (Maze Boulevard) and contribute to traffic congestion.

Commuters also contribute to regional and interregional traffic. About 43 percent of Stanislaus County residents commute out of the county for work. According to Figure 1-4, 7,245 workers commute to Alameda County, and 4,270 workers commute to Santa Clara County from Stanislaus County. These commuters would likely use State Route 132 (Maze Boulevard) to drive to and from work regularly.

Figure 1-4 Workers Commuting From Stanislaus County to Other Counties



Source: Employment Development Department 2009-2013.

The population of Stanislaus County is projected to increase as more housing developments are built. According to the Stanislaus Council of Governments' 2014 Demographic Forecast, Stanislaus County is projected to have a 2.2 percent annual increase in households, resulting in over 100,000 more households by 2040. The high percentage of interregional commuting trips and increasing population is contributing to traffic congestion in the area. The expected growth in freight would also contribute to congestion.

The current daily traffic volumes within the project area range between 12,800 and 13,100 vehicles. A traffic analysis of the existing segment of State Route 132 indicates an increase in congestion because of deficiencies of the existing highway and increases in regional traffic and interregional commuter and truck traffic.

Table 1.4 Current and Projected Average Daily Traffic Along Existing State Route 132 (Maze Boulevard)

Road Segment	2018 (vehicles)	2026 (vehicles)	2046 (vehicles)
State Route 132 Dakota Avenue to Gates Road	13,100	15,000	19,500

Source: District 10 Traffic Forecasting (October 2019).

Improve the Circulation of Local Roads and Connectivity to State Route 132

Several east-west highways in the Central Valley connect to State Route 99 and Interstate 5, but for people in Stanislaus County, the main east-west highways are State Route 132 and State Route 120 to the north. State Route 120 is often used because of its direct connections to Interstate 205 and Interstate 580, but State Route 120 is experiencing increasing traffic congestion, delays, and high accident rates. As traffic conditions continue to worsen on State Route 120, more drivers will use State Route 132 to avoid traffic delays. Table 1.5 shows that total vehicle hours of delay during the morning peak hour on State Route 132 would increase by more than eight times the current delay by 2046.

Table 1.5 Total Vehicle Hours of Delay on State Route 132

Measure of Effectiveness	Peak Hour	Existing Conditions (2018)	Construction Year (2026)	Design Year (2046)
Total Vehicle Hours of Delay	Morning	24.6	43.8	226.6
Total Vehicle Hours of Delay	Evening	37	65.5	238.4

Source: Final Traffic Operations Analysis Report (October 2019).

State Route 132 is currently a two-lane highway with broken yellow lines dividing the lanes of opposite travel throughout the majority of the project length. The broken yellow lines allow drivers to pass on the left if safe conditions exist. However, during peak hours, passing opportunities can be limited due to traffic congestion and further worsened by truck traffic. The number of lanes does not allow for adequate circulation of traffic.

The local circulation network is made up of residents and traffic generated by agribusinesses. One of the priorities of the Stanislaus County Board of Supervisors is to strive for “a strong agricultural economy/heritage.” The Stanislaus Grown brand is a project funded through the East Stanislaus Resource Conservation District and supports 72 local farms and businesses to build bridges between producers and consumers. Each of these businesses participates in local farmers markets throughout Stanislaus County. Improvements to State Route 132 would make the bridge between producers and consumers easier to cross.

Provide Route Continuity

State Route 132 has recently been widened east of the proposed project near State Route 132 in the western part of the City of Modesto. The State Route 132 West project is currently upgrading State Route 132 to a four-lane freeway or expressway, which would connect to the proposed project at the east end near North Dakota Avenue. The proposed project is in the Stanislaus Council of Governments’ 2018 Regional Transportation Plan. This

Regional Transportation Plan was designed to help the Stanislaus region meet its transportation needs for the 25-year period from 2017 to 2042, considering existing and projected future land use patterns as well as forecasted population and job growth. Additionally, the Regional Transportation Plan is focused on infill redevelopment and emphasizing more transit-oriented development.

1.2.3 Independent Utility and Logical Termini

Federal Highway Administration regulations (23 Code of Federal Regulations Section 771.111[f]) require that a proposed project:

- Have a rational beginning and ending point (i.e., logical termini) and be of sufficient length to address environmental matters on a broad scope.
- Be a functional and reasonable expenditure even if no additional transportation improvements are made in the area (i.e., independent utility).
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

State Route 132 (Maze Boulevard) is a county road built in the early 1900s. It was added to the State Highway System in 1933 and was originally adopted by the California Highway Commission as a conventional highway in 1935 including the portion within the project limits. State Route 132 was adopted by the California Highway Commission on June 20, 1956 as a freeway on new alignment (north of its existing location, just south of Kansas Avenue) starting at the San Joaquin River to State Route 99. Freeway Agreements were executed with the County, which included future interchanges at Gates Road, Hart Road, North Dakota Avenue, Carpenter Road, and at State Route 99. Butler Road access was proposed to be severed. Between the late 1950s to late 1960s, Caltrans acquired most of the right of way needed for the adopted freeway corridor construction. In 1975, a Notice of Intent to Rescind the Freeway Adoption was passed by the California Highway Commission; however, in 1976, the California Highway Commission conditionally retained the Freeway Route Adoption if Caltrans, Stanislaus County and the City of Modesto signed a cooperative agreement to assume responsibility for hardship and protection of the right of way acquired until construction funds for the freeway construction became available. The cooperative agreement was signed March 1, 1977.

After several years of inactivity due to lack of funding and after the Interregional Road System designation in 1991, Caltrans approved a Project Study Report documenting two alternatives including the project limits of the State Route 132 Dakota Avenue to Gates Road project. A subsequent Revised Project Study Report was approved in July 1993 per a California Transportation Commission mandate in 1992 for a “Special Study” of State Route 132 between Interstate 580 and State Route 99. Several subsequent

Project Study Reports and Project Study Report-Project Development Support reports for various sections between Interstate 5 and State Route 99 were developed in the late 1990s and early 2000s. From 1995 to 1999 Caltrans worked with Stanislaus County, the U.S. Fish and Wildlife Service and the San Joaquin River National Wildlife Refuge Management to develop proposed alignments through the refuge area. This effort culminated in a letter from U.S. Fish and Wildlife Service recommending the future State Route 132 improvements be kept close to the existing alignment to minimize impacts on the refuge. Two of the Project Study Report-Project Development Supports approved in 2001 included, in portions, the project limits of the State Route 132 Dakota Avenue to Gates Road project. In 2002, a Corridor Feasibility Study was approved to evaluate the feasibility of the various sections of State Route 132 improvements and validated the recommendation of the U.S. Fish and Wildlife Service through the refuge area.

During the Project Approval and Environmental Document phase of the State Route 132 Dakota Avenue to Gates Road project and after Project Approval and Environmental Document approval of the State Route 132 West project in March 2019, a temporary route adoption was approved by the California Transportation Commission in June 2019 as part of the overall State Route 132 West project, which is proposed to be constructed in two phases. Both phases use the existing North Dakota Avenue alignment for providing route continuity between the State Route 132 West Freeway/Expressway at the northern end to the existing State Route 132 conventional highway at the southern end.

The proposed project limits—from North Dakota Avenue to Gates Road/Paradise Road—are rational end points to improve transportation because it is a section of State Route 132 that experiences conflict of movements for mainline traffic.

West of Gates Road/Paradise Road, there are very few local roads that connect to State Route 132 that would cause a conflict of movement. There is also a passing lane on State Route 132 west of the proposed project that reduces traffic conflicts. The proposed project would have independent utility, meaning that State Route 132 would be operable even if no additional transportation improvements in the area are made. The proposed alternatives would limit the number of access points along State Route 132 and would serve the identified need for improving operations, making it a reasonable expenditure.

The proposed project would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements because the project has been designed with multiple alternatives. In 2002, a feasibility study was done to determine the best alternatives to widen State Route 132. One of the determinations made was that any alternative proposed for the segment of State Route 132 that runs through the San Joaquin River National Wildlife

Refuge should follow the existing State Route 132 (Maze Boulevard) as closely as possible to minimize impacts to the refuge and maintain continuity with the route.. Accordingly, all the alternatives proposed for the State Route 132 Dakota Avenue to Gates Road project would be compatible with that determination.

1.3 Project Description

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the project while avoiding or minimizing environmental impacts. The alternatives are Build Alternative 1, Build Alternative 2, Build Alternative 3, Build Alternative 4, and the No-Build (No-Action) Alternative.

The proposed project lies on State Route 132 in Stanislaus County 2 miles west of the city of Modesto (see Figure 1-1). A four-lane freeway or expressway would be built on either an existing alignment or on a new alignment from Gates Road/Paradise Road to North Dakota Avenue along with transitions between alignments, from post miles 6.4 to R11.7. West of Gates Road/Paradise Road, roadway improvements would be built to transition to the existing highway, from post miles 4.5 to 6.4. This project (State Route 132 Dakota Avenue to Gates Road) would be an extension of the State Route 132 West Freeway/Expressway that is currently under construction. There are five alternatives under consideration, including the No-Build (No-Action) Alternative. Each of the four Build Alternatives would replace a portion (about 0.3 mile) of State Route 132 east of North Dakota Avenue.

1.4 Project Alternatives

This section describes the Build Alternatives under consideration and compares the differences between them. The alternatives under consideration are Build Alternatives 1, 2, 3, and 4, and the No-Build (No-Action) Alternative. The alternatives are evaluated by how well each meets the project's purpose and need and avoids and/or minimizes environmental impacts. Criteria used to evaluate each of the alternatives were potential impacts on human and natural resources, project feasibility, ability to meet the project's purpose and need, and overall project cost.

1.4.1 Build Alternatives

Build Alternative 1

Build Alternative 1 would involve the construction of a controlled-access four-lane divided expressway about 0.5 mile north of existing State Route 132 (Maze Boulevard) with a western end expressway transition between the alignment (see Figure 1-5 for details). At the western end of the project, there would be one road that leads north (realigned Gates Road) to Gates Road

and another road that leads south (remaining section of proposed State Route 132) to Maze Boulevard/existing State Route 132 (Maze Boulevard). The road that leads south would have a signalized intersection at Maze Boulevard and realigned Paradise Road. Existing access from Gates Road/Paradise Road would be removed and replaced with two cul-de-sacs on either side of State Route 132. Access would be available via realigned Gates Road and realigned Paradise Road.

Build Alternative 1 would have two roundabouts: one at the intersection of the proposed State Route 132 and the realigned Gates Road, and a second roundabout at the intersection of the proposed State Route 132 and Hart Road. Butler Road north of the expressway would access a proposed frontage road to Hart Road for access onto and off the proposed State Route 132 expressway. South of State Route 132, Butler Road would be converted into a cul-de-sac with existing access to Maze Boulevard. North Dakota Avenue would have an overcrossing at the newly built State Route 132 with no access to State Route 132. Figure 1-5 shows the new alignment and the major features of this alternative.

Temporary State Route 132 (a portion of North Dakota Avenue), between the new alignment and existing Maze Boulevard alignment, would be relinquished to Stanislaus County after the construction of the proposed expressway is complete. Maze Boulevard—the existing State Route 132 (Maze Boulevard)—would be relinquished to Stanislaus County and become a frontage road that would connect to the proposed State Route 132 expressway at the west end near the proposed realigned Paradise Road and North Dakota Avenue at the east end of the project.

Butler Ditch Crossings

Build Alternative 1 would cross over the Modesto Irrigation District's Butler Ditch in two locations. The first overcrossing, which would occur at post mile R6.26, would result in a 250-foot-long at-grade culvert or pipeline. The second overcrossing, which would occur at post mile R7.82, would result in an estimated 300-foot-long at-grade culvert or pipeline.

Build Alternative 2

Build Alternative 2 would involve the construction of a controlled-access four-lane divided freeway about 0.5 mile north of the existing State Route 132 (Maze Boulevard) with a western end expressway transition between alignments (see Figure 1-6 for details). The western end of the proposed State Route 132 would be an expressway that connects the proposed freeway portion to the east and curve south and merge with the existing State Route 132 (Maze Boulevard) near existing Gates Road. The freeway would be access-controlled and would include two interchanges. One interchange would be at the realigned Gates Road and would provide access for realigned Paradise Road, Maze Boulevard, and the new alignment of State Route 132.

The other interchange would be at Hart Road and the new alignment of State Route 132.

Each interchange would have a roundabout at the eastbound and westbound on-ramp and off-ramp intersections with the local roads. Butler Road north of the expressway would access a proposed frontage road to Hart Road for access onto and off Hart Road. South of State Route 132 and Butler Road would be converted into a cul-de-sac with existing access to Maze Boulevard. North Dakota Avenue would have an overcrossing at the newly built State Route 132 with no access to State Route 132. Figure 1-6 shows the new alignment and the major features of this alternative.

Temporary State Route 132 (a portion of North Dakota Avenue), between the new alignment and existing Maze Boulevard alignment, would be relinquished to Stanislaus County after the construction of the proposed freeway is complete. Maze Boulevard—the existing State Route 132—would be relinquished to Stanislaus County and become a frontage road connecting to the proposed State Route 132 expressway at the west end near the proposed realigned Paradise Road and North Dakota Avenue at the east end of the project.

Butler Ditch Crossings

The crossings for Build Alternative 2 would include one new elevated crossing (maximum 25 feet higher than the original grade/canal bank) at post mile R6.74. At this location, about 2,300 feet of an open canal would be piped, or an underground box culvert would be built. The second crossing for Build Alternative 2 would occur at post mile R7.82 and would convert 300 feet of an open canal into a pipe or underground culvert.

Build Alternative 3

Build Alternative 3 would involve the construction of a controlled-access four-lane expressway next to the existing State Route 132 (Maze Boulevard), on the northern side, with an eastern end expressway transition between alignments (see Figure 1-7). The western end of the project would lead directly into the existing State Route 132 (Maze Boulevard) at the realigned Gates Road/Paradise Road. At North Dakota Avenue, State Route 132 would curve south, connecting the newly built State Route 132 freeway/expressway to the proposed State Route 132 expressway.

The proposed expressway would be access-controlled with signalized intersections at the realigned Gates Road/Paradise Road, Hart Road, at existing Maze Boulevard and Dakota Avenue on the east end of the proposed State Route 132 expressway, and at the existing State Route 132 West Freeway/Expressway and North Dakota Avenue along the expressway transition. Butler Road would have right-turn-only access onto and off the proposed State Route 132 expressway. Existing access from Gates Road/Paradise Road would be removed and replaced with two cul-de-sacs on

both sides of State Route 132 (Maze Boulevard). Access would be available via realigned Gates Road and realigned Paradise Road. Additionally, several frontage roads to other public roads are expected due to limited access to the proposed expressway. Figure 1-7 shows the proposed route of State Route 132 and the major features of this alternative.

Temporary State Route 132 (a portion of North Dakota Avenue) would be abandoned/demolished after construction is complete of the proposed expressway transition. Maze Boulevard (the existing State Route 132 (Maze Boulevard)), would be relinquished to Stanislaus County and become a frontage road south of the proposed State Route 132 expressway and would end as a cul-de-sac at the eastern and western ends.

Build Alternative 4

Build Alternative 4 would involve the construction of a controlled-access four-lane expressway next to the existing State Route 132 (Maze Boulevard), on the southern side, with an eastern end expressway transition between alignments (see Figure 1-8). The western end of the project would lead directly into the existing State Route 132 (Maze Boulevard) at the realigned Gates Road/Paradise Road. At North Dakota Avenue, State Route 132 would curve south, connecting the newly built State Route 132 freeway/expressway to the proposed State Route 132 expressway. Dakota Avenue would be available for use during construction but would be abandoned/demolished after construction is complete. The existing State Route 132 (Maze Boulevard) would be relinquished to Stanislaus County and become a frontage road north of the proposed State Route 132 expressway and would end as a cul-de-sac at both the eastern and western ends.

The proposed expressway would be access-controlled with signalized intersections at realigned Gates Road/Paradise Road, Hart Road, at the existing Maze Boulevard and South Dakota Avenue intersection at the east end of the proposed State Route 132 expressway and the existing State Route 132 West Freeway/Expressway and North Dakota Avenue intersection along the expressway transition. Butler Road would not have direct access to proposed State Route 132; however, access would be available at the Hart Road signalized intersection via the Maze Boulevard frontage road. Existing access from Gates Road/Paradise Road would be removed and replaced with two cul-de-sacs on both sides of State Route 132 (Maze Boulevard). Access would be available via realigned Gates Road and realigned Paradise Road. Additionally, several frontage roads to other public roads are expected due to limited access to the proposed expressway.

Figure 1-5 Build Alternative 1

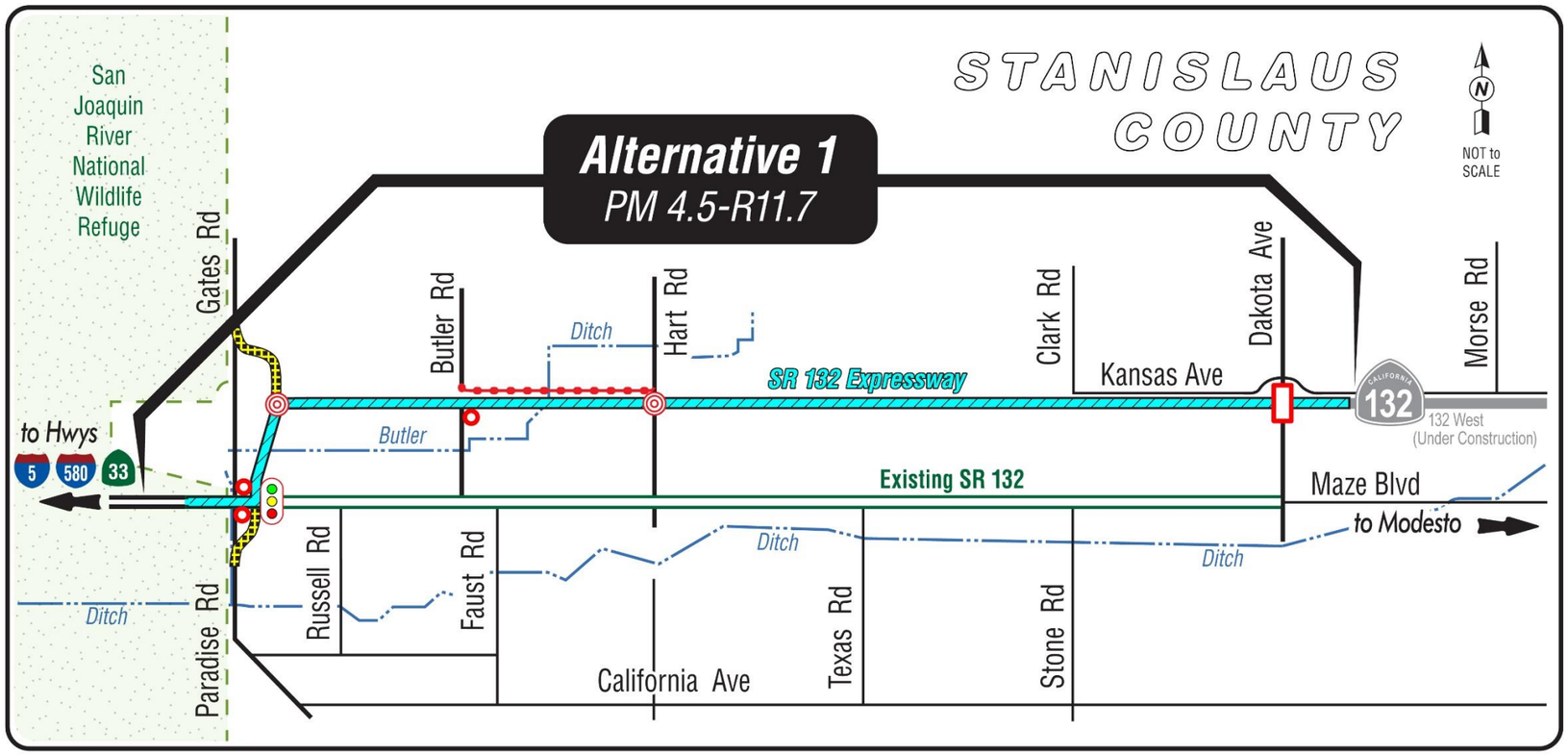


Figure 1-6 Build Alternative 2

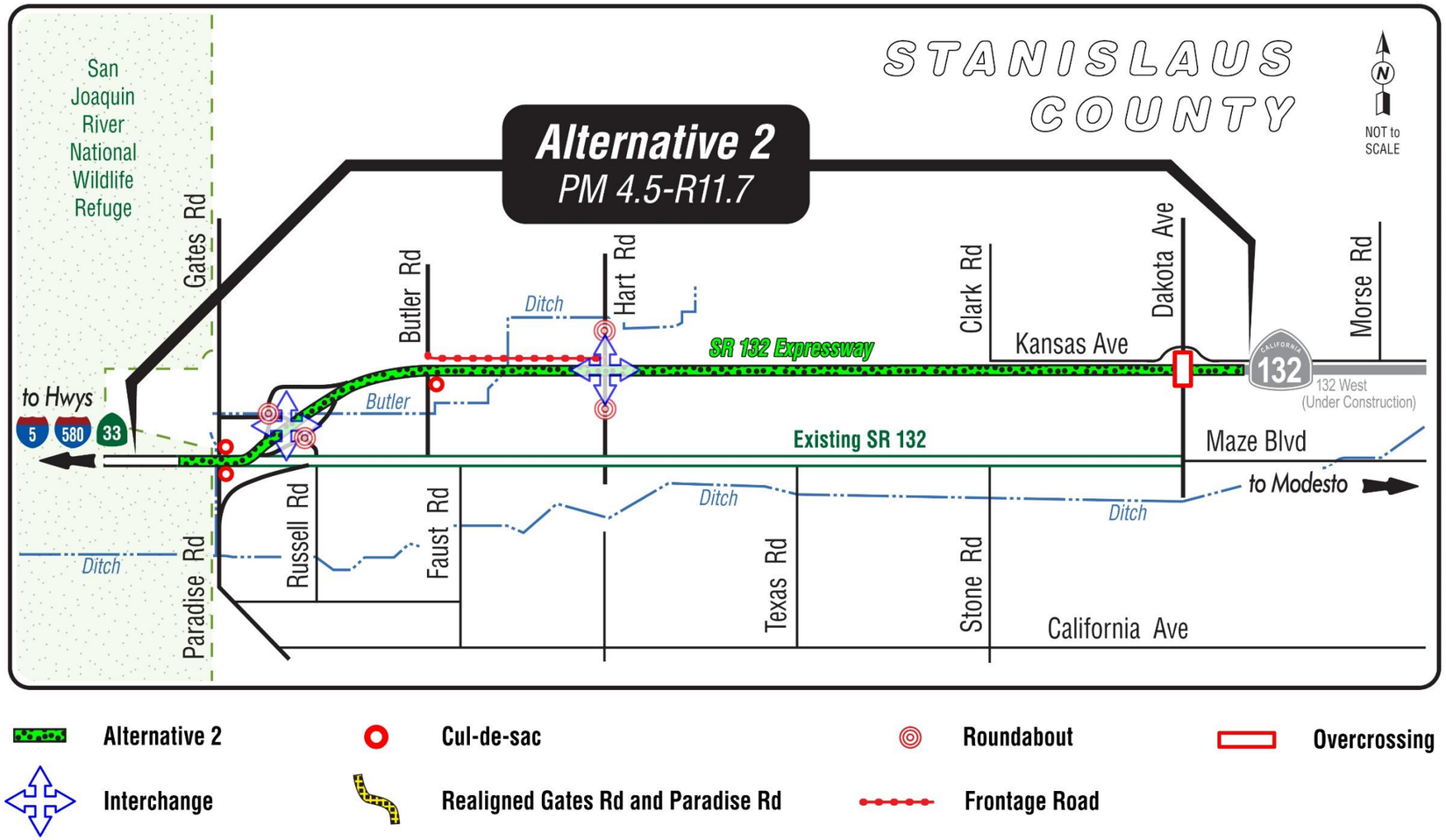
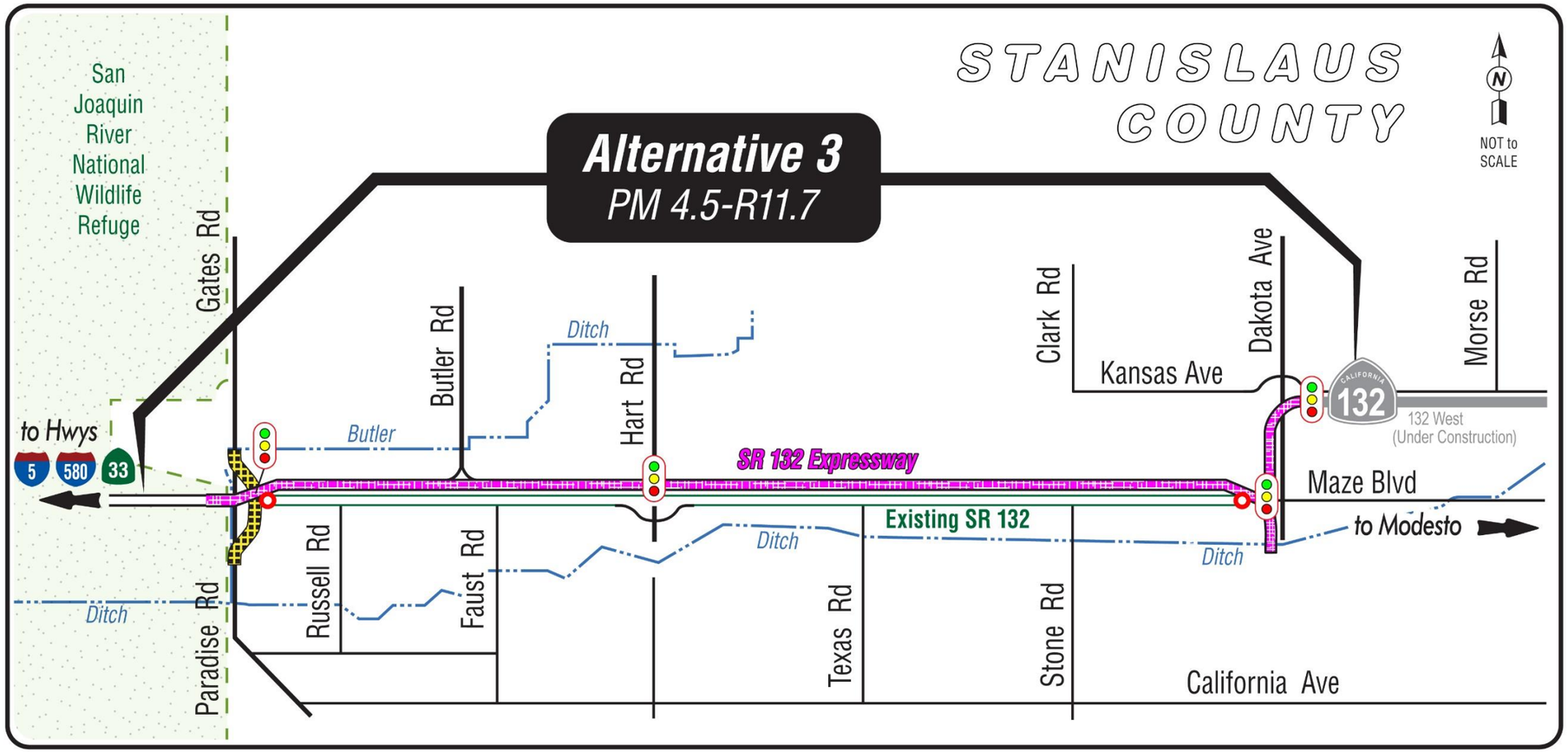


Figure 1-7 Build Alternative 3



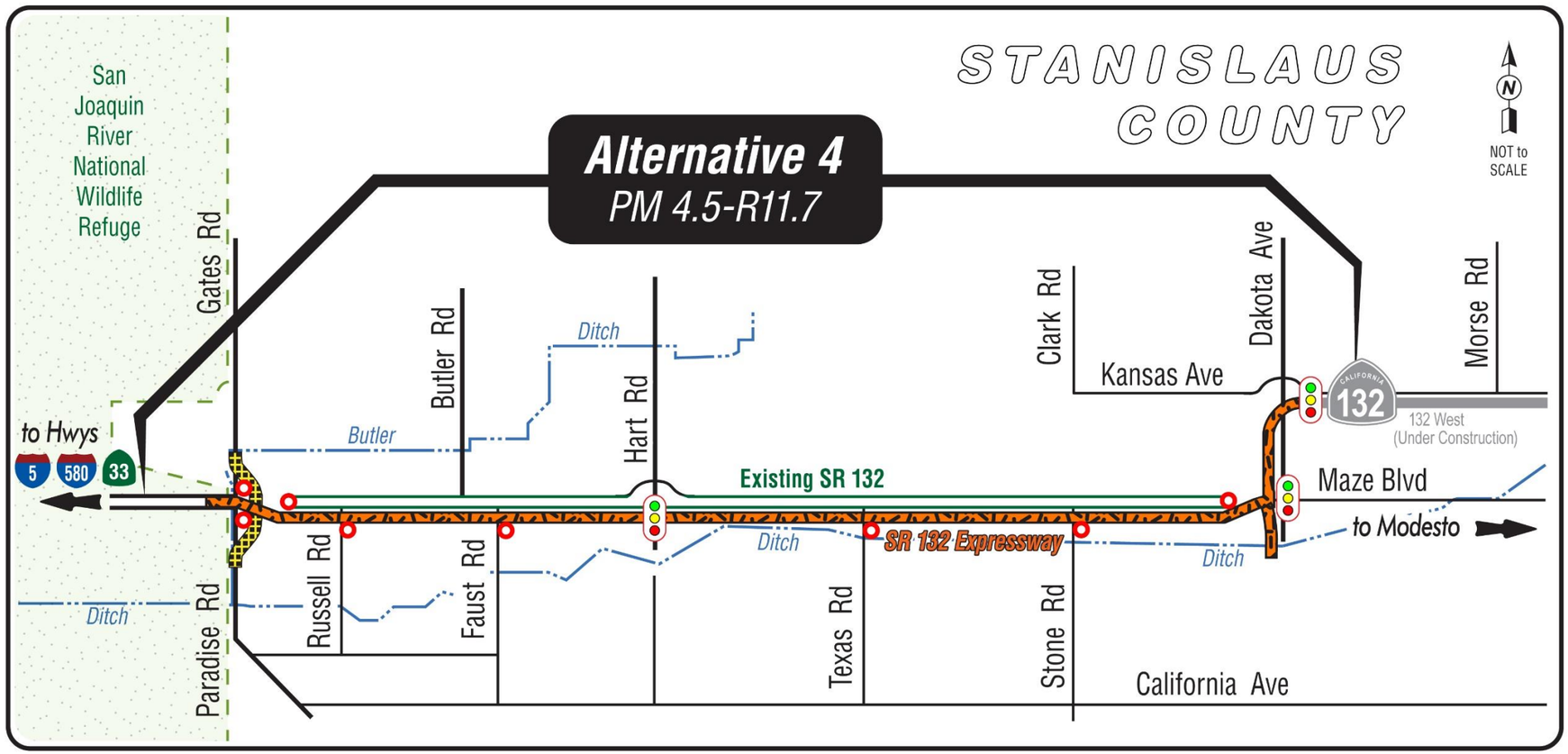
Alternative 3

Cul-de-sac

Signalized intersection

Realigned Gates Rd and Paradise Rd

Figure 1-8 Build Alternative 4



Common Design Features of the Build Alternatives

All Build Alternatives would result in a four-lane divided expressway or freeway between post miles 6.4 and R11.7, with roadway improvements between post miles 4.5 and 6.4 west of Gates Road/Paradise Road. At the western end of the project, the existing Gates Road and Paradise Road would be converted into cul-de-sacs on both sides of State Route 132 (Maze Boulevard).

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 in Chapter 2.

Unique Features of the Build Alternatives

Build Alternative 1

Build Alternative 1 would involve the construction of an expressway along the proposed northern alignment of State Route 132, which is just south of existing Kansas Avenue. Build Alternative 1 is proposed to transition from the northern alignment to the existing State Route 132 alignment via a proposed expressway and intersections.

For Build Alternative 1, at the western end of the project, there would be one road that leads north (realigned Gates Road) to Gates Road and another road that leads south (remaining section of proposed State Route 132) to existing State Route 132 (Maze Boulevard). The road that leads south would have a signalized intersection at Maze Boulevard and realigned Paradise Road. Existing access from Gates Road/Paradise Road would be removed and replaced with two cul-de-sacs on both sides of State Route 132.

Build Alternative 1 would have two roundabouts: one at the intersection of the proposed State Route 132 expressway and the realigned Gates Road, and a second roundabout at the intersection of the proposed State Route 132 expressway and Hart Road. Butler Road north of the expressway would access a proposed frontage road to Hart Road for access onto and off the proposed State Route 132 expressway. South of State Route 132, Butler Road would be converted into a cul-de-sac with existing access to Maze Boulevard. North Dakota Avenue would have an overcrossing at the newly built State Route 132 with no access to State Route 132.

There are several proposed retention basins for Build Alternative 1 at various locations. Additionally, Build Alternative 1 would have two crossings over the Butler Ditch open channel at post mile R6.25 and post mile R7.82. The crossings would be built with either pipe culvert or concrete box culvert.

Build Alternative 2

Build Alternative 2 would involve the construction of a controlled-access four-lane divided freeway along the proposed northern alignment of State Route 132, which is just south of existing Kansas Avenue. Build Alternative 2 is proposed to transition from the northern alignment to the existing State Route 132 alignment via a proposed direct connection expressway.

The western end of the proposed State Route 132 expressway would curve south and merge with the existing State Route 132 (Maze Boulevard) near existing Gates Road. The freeway would be access-controlled and would include two interchanges. One interchange would be at the realigned Gates Road, providing access for realigned Paradise Road and Maze Boulevard, and the new alignment of State Route 132. The other interchange would be at Hart Road and the new alignment of State Route 132.

Each interchange would have a roundabout at the westbound and eastbound on-ramp and off-ramp intersections with the local roads. Butler Road north of the expressway would access a proposed frontage road to Hart Road for access onto and off of Hart Road. South of State Route 132, Butler Road would be converted into a cul-de-sac with existing access to Maze Boulevard. North Dakota Avenue would have an overcrossing at the newly built State Route 132 with no access to State Route 132.

There are several proposed retention basins at various locations. Build Alternative 2 would have two crossings over the Butler Ditch. The first crossing would occur at post mile R6.74 and would be built either with pipes or an underground box. The second crossing would occur at post mile R7.82 and would be built into a pipe or underground culvert.

Build Alternative 3

Build Alternative 3 would involve the construction of an expressway on the north side of Maze Boulevard. The western end of the project would lead directly into existing State Route 132 at the realigned Gates Road/Paradise Road. At North Dakota Avenue, State Route 132 would curve south, connecting the newly built State Route 132 freeway/expressway to the proposed State Route 132 expressway.

Dakota Avenue would be available for use during construction but would be abandoned/demolished after construction is complete. Maze Boulevard (the existing State Route 132 (Maze Boulevard)), would be relinquished to Stanislaus County and become a frontage road south of the proposed State Route 132 expressway and would end as a cul-de-sac at the eastern and western ends.

The proposed expressway would be access-controlled with signalized intersections at the realigned Gates Road/Paradise Road, Hart Road, at the existing Maze Boulevard and South Dakota Avenue at the east end of the

proposed State Route 132 expressway and the existing State Route 132 West Freeway/Expressway and North Dakota Avenue along the expressway transition. Butler Road would have right-turn-only access onto and off the proposed State Route 132 expressway. Existing access from Gates Road/Paradise Road would be removed and replaced with two cul-de-sacs on both sides of State Route 132 (Maze Boulevard). Additionally, there are several proposed retention basins at various locations.

Build Alternative 4

Build Alternative 4 would be on the south side of Maze Boulevard. The western end of the project would lead directly into the existing State Route 132 (Maze Boulevard) at the realigned Gates Road/Paradise Road. At North Dakota Avenue, State Route 132 would curve south, connecting the newly built State Route 132 freeway/expressway to the proposed State Route 132 expressway. Dakota Avenue would be available for use during construction but would be abandoned/demolished after construction is complete. Maze Boulevard (the existing State Route 132 (Maze Boulevard)) would be relinquished to Stanislaus County and become a frontage road north of the proposed State Route 132 expressway and would end as a cul-de-sac at both the eastern and western ends.

Build Alternative 4 is a proposed expressway with access-controlled signalized intersections at realigned Gates Road/Paradise Road, Hart Road, and at the existing Maze Boulevard and the east end of the proposed State Route 132 expressway. Butler Road would not have direct access to the proposed State Route 132 expressway; however, access would be available at the Hart Road signalized intersection via the Maze Boulevard frontage road. Existing access from Gates Road/Paradise Road would be removed and replaced with two cul-de-sacs on both sides of State Route 132 (Maze Boulevard). There are also several proposed retention basins at various locations.

Reversible Lanes

Assembly Bill 2542 amended California Streets and Highways Code to require, effective January 1, 2017, that Caltrans or a regional transportation planning agency demonstrate that reversible lanes were considered when submitting a capacity-increasing project or a major street or highway lane realignment project to the California Transportation Commission for approval. (California Streets and Highways Code, Section 100.15) In general, reversible lanes require strong traffic patterns with clearly defined peak hours corresponding to opposite directions of travel, such as commute travel patterns. According to the Traffic Operations Analysis Report dated October 2019, under Chapter 6 Construction Year Analysis for both 2026 and 2046 (Table 6-7 and Table 6-8, respectively, which can be found in Volume 3) indicates a high amount of vehicle miles traveled for existing and future 2026 to 2046 construction years in both the morning and evening peak hours.

There are also current and predicted heavy traffic volumes in both directions regardless of the time of day, which may be the result of a combination of regional and interregional traffic combined with the high volume of truck traffic. Since there is not a single direction for the flow of traffic, reversible lanes are an infeasible alternative for the proposed project. Because the existing facility only has two lanes, it is not feasible to convert one lane to a reversible lane (also see Section 1.6 Alternatives Considered but Eliminated from Further Discussion - Transportation System Management Alternatives for further details).

1.4.2 No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would leave existing State Route 132 (Maze Boulevard) in its current condition as a two-lane, conventional highway. The No-Build (No-Action) Alternative does not meet the purpose and need of the project because it would not improve mobility through western Stanislaus County. All Measures of Effectiveness would worsen in the No-Build (No-Action) Alternative, resulting in increased vehicle hours of delay and slower average speeds. Additionally, the No-Build (No-Action) Alternative would not provide adequate capacity for the regional movement of traffic and goods. All Measures of Effectiveness would worsen under the No-Build (No-Action) Alternative due to an increase in traffic demand. Lastly, the No-Build (No-Action) Alternative would not provide consistency with the existing and future local, regional, and interregional transportation facilities.

1.5 Comparison of Alternatives

The criteria used to evaluate each of the alternatives included the following: ability to meet the project's purpose and need, potential impacts on human and natural resources, project feasibility, and overall project cost.

As noted in Table 1.6, all of the Build Alternatives would meet the purpose and need of the project by converting State Route 132 into a four-lane access-controlled freeway or expressway, which would improve mobility, provide adequate capacity for regional movement of traffic and goods, and enhance the local circulation network.

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. Under the California Environmental Quality Act, Caltrans will certify that the project complies with the California Environmental Quality Act, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered before project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant

impacts, if mitigation measures were included as conditions of project approval, that findings were made, and that a Statement of Overriding Considerations was adopted.

Similarly, if Caltrans, as assigned by the Federal Highway Administration, determines that the National Environmental Policy Act action does not significantly impact the environment, Caltrans will issue a Finding of No Significant Impact. If it is determined that the project is likely to have a significant effect on the environment, an Environmental Impact Statement will be prepared.

Section 1.4 Project Alternatives provides a full description of the alternatives, as shown in Figure 1-5 through Figure 1-8. Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures, explains the potential impacts for each of the alternatives.

Table 1.6 Summary of Potential Impacts from Alternatives

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Meets Purpose and Need	Yes	Yes	Yes	Yes	No
Land Use—Consistency with the Modesto General Plan	No Impact	No Impact	No Impact	No Impact	No Impact
Land Use—Consistency with the Stanislaus County General Plan	No Impact	No Impact	No Impact	No Impact	No Impact
Land Use/Farmland	Build Alternative 1 would convert 299.82 acres of farmland. Of this, there are 222 acres of Prime and Unique designated farmland, and 12 acres of Statewide and Local Importance designated farmland. Additionally, 97.11 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 1.	Build Alternative 2 would convert 446.21 acres of farmland. Of this, there are 371 acres of Prime and Unique designated farmland, and 22 acres of Statewide and Local Importance designated farmland. Additionally, 153.62 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 2.	Build Alternative 3 would convert 305.64 acres of farmland. Of this, there are 237 acres of Prime and Unique designated farmland, and 3 acres of Statewide and Local Importance designated farmland. Additionally, 136.12 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 3.	Build Alternative 4 would convert 282 acres of farmland. Of this, there are 234 acres of Prime and Unique designated farmland, with no designated farmland of Statewide and Local Importance. Additionally, 144.74 acres of farmland enrolled in the Williamson Act Program would be impacted. There is one agricultural conservation easement that would be impacted by right-of-way acquisition from Build Alternative 4.	No Impact
Growth	No Impact	No Impact	No Impact	No Impact	No Impact
Community Character and Cohesion	No Impact	No Impact	No Impact	No Impact	No Impact
Business Displacements	No Impact	Potential to impact one business.	Potential to impact four businesses.	Potential to impact four businesses.	No Impact
Housing Displacements	Potential to impact four single-family homes.	Potential to impact seven single-family homes.	Potential to impact 34 single-family homes.	Potential to impact 25 single-family homes, one duplex, and 14 mobile homes.	No Impact
Utility Service Relocation	Electricity, telephone, cable, and natural gas would be relocated.	Electricity, telephone, cable, and natural gas would be relocated.	Electricity, telephone, cable, and natural gas would be relocated.	Electricity, telephone, cable, and natural gas would be relocated.	No Impact
Environmental Justice	There would not be disproportionate impacts to environmental justice communities. Noise, visual, and dust from construction activities would cause minor temporary impacts to the mobile park.	There would not be disproportionate impacts to environmental justice communities. Noise, visual, and dust from construction activities would cause minor temporary impacts to the mobile park.	There would not be disproportionate impacts to environmental justice communities. Noise, visual, and dust from construction activities would cause minor temporary impacts to the mobile park.	There would be high and adverse disproportionate impacts on the Mobile Home Park due to relocations. I	No Impact
Utilities/Emergency Services	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No disruption of utilities is expected during construction. Detours on local roads would be available during construction. Traffic management would be available before construction.	No Impact

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Traffic and Transportation/ Pedestrian and Bicycle Facilities	The levels of service would be improved.	The levels of service would be improved.	The levels of service would be improved.	The levels of service would be improved.	The levels of service would deteriorate, decrease average speed, and increase travel times.
Visual/Aesthetics	Moderate Visual Impact: Would cause topographic feature change, vegetation loss, and reduction of views of scenic resources from the highway and homes in the project area.	High Visual Impact: Would have a high level of impact on existing visual resources.	Moderately Low Visual Impact: Would cause topographic feature change, vegetation loss, and reduction of views of scenic resources from the highway and homes in the project area.	Moderately Low Visual Impact: Would cause topographic feature change, vegetation loss, and reduction of views of scenic resources from the highway and homes in the project area.	No Impact
Cultural Resources (Archaeological)	Would have a low potential for buried archaeological deposits.	Would have a low potential for buried archaeological deposits.	Would have a low potential for buried archaeological deposits.	Would have a low potential for buried archaeological deposits.	No Impact
Cultural Resources (Architectural History)	Would not have an adverse impact on Butler Ditch, which is a contributing feature to the Modesto Irrigation District.	Would not have an adverse impact on Butler Ditch, which is a contributing feature to the Modesto Irrigation District.	No Impact	No Impact	No Impact
Hydrology and Floodplain	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	Would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain and would not constitute a significant floodplain encroachment as defined in Section 650.105q of Code of Federal Regulations 23. An additional 40 acres of an impervious surface would be added, which could affect the exiting watershed by escalating the flow and volume of stormwater runoff.	No Impact
Water Quality and Stormwater Runoff	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	There would be a potential for short-term impacts, including discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains during construction. There would also be potential long-term impacts from increased impervious areas, operation, and maintenance activities.	No Impact
Geology, Soils, Seismicity and Topography	There would be a low risk of ground shaking and landslides. Ground disturbance from grading and excavation could increase erosion and the loss of topsoil.	There would be a low risk of ground shaking and landslides. Ground disturbance from grading and excavation could increase erosion and the loss of topsoil.	There would be a low risk of ground shaking and landslides. Ground disturbance from grading and excavation could increase erosion and the loss of topsoil.	There would be a low risk of ground shaking and landslides. Ground disturbance from grading and excavation could increase erosion and the loss of topsoil.	No Impact

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Paleontology	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources.	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources.	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources.	The Modesto Formation occurs within the project area and is identified as having high sensitivity for paleontological resources.	No Impact
Hazardous Waste and Materials	There are 11 low-risk residential properties. Soils in the area might contain pesticides and herbicides, including arsenic, as a result of past farm operations.	There are 11 low-risk residential properties. Soils in the area might contain pesticides and herbicides, including arsenic, as a result of past farm operations.	There are 34 low-risk single-family properties and one high-risk property from the Cortese list.	There are 25 low-risk single-family properties and one high-risk property from the Cortese list.	No Impact
Air Quality	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Construction equipment would cause short term impacts in the form of air pollutants, which would include hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors.	Not improving the roadway would cause more traffic congestion, which would worsen the air quality.
Noise and Vibration	Predicted future (2046) noise levels would permanently impact five receivers. There would also be temporary noise impacts from construction traffic and activities.	Predicted future (2046) noise levels would permanently impact five receivers. Noise abatement in the form of a soundwall was proposed for four receivers; however, it was not found to be feasible or reasonable.	Predicted future (2046) noise levels would permanently impact 36 receivers. There would also be temporary noise impacts from construction traffic and activities.	Predicted future (2046) noise levels would permanently impact 36 receivers. There would also be temporary noise impacts from construction traffic and activities.	No Impact
Energy	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be temporary energy consumption during construction for the use of construction equipment and on-road vehicles.	There would be no energy impacts. Congestion and other transportation inefficiencies are likely to continue and result in an increase in energy consumption.
Natural Communities	Would permanently impact 24.08 acres of habitat areas (6.25 acres of ruderal, 14 acres of hayfield, and 3.38 acres of irrigated pasture). Would temporarily impact 2.09 acres of hayfield habitat.	Would permanently impact 94.35 acres of habitat areas (6.40 acres of ruderal, 84.24 acres of hayfield, and 3.71 acres of irrigated pasture).	Would permanently impact 56.18 acres of habitat areas (7.78 acres of ruderal, 33.59 acres of hayfield, and 14.21 acres of irrigated pasture). Would temporarily impact 3.73 acres of hayfield habitat.	Would permanently impact 64.53 acres of habitat areas (8.28 acres of ruderal, 50.41 acres of hayfield, and 5.24 acres of irrigated pasture). Would temporarily impact 14.48 acres of hayfield habitat.	No Impact
Wetlands	Would permanently impact 0.053 acre of seasonal wetlands.	Would permanently impact 0.053 acre of seasonal wetlands.	Would permanently impact 0.166 acre of seasonal wetlands.	Would permanently impact 0.166 acre of seasonal wetlands.	No Impact
Waters of the U.S.	Would permanently impact 0.304 acre and temporarily impact 0.124 acre of Waters of the U.S.	Would permanently impact 4.95 acres and temporarily impact 0.074 acre of Waters of the U.S.	Would permanently impact 1.59 acres of Waters of the U.S.	Would permanently impact 0.537 acre and temporarily impact 0.134 acre of Waters of the U.S.	No Impact

Potential Impact	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4	No-Build (No-Action) Alternative
Plant Species	Possible construction-related impacts to Alkali grass (Puccinellia simplex) and Parry's rough tarplant (Centromadia parryi ssp. rudis) habitat.	Possible construction-related impacts to Alkali grass (Puccinellia simplex) and Parry's rough tarplant (Centromadia parryi ssp. rudis) habitat.	Possible construction-related impacts to Alkali grass (Puccinellia simplex) and Parry's rough tarplant (Centromadia parryi ssp. rudis) habitat.	Possible construction-related impacts to Alkali grass (Puccinellia simplex) and Parry's rough tarplant (Centromadia parryi ssp. rudis) habitat.	No Impact
Animal Species	Possible impacts to Modesto song sparrow (Melospiza melodia), burrowing owls (Athene cunicularia), and merlin (Falco columbarius).	Possible impacts to Modesto song sparrow (Melospiza melodia), burrowing owls (Athene cunicularia), and merlin (Falco columbarius).	Possible impacts to Modesto song sparrow (Melospiza melodia), burrowing owls (Athene cunicularia), and merlin (Falco columbarius).	Possible impacts to Modesto song sparrow (Melospiza melodia), burrowing owls (Athene cunicularia), and merlin (Falco columbarius).	No Impact
Threatened and Endangered Species	Would impact vernal pool fairy shrimp (Branchinecta lynchi), tricolored blackbirds (Agelaius tricolor), Swainson's hawk (Buteo swainsoni), and California tiger salamander (Ambystoma californiense).	Would impact vernal pool fairy shrimp (Branchinecta lynchi), tricolored blackbirds (Agelaius tricolor), Swainson's hawk (Buteo swainsoni), and California tiger salamander (Ambystoma californiense).	Would impact vernal pool fairy shrimp (Branchinecta lynchi), tricolored blackbirds (Agelaius tricolor), Swainson's hawk (Buteo swainsoni), and California tiger salamander (Ambystoma californiense).	Would impact vernal pool fairy shrimp (Branchinecta lynchi), tricolored blackbirds (Agelaius tricolor), Swainson's hawk (Buteo swainsoni), and California tiger salamander (Ambystoma californiense).	No Impact
Invasive Species	The project area is impacted by non-native species such as cheatgrass (Bromus tectorum), yellow starthistle (Centaurea solstitialis), and perennial pepperweed (Lepidium latifolium).	The project area is impacted by non-native species such as cheatgrass (Bromus tectorum), yellow starthistle (Centaurea solstitialis), and perennial pepperweed (Lepidium latifolium).	The project area is impacted by non-native species such as cheatgrass (Bromus tectorum), yellow starthistle (Centaurea solstitialis), and perennial pepperweed (Lepidium latifolium).	The project area is impacted by non-native species such as cheatgrass (Bromus tectorum), yellow starthistle (Centaurea solstitialis), and perennial pepperweed (Lepidium latifolium).	No Impact
Cumulative Impacts	Cumulative impacts to visual resources and farmland are expected.	Cumulative impacts to visual resources and farmland are expected.	Cumulative impacts to visual resources and farmland are expected.	Cumulative impacts to visual resources and farmland are expected.	No Impact
Wildfire	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	The project is not in or near a state responsibility area or land classified as a very high fire hazard severity zone as designated by the California Department of Forestry and Fire Protection.	No Impact
Climate Change	Would result in a 600 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 3,153 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 5,805 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 6,225 tons per year increase in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).	Would result in a 347 tons per year reduction in greenhouse gas emissions in the design year (2046) compared to the existing year (2018).

1.6 Alternatives Considered but Eliminated from Further Discussion

1.6.1 Transportation Demand Management and Transportation System Management Alternatives

Transportation Demand Management

Transportation Demand Management emphasizes regional means of reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It decreases higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation options in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the travel experience. A Transportation Demand Management alternative generally would provide funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals.

For the proposed project, this Transportation Demand Management alternative considered how to accommodate forecasted traffic volumes on existing State Route 132 (Maze Boulevard). The alternatives included supporting regional agencies to promote ride-sharing by way of installing ‘Share the Roads’ signs on existing and proposed roadways and continued participation in Bike to Work Day. The alternatives also included other festivities and seminars that educate the public on the benefits of biking and walking per the Stanislaus County Non-Motorized Transportation Plan and the Stanislaus Council of Governments' 2014 Regional Transportation Plan/Sustainable Communities Strategy.

Forecasted traffic on existing State Route 132 (Maze Boulevard) would increase due to the regional movement of traffic and goods between eastern-western Stanislaus County. If the existing highway is not widened to accommodate future traffic volumes, a severe bottleneck would occur and would lead to traffic operational deficiencies. The Transportation Demand Management alternative would not alone improve system connectivity between the existing highways within the project corridor. The project is within a rural area, and many programs involve strategies or actions that focus on changing travel behavior and choices that would benefit urbanized areas but are not practical for residents within the project limits. Therefore, the alternative would not be adequate to meet the project’s purpose and need.

Transportation System Management

Transportation System Management strategies increase the efficiency of existing facilities by increasing the number of vehicle trips a facility can carry without increasing the number of through lanes. These approaches can include ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. Additionally, Transportation System Management encourages automobile, public and private transit, ride-sharing programs, and bicycle and

pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit.

This alternative considered implementing cost-effective intersection improvements to existing State Route 132 (Maze Boulevard) to eliminate rural driveways that create conflict movements for the mainline traffic, build signal-controlled intersections, roundabout-controlled intersections, improve pedestrian and bicycle safety with signalized intersections, and restrict turning movements. The main goal of the improvements would be to provide adequate highway capacity and mobility to accommodate traffic volumes along existing State Route 132 (Maze Boulevard) and through western Stanislaus County.

This Transportation System Management alternative would be comparable to all proposed Build Alternatives described in Section 1.4, Common Design Features of the Build Alternatives, because it would involve eliminating several driveway accesses, the need to build signalized-controlled intersections and roundabout-controlled intersections, and the need to accommodate Surface Transportation Assistance Act truck left-turn movements.

These proposed improvements are currently being included in the respective cities' and the county's capital improvement programs and have been identified and proposed for the project where applicable. These improvements on their own would not be sufficient to meet the project purpose and need because substantial additional area-wide intersection and traffic signal improvements beyond what is currently planned would be needed to improve regional circulation. Congestion and roadway capacity issues would still exist beyond the capability of the circulation system, even with additional intersection and signal improvements, due to existing and project high traffic volumes in the region.

Policies related to vanpools, trains, buses, bicycles and walking are in place in the respective cities' and the county's general plans. These policies have been adopted as goals in each of the communities, but taken alone would not meet the project purpose and need to improve capacity and support the efficient movement of goods and services for truck traffic throughout the region by improving the circulation network.

The Transportation System Management strategies could help accommodate future increases in traffic volumes and improve the Level of Service between existing State Route 132 (Maze Boulevard) and State Route 99. However, because Transportation System Management improvements are part of the regional network, each is already incorporated into future conditions (2046) for all of the proposed alternatives.

Mass Transit Alternative

Reliable and convenient public and private transit services are key considerations of the Stanislaus region's overall transportation system.

According to the Stanislaus Council of Governments' Regional Transportation System (Transit), about 0.9 percent of Stanislaus County commuters used transit.

The public transit services available to Stanislaus County residents include Dibs and California Vanpool Authority. Dibs is a travel service available in Stanislaus, San Joaquin, and Merced counties that provides information about transportation options, including carpooling, vanpooling, riding transit, biking, and walking. The goal of Dibs is to enhance air quality and help reduce congestion through Transportation Demand Strategies. California Vanpool Authority is a program offered by the California Vanpool Authority that provides van-share options for qualified California residents. California Vanpool Authority allows for individuals to use available vehicles for their personal or commute needs without having to own a car themselves.

Also, the Consolidated Transportation Services Agency of Stanislaus County, now referred to as MOVE, coordinates transportation programs that provide transportation services for transit-dependent individuals who are unable to use public transit due to physical or cognitive disabilities. MOVE links both public transit and private social service agency services together to address service gaps that public transit may not be able to address. In particular, MOVE's Mobility Training and BRIDGES Volunteer Driver Program provide opportunities for elderly and disabled individuals to learn how to use the public transit system or, if they cannot use public transit, use a volunteer driver program that can provide transportation for their daily activities.

In terms of forecasted truck volume, the Mass Transit alternative would not help the ability to transport goods and services because there are no roadway improvements beyond the proposed project limits between existing State Route 132 (Maze Boulevard) and State Route 99. The Mass Transit alternative would not accommodate the projected volumes of truck traffic (heavy vehicles make up 21 percent of the total volume under existing conditions during morning peak hours and 6 percent during evening peak hours on State Route 132 (Maze Boulevard)). A Mass Transit project on State Route 132 has not been identified as part of the Stanislaus Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy. Because truck traffic would not be addressed, the Mass Transit Alternative would not meet the project's purpose and need to Improve capacity for regional movement of traffic and goods.

1.7 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	1602 Streambed Alteration Coordination	Application to be submitted during the project's final design phase.
California Transportation Commission	Approval of a New Public Road	Application to be submitted after the approval of the project's final environmental impact report.
Regional Water Quality Control Board	401 Certification Coordination	Application to be submitted during the project's final design phase.
Regional Water Quality Control Board	National Pollutant Discharge Elimination System Permit/Caltrans National Pollutant Discharge Elimination System Permit CAS000003 and CAS00002 (General Construction Permit), Order Number 2009-0009-DWQ and Order Number 99-06-DWR.	Construction General Permit effective July 1, 2010; Caltrans National Pollutant Discharge Elimination System Permit effective July 1, 2013.
U.S. Army Corps of Engineers	404 Nationwide Permit Coordination	Application to be submitted during the project's final design phase.
U.S. Fish and Wildlife Service	Letter of Concurrence	To be obtained before the final environmental document.
State Historic Preservation Officer	Determinations of eligibility and effects upon cultural resources	In accordance with Section 106 of the National Historic Preservation Act, the State Historic Preservation Officer has provided concurrence with Caltrans' finding of No Adverse Effect for the proposed project on June 29, 2020.
Utility Companies	Utility Relocation/Modification Agreements	Agreements would be completed before construction.
Caltrans and Stanislaus County	Freeway Maintenance Agreement/Cooperative Agreement	To be developed during the final design phase and before construction.
San Joaquin Valley Air Pollution Control District	Air Impact Assessment Indirect Source Review as required (Rule 9510)	Contractor to comply with the requirements before construction.
San Joaquin Valley Air Pollution Control District	Air Quality Dust Control Plans	Contractor responsible to submit and obtain approval before construction.
Stanislaus County Department of Public Works	Encroachment Permit	Submittal and approval before construction.

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

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

- Coastal Zones: The project study area is not near any coastal zones. (Field review, 2018)
- Timberlands: No timberlands are in or near the project study area. The project is in a rural/agricultural setting. (Community Impact Assessment, August 2020)
- Mineral Resources: The mineral resources delineated in the Stanislaus County General Plan are not within the project area, and the project would not result in the loss of availability of mineral resources. (Stanislaus County General Plan, 2015)
- Wild and Scenic Rivers: No wild and scenic rivers are in or near the project study area. (National Wild and Scenic Rivers System website)
- Parks and Recreational Facilities: There are no parks or recreational facilities within the project study area. (Community Impact Assessment, August 2020)
- Growth: The first-cut screening analysis revealed that the project is not likely to influence future growth, and no resources of concern would be affected. Additional analysis related to growth is not warranted. (Community Impact Assessment, August 2020)
- Geology, Soils, Seismicity and Topography: The project area is away from known, active faults and experiences lower levels of shaking less frequently. (Earthquake Shaking Potential for California Map from the California Department of Conservation)
- Wildfire: The project site is not in a fire hazard severity zone according to the California Department of Forestry and Fire Protection's fire hazard severity zone map for Stanislaus County. (California Department of Forestry and Fire Protection 2007)

2.1 Human Environment

2.1.1 Existing and Future Land Use

Affected Environment

The following section is based on the Community Impact Assessment completed in August 2020, which can be found in Volume 3.

Stanislaus County Existing Land Use Patterns

Land uses within the proposed project area are identified in the Stanislaus County General Plan. The proposed project area is in the western central portion of Stanislaus County and is about 2 miles west of the city of Modesto. Stanislaus County is the 30th largest county in size in California. Modesto is the most developed city in Stanislaus County and is also the closest in proximity to the project area. The existing land use of the Community Impact Assessment study area is primarily agriculture, with some residential and commercial areas along the eastern portion. The future land use of the area is agricultural.

The major industries of Stanislaus County are related to education, health care, social assistance, retail trade, and manufacturing. Additionally, Stanislaus County is the fifth largest agricultural producing county in the nation. Agriculture being one of the largest employers in California, generates a variety of related business activities in Stanislaus County, such as retail, food processing, marketing, and transportation services. Agribusinesses make up the majority of businesses in the project area. Due to the project area being in an isolated rural area, most businesses are dependent on access to State Route 132. Some of the farms and ranches have their land currently planted in almonds and other orchards, and some are replanting or are leaving their land as open space for grazing.

Characteristics such as the climate, the flat land, the availability of water, and fertile soils contribute to the success of agriculture in Stanislaus County. The Stanislaus County General Plan includes objectives to support the economic development of agriculture by enhancing marketing and promotion through the improvement of local agricultural infrastructure for local industries such as manufacturers, suppliers, distributors, and retailers.

Agriculture

Stanislaus County was one of three counties in the San Joaquin Valley that saw net increases in its irrigated farmland totals during a 2015 update of the California Department of Conservation Farmland Mapping and Monitoring Program’s 2015 California Farmland Conversion Report. The land returned to irrigated agricultural production use was formerly dry pastures, natural patches of vegetation, or idled land. A significant amount of the land converted for agricultural use was determined to be Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. This is further discussed in Section 2.1.6 Farmland.

Conservation Easements

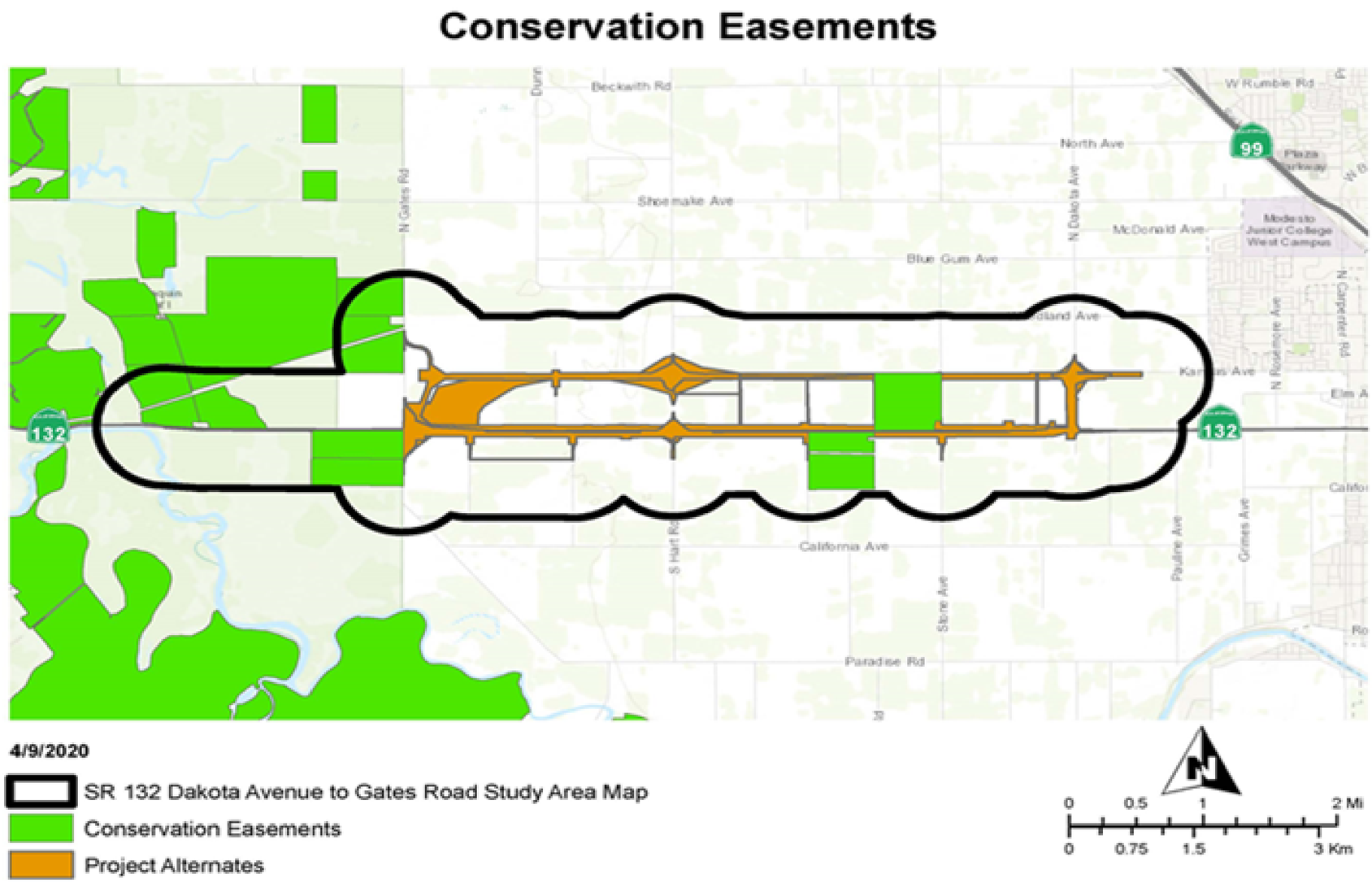
The Stanislaus County General Plan did not include plans for significant urban development within or near the project area. The study area does contain several conservation easements, as demonstrated in Figure 2-1 from the Caltrans Division of Environmental Geographic Information System Library. The National Conservation Easement Database defines a conservation easement as a voluntary, legal agreement that permanently limits uses of the land to protect its conservation values. The San Joaquin River National Wildlife Refuge conservation easement parcels are bordered to the east by Gates Road and are bisected by existing State Route 132 (Maze Boulevard). They reside along the western boundary of the project limits and are outside of the highway right of way. Two additional agricultural easements held by the California Farmland Trust occur within the project limits and will be impacted by the project. The Menghetti Farm is an agricultural conservation easement that was recorded on 2009 in Stanislaus County. It is located on the north side of Maze Boulevard, at the northwest corner of Maze Boulevard. and Stone Avenue. The Ulm Farm is an agricultural conservation easement that was recorded on 2011 in Stanislaus County. It is located on the south side of Maze Boulevard, at the southeast corner of Maze Boulevard and Texas Road.

The project study area along State Route 132 (Maze Boulevard) runs along several conservation easements within the San Joaquin River National Wildlife Refuge. Figure 2-1 shows easements within the refuge that are included in the Community Impact Assessment study area. The San Joaquin River National Wildlife Refuge created a Comprehensive Conservation Plan to specify management's direction for the refuge for the next 15 years. The Comprehensive Conservation Plan includes descriptions of habitats, management actions, and partnership opportunities as well as descriptions of conservation easements within the San Joaquin River National Wildlife Refuge. Easement lands within the refuge can be privately owned lands, where the owner willingly sells restricted land use rights to the U.S Fish and Wildlife Service. The proposed project would not impact the easements within the refuge because project improvements within the limits of the refuge would be confined to the state right-of-way west of Gates Road. The San Joaquin River National Wildlife Refuge does not extend east of Gates Road, and therefore will not be impacted by project alternatives proposed on new highway right of way east of Gates Road.

Development Trends

The proposed project would involve the construction of new alignments on land where no road currently exists. Due to the project area being zoned for agriculture, which is highly valued by both Stanislaus County and the city of Modesto, no urban development is expected within the study area limits. The highway corridors proposed for the project alternatives have been established under past and current freeway agreements and route adoptions as described in Section 1.2.3.

Figure 2-1 Conservation Easements in the Community Impact Assessment Study Area



Environmental Consequences

Land use impacts from construction and operation of all Build Alternatives are relatively similar. Existing land use within the project area for all alternatives consists primarily of farmland and contains limited residential and commercial developments that are located along and north of existing State Route 132. The project area for all alternatives within the unincorporated county land mainly consists of farmland and open spaces.

Acquisition of partial and full agricultural parcels along the project corridor is expected for road widening and construction of the new roadway. Between 282 and 446 acres of farmland is anticipated to be acquired to accommodate the new roadway. Additional acquisition of other properties, including residential and commercial properties, is also expected along the proposed corridor for all build alternatives and further explained in Section 2.1.5, Relocations and Real Property Acquisitions, of this document.

Build Alternatives 1 and 2

Build Alternatives 1 and 2 run alongside Kansas Avenue as shown in Figure 1-5. The proposed Build Alternatives would involve the construction of a four-lane divided expressway/freeway on a new alignment north of existing State Route 132 (Maze Boulevard). Portions of local roads would be realigned, and/or intersections would be improved to accommodate the new alignment. The Menghetti Farm conservation easement parcels total about 156 acres. The Ulm Farm conservation easement parcels total about 151 acres. Alternative 1 and 2 will only impact the Menghetti conservation easement and will avoid the Ulm property. Build Alternatives 1 and 2 would permanently impact about 13 percent (20.33 acres) of the property. Tempary impacts in the form of temporary construction easements needed for construction would total 2.61 acres. Table 2.1 below displays the estimated impacts for each Build Alternative.

Build Alternatives 3 and 4

Build Alternatives 3 and 4 would involve the construction of a four-lane controlled access expressway along the existing State Route 132 (Maze Boulevard) alignment. Build Alternative 3 would be shifted to the north of existing State Route 132 (Maze Boulevard), while Build Alternative 4 would be shifted to the south of existing State Route 132 (Maze Boulevard). Build Alternatives 3 and 4 would convert existing State Route 132 (Maze Boulevard) to a county frontage road. The Menghetti Farm conservation easement parcel is about 156 acres, and the Ulm Farms, Inc. conservation easement parcel is about 151 acres. Build Alternative 3 would permanently impact about 11 percent (16.63 acres) of the Menghetti Farm parcel, avoiding the Ulm property. Temporary impacts in the form of temporary construction easements would total 1.96 acres for Alternative 3. Build Alternative 4 would impact about 10 percent (14.91 acres) of the Ulm Farms, Inc. conservation easement avoiding the Menghetti parcel. Temporary impacts in the form of temporary construction easements would total 0.31 acres for Alternative 4. Table 2.1 below displays the

estimated impacts for each Build Alternative on these parcels. Impacts to the agricultural conservation easements will be mitigated in kind at a 1:1 ratio with the establishment of replacement conservation easements within Stanislaus County.

Table 2.1 Conservation Easement Impacts for Build Alternatives

Amount (Acres)	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Permanent Impacts	20.33	20.33	16.63	14.91
Temporary Impacts	2.61	2.61	1.96	0.31

All Build Alternatives would result in the conversion of land designated for agricultural land use and portions of two agricultural conservation easements to public highway right of way. Conservation of farmland for the proposed alternatives ranges from 282 acres to approximately 446 acres for the build alternatives. Additional details related to the quality and type of farmland impacted by the project are presented in Section 2.1.3 of this document.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not include any roadway improvements; therefore, the proposed project benefits of traffic alleviation and enhancement of the local circulation network would not occur. The No-Build (No-Action) Alternative would not fulfill the project's purpose or need.

Avoidance, Minimization, and/or Mitigation Measures

The project has been designed to be consistent with state, regional and local plans and programs to the extent feasible. During final design, effort would be made to further avoid, minimize and/or mitigate construction and operational impacts to existing and planned land uses.

The project would result in adverse impacts to agricultural land uses and two agricultural conservation easement properties. The following measures would be adopted to lessen the effect of impacts to agricultural land uses.

- Conversion of prime and unique farmland to non-farmland uses will be mitigated by preserving an equal amount of agricultural land within the County. This would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural land within Stanislaus County. This will be negotiated during the Design phase of the project.
- Impacts to agricultural conservation easement properties will be mitigated by preserving an equal amount of agricultural land within the County. Similar to prime and unique farmland mitigation, this would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land

trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural conservation easement land within the project limits. This will be negotiated during the Design phase of the project.

- Where parcels are bisected by a segment of the proposed project, but enough usable land remains on either side of the highway to be cultivated, then access for livestock, machinery, and/or drainage shall be built where reasonable and feasible to provide access to both portions of the property so that the land is still viable for farming operations.
- During the project's final design phase, Caltrans would coordinate with property owners and agricultural operators to incorporate design features to maintain access and operation.
- The contractor would reconstruct irrigation ditches and install irrigation pipelines damaged during construction.
- The contractor would reimburse any damage from construction-related activities that result in the loss of crops.

2.1.2 Consistency with State, Regional and Local Plans and Programs

Affected Environment

The following section is based on the Community Impact Assessment completed in August 2020, which can be found in Volume 3.

The proposed project study area is within Stanislaus County in unincorporated land near the City of Modesto. According to Modesto's General Plan, the city's boundaries end at the cross section of Morse Road and Kansas Avenue for Build Alternatives 1 and 2 and the cross section of Carpenter Road and State Route 132 for Build Alternatives 3 and 4. The project limits are outside of the City of Modesto's General Plan boundary. Therefore, a discussion of the project area is not included within the city's general plan.

State Route 132 Transportation Concept Report

The Transportation Concept Report is a system planning document that includes an analysis of the Ultimate Transportation Corridor and establishes a 20-year planning concept that is consistent with Caltrans' goals as outlined in the District System Management Plan. The Ultimate Transportation Corridor is the ultimate facility envisioned beyond the 20-year planning horizon. The Ultimate Transportation Corridor is identified, so adequate right-of-way can be preserved to accommodate future widening. The Ultimate Transportation Corridor designates the proposed project as a roadway segment that would be converted to a four-lane expressway (between Interstate 5 to State Route 99).

Stanislaus Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy and Regional Transportation Improvement Program

The Regional Transportation Improvement Program outlines the Stanislaus Council of Governments' recommended transportation projects eligible for funding under the Regional Transportation Improvement Program. Stanislaus Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy was approved in August 2018. The purpose of the Regional Transportation Plan is to plan out enhancements to infrastructure, while the Sustainable Communities Strategy focuses on how and where communities will potentially grow. The Regional Transportation Plan/Sustainable Communities Strategy is intended to support California's broader climate goals by encouraging coordinated regional transportation and land use planning that reduces greenhouse gas emissions from passenger vehicle use. The proposed project is programmed into the Stanislaus Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy within the Regional Transportation Improvement Program. The proposed project is under the action plan as a Tier 1 transportation project consistent with financial revenue forecasts through 2042. The goals, objectives, and performance indicators for the 2018 Regional Transportation Plan/Sustainable Communities Strategy relevant to the proposed project are as follows:

- **Mobility:** Improve the ability of people and goods to move between desired locations and provide a variety of modal and mobility options.
- **Social Equity:** Promote fair access to opportunities by ensuring all populations share in the benefits of transportation improvements and are provided a range of transportation and housing.
- **Economic and Community Vitality:** Facilitate economic development and opportunities through infrastructure and investments that support goods movement within and through the region, including but not limited to Stanislaus County's strategic freight corridors.
- **Environmental Quality:** Support infrastructure investments that facilitate vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.
- **Health and Safety:** Operate and maintain the transportation system to ensure public safety and security, improve the health of residents by improving air quality, and provide more transportation options.
- **System Preservation:** Maintain the transportation system in the state of good repair and protect the region's transportation investments by maximizing the use of existing facilities.
- **Reliability and Congestion:** Maintain or improve the reliability of the transportation network and maintain or reduce congestion.

Stanislaus County General Plan

The Stanislaus County General Plan describes the planned expressway improvement to State Route 132. Chapter 2 Circulation Element notes that Caltrans has prepared a project study report for the construction of an expressway west of State Route 99 to Interstate 580. An online map from the Stanislaus County website is also included describing road circulation, road closures, and detours. Build Alternatives 1 and 2 along the Kansas Avenue alignment are described as an interstate/expressway while Build Alternatives 3 and 4 along Maze Boulevard are described as a principal arterial.

Environmental Consequences

Build Alternatives

All four proposed Build Alternatives would be consistent with the local and regional planning goals and policies identified above. The proposed project supports Stanislaus County's goals and plans for land use in the project area. Growth-related impacts associated with the proposed project are not expected, which would be consistent with state, regional, and local plans. Therefore, the Build Alternatives would not have adverse impacts related to state, regional, or local plans and programs.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would be inconsistent with the Stanislaus Council of Governments Regional Transportation Plans and the Federal Transportation Improvement Program by not completing the planned roadway improvements to State Route 132.

Avoidance, Minimization, and/or Mitigation Measures

No temporary impacts to general plans and policies are anticipated as a result of the project. The project has been designed to be consistent with state, regional and local plans and programs to the extent feasible. During final design, effort would be made to further avoid, minimize and/or mitigate construction and operational impacts to existing and planned land uses.

No other land use impacts would occur as a result of the project; therefore, no additional mitigation measures are required.

2.1.3 Farmland

Regulatory Setting

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

Farmland Protection Policy Act, farmland includes Prime Farmland, Unique Farmland, and Land of Statewide or Local Importance.

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

Affected Environment

The following section is based on the Community Impact Assessment completed in August 2020, which can be found in Volume 3. Accordingly, coordination with the Natural Resources Conservation Service was conducted throughout the planning process for the project.

The farmland in the project area is composed mostly of orchards and cattle farms, with the main orchard crops being almonds, forage (hay/haylage), corn, and walnuts. Because the project area is in an agricultural area just outside of the city of Modesto, it was important to identify the types of farmland in the area. To identify the extent and location of important farmlands, the Natural Resources Conservation Service regulates protected farmlands under the Farmland Protection Policy Act, categorizing farmlands such as Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance. The project area is primarily composed of Prime and Unique Farmland.

Table 2.2 shows the total acreage of agricultural lands in Stanislaus County. Stanislaus County has over 370,000 acres of Prime and Unique Farmland, and the proposed project area primarily consists of Prime and Unique Farmland. Descriptions of farmland types can be found in the Community Impact Assessment.

Table 2.2 Stanislaus County Total Acreage of Agriculture

Land Use Category	Total Acreage Inventoried
Prime Farmland	250,420
Farmland of Statewide Importance	33,042
Unique Farmland	121,930
Farmland of Local Importance	23,058
Important Farmland Total	428,450

Source: Community Impact Assessment (August 2020).

Information in Figure 2-2 was generated using the U.S. Department of Agriculture's web soil survey tool, which demonstrates the soil characteristics within the project study area. The survey tool uses the chemical composition of the soil to distinguish between the types of farmland in the area, provides

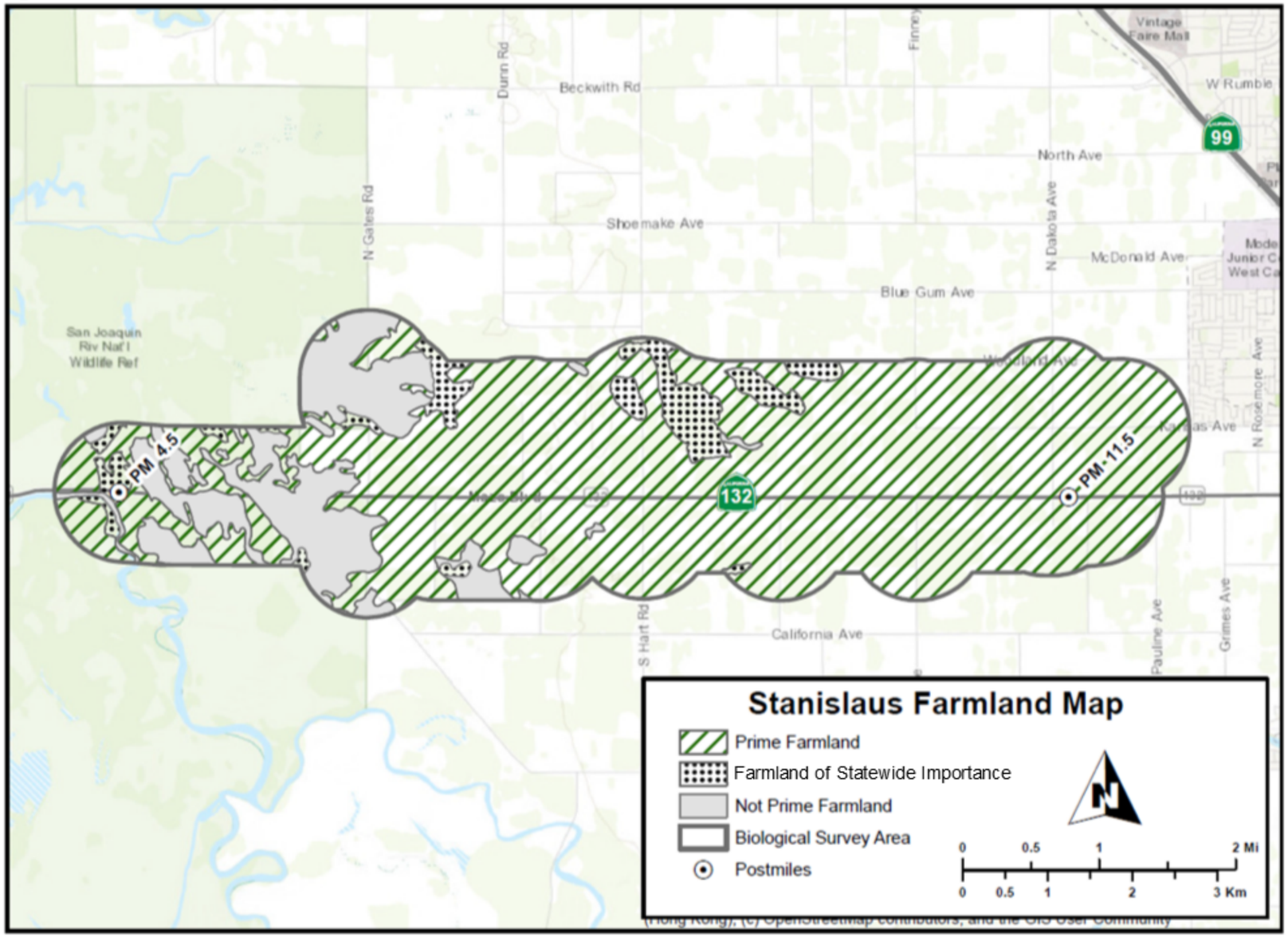
information about soil, and shows how it affects various uses for agriculture. Within the project area, the soil characteristics of the farmland are of high quality, making the area ideal for agriculture and food production.

Figure 2-2 shows the classification of farmland in the project area. Areas in crosshatching areas are considered “Prime Farmland” and are the main classification of farmland within the study area. The smaller black dotted areas are “Farmland of Statewide Importance,” and the scatter solid gray color areas are classified as “Not Prime Farmland.”

Williamson Act

Williamson Act contracts provide landowners with incentives to keep land in agriculture and as open spaces. The contract is voluntary and lasts a minimum of 10 years, where the owner agrees not to convert their land to nonagricultural uses. The three principal objectives of the Williamson Act are to protect agricultural resources, preserve open space land, and promote efficient urban growth patterns. In total, the footprint of Build Alternative 1 includes 29 Williamson Act parcels, Build Alternative 2 has 27 parcels, Build Alternative 3 has 31 parcels, and Build Alternative 4 has 23 parcels.

Figure 2-2 Stanislaus County Farmland Classification



Environmental Consequences

Implementation of the proposed project alternatives would result in the conversion of Prime and Unique Farmland, Farmland of Statewide and Local Importance, conservation easements, and parcels enrolled in the Williamson Act Program.

Coordination was conducted with the Natural Resources Conservation Service, an agency associated with the U.S. Department of Agriculture. The Natural Resources Conservation Service's Farmland Conversion Impact Rating form (NRCS-CPA-106) was used for determining farmland conversion impact ratings. On May 5, 2020, the Farmland Conversion Impact Rating form was submitted to the U.S. Department of Agriculture Modesto Service Center. The form calculates the relative impacts of each Build Alternative on land zoned for agriculture. The site assessment evaluation is based on criteria such as the percentage of sites being farmed, protection provided by state and local governments, and the availability of agricultural support services nearby. Site assessment scores are used to estimate the value of the impacted farmland and can add up to a maximum of 260 points. A score of 160 points is used as the minimum impact rating value utilized by the Natural Resources Conservation Service and others to evaluate and consider the overall impacts to farmland as a result of each proposed alternative. Scores higher than 160 require the project proponents to seek out alternatives to avoid and/or minimize farmland impact and if not avoidable, require mitigation to be considered for the project impacts. Because there is a potential for an adverse impact for scores higher than 160, mitigation should be considered. As shown in Table 2.3 the impact rating scores for the proposed alternatives are as follows: Alternative 1 rates at 172, Alternative 2 rates at 172, Alternative 3 rates at 170 and Alternative 4 rates at 175. A copy of the Farmland Conversion Impact Rating form can be viewed in Volume 2, Appendix F, and a summary of the impact scores are in Table 2.3.

Given the predominance of agriculture uses in Stanislaus County, it would be difficult to avoid impacting agricultural lands when implementing a transportation project of this scale. Table 2.3 lists farmland conversion acreage within the proposed project footprint for the four Build Alternatives.

Table 2.3 Farmland Conversion by Build Alternatives

Data Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Total Land Converted (Acres)	299.82	446.21	305.64	282
Prime and Unique Farmland (Acres)	222	371	237	234
Farmland of Statewide and Local Importance (Acres)	12	22	3	0
Percent of Farmland in Stanislaus County to be Converted	0.0006	0.0009	0.0006	0.0006
Percent of Farmland in California with Same or Higher Relative Value	28	28	28	27
Farmland Conversion Impact Rating Score	172	172	170	175

Source: Community Impact Assessment (August 2020) and the Natural Resources Conservation Service (May 2020).

According to Table 2.3 above, all four of the proposed Build Alternatives have a Farmland Conversion Impact Rating greater than 160, and all would impact Prime and Unique Farmland and Williamson Act land. Project alternatives that garner a Farmland Conversion Impact Rating greater than 160 require that project farmland impacts be avoided, minimized, and/or mitigated were appropriate. Table 2.4 shows the estimated Williamson Act impacts by Build Alternative for the study area.

Build Alternative 1

Build Alternative 1 has the least amount of Prime and Unique Farmland impacts, with 222 acres, and has the second-highest amount of impacts to Farmland of Statewide and Local Importance, with 12 acres. Build Alternative 1 has the second highest number of parcels enrolled in the Williamson Act, with 29 out of 32.

Build Alternative 2

Build Alternative 2 has the largest amount of total land converted of all the Build Alternatives, including the most impacts to Prime and Unique Farmland and Statewide and Local Importance Farmland, with 371 acres and 22 acres, respectively. This is partially due to the greater amount of right-of-way acquisition expected for Build Alternative 2. Build Alternative 2 has the second-lowest number of parcels enrolled in Williamson Act contracts, with 27 out of 33 parcels and would require the most acquisition of Williamson Act land with an estimated total of 154 acres.

Build Alternative 3

Build Alternative 3 has the second-highest amount of Prime and Unique Farmland impacts, with 237 acres, and the second-lowest amount of Farmland of Statewide and Local Importance impacts, with 3 acres. Build Alternative 3 has the highest number of Williamson Act parcels in the study area, with 31 out of 52. Build Alternative 3 may have the highest number of Williamson Act parcels by alternative, and it is also expected to impact the highest number of parcels impacted by right of way needs, with about 20 more parcels affected than the other three Build Alternatives.

Build Alternative 4

The impacts for Build Alternative 4 are very similar to Build Alternative 3; however, Build Alternative 4 has the most points on the Farmland Conversion Impact Rating, with 175 points. Alternative 4 will impact 234 acres of Prime and Unique Farmland. Build Alternative 4 is the only alternative that would not have any impacts on Farmland of Statewide and Local Importance. Build Alternative 4 would convert the least amount of total land out of all the Build Alternatives.

Table 2.4 Impacts to Williamson Act Farmland by Build Alternatives

Data Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Number of Williamson Act Parcels	29	27	31	23
Amount of Williamson Act Land Within Parcels (Acres)	1,149.21	1,089.15	1,150.80	870.85
Permanent Impacts to Williamson Act Land (Acres)	97.11	153.62	136.12	144.74
Temporary Impacts to Williamson Act Land (Acres)	8.67	7.40	9.59	8.10
Permanent Impacts to Williamson Act Land (percent)	74.12	49.91	71.86	76.86
Temporary Impacts to Williamson Act Land (percent)	87.16	81.68	78.09	82.23

Source: Community Impact Assessment (August 2020).

The percentages in Table 2.4 represent the amount of Williamson Act contract land that is within the expected right-of-way to be acquired under each Build Alternative. The percentages were calculated using the estimated total right-of-way acquisition and the estimated total Williamson Act land acquisition. The information in Table 2.4 was acquired with coordination from Caltrans Design and Stanislaus County Assessor's office. Identification of specific parcels under a Williamson Act contract was obtained from the Stanislaus County Assessor's page, a publicly available resource. Stanislaus County staff members verified the information in September 2019 and April 2020. Additionally, Stanislaus County staff members were able to verify that none of the Williamson Act contracts within the study area have filed a Notice of Non-Renewal of their contracts. This could demonstrate the community's commitment to agriculture in

the area because property owners looking to move away from farming would apply to terminate the Williamson Act contract with Stanislaus County.

As demonstrated in the tables and figures discussed in this section, the proposed project's impacts to farmlands would be unavoidable because this region of Stanislaus County has an abundance of Prime Farmland and Unique Farmland, Farmland of Statewide and Local Importance, and Williamson Act contract land. Therefore, all four Build Alternatives would result in a substantial impact to farmland and agricultural resources.

Avoidance, Minimization, and/or Mitigation Measures

The project would result in adverse impacts to agricultural resources. The following measures would be adopted to lessen the effect of impacts to farmland.

FARM 1: Conversion of prime and unique farmland to non-farmland uses will be mitigated by preserving an equal amount of agricultural land within the County. This would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural land within Stanislaus County. This will be negotiated during the Design phase of the project.

FARM 2: Where parcels are bisected by a segment of the proposed project, but enough usable land remains on either side of the highway to be cultivated, then access for livestock, machinery, and/or drainage shall be built where reasonable and feasible to provide access to both portions of the property so that the land is still viable for farming operations.

FARM 3: During the project's final design phase, Caltrans would coordinate with property owners and agricultural operators to incorporate design features to maintain access and operation.

FARM 4: The contractor would reconstruct irrigation ditches and install irrigation pipelines damaged during construction.

FARM 5: The contractor would reimburse any damage from construction-related activities that result in the loss of crops.

2.1.4 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 for all Americans 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 U.S. Code 109[h]) directs that final decisions on projects are to be made in the best overall

public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act (CEQA), an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since 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

The following section is based on the Community Impact Assessment completed in August 2020, which can be found in Volume 3. The affected environment of a community is largely based on boundaries, subdivision, demographics (population, housing, income, and economics), and community features, all of which are described further below.

Regional Population Characteristics

The County of Stanislaus has a high population density due to its urban character and a high percentage of developed land. Within the project limits, land use is largely farmland. The following discussion of local and regional population characteristics is derived from data received from the 2013-2017 American Community Survey 5-year estimates. The census data uses terms such as race, ethnicity, and minority groups to illustrate geographic trends. Stanislaus County has an estimated population of 535,684 people. Table 2.5 presents census information on the total population, race, and ethnic characteristics of the study area in comparison to Stanislaus County. Table 2.5 shows that there is a higher percentage of white residents in the study area than in Stanislaus County. About 35.8 percent of Stanislaus County's population belongs to a minority group in the project area, and of this percentage, the largest minority group is Hispanic or Latino. As the data indicate, the population residing in the study area is not predominately a minority population.

Table 2.5, Area Population, Race, and Ethnicity Characteristics, displays information adapted from the 2013-2017 American Community Survey 5-year estimates.

Table 2.5 Area Population, Race, and Ethnicity Characteristics

Demographic	Study Area	Stanislaus County
Total Individuals	4,941	535,684
Not Hispanic or Latino	72.4 percent	55.0 percent
White	64.2 percent	43.4 percent
Black or African American	0.3 percent	2.5 percent
American Indian and Alaska Native	0 percent	0.4 percent
Asian	3.5 percent	5.4 percent
Native Hawaiian or Other Pacific Islander	0 percent	0.6 percent
Some other race	0 percent	0.2 percent
Two or more races	4.5 percent	2.6 percent
Hispanic or Latino	27.6 percent	45.0 percent
Total non-white (Includes Hispanic and Latino)	35.8 percent	56.6 percent

Source: Community Impact Assessment (August 2020).

Although Stanislaus County is not one of the fastest-growing regions in California, growth in Stanislaus County is expected to be at a rate of about 6,634 people per year. In 2018, Stanislaus County experienced a 0.35 percent increase in population from 2017 and a median household income increase of 1.36 percent. The population in unincorporated Stanislaus County makes up less than 5 percent of the population in the county and is expected to have about a 1 percent annual growth rate by 2040. The proximity of Stanislaus County to the San Francisco Bay Area (and the jobs there) is the driving force for the increase in population. Of the current estimated population, 13 percent of residents of Stanislaus County have a disability.

The average age of people who live in the study area is 41, which is higher than Stanislaus County's average age of 34. In the study area, the largest group is people aged 0 to 20, followed by people between the ages of 50 to 64. The elderly age is 65 years old and above and makes up about 14 percent of the population in the study area. The percentage of elderly in Stanislaus County is 12 percent. Table 2.6 shows the population by age.

Table 2.6 Population by Age

Location	20 Years Old and Younger	21 to 34 Years Old	35 to 49 Years Old	50 to 64 Years Old	65 Years Old and Older
Stanislaus County	168,845	106,837	100,608	93,550	65,844
City of Modesto	101,840	67,581	60,133	56,289	39,435
Study Area	1,351	876	868	1,150	696

Source: Community Impact Assessment (August 2020).

Neighborhoods/Community

The study area is surrounded by agriculture-related land use. A few homes are scattered throughout. There are no public parks, public meeting areas, community centers, or activity centers within the subdivision. The commercial properties are primarily related to agriculture, and there are no banks or grocery stores. Based on a neighborhood survey that Caltrans conducted, most of the residents in the area have been living in the project area for more than 26 years. Although no community events occur within the study area, residents who responded to the survey expressed similar views on the value of farmland, indicating the project area consists of a farmland community. During a Caltrans windshield survey, a mobile home park was identified within the limits of the project study area directly south of Maze Boulevard. The mobile home park consists of 14 homes. Demographic information for the community living in the mobile home park was not available when the Community Impact Assessment was conducted.. The mobile home park is being considered an environmental justice community based on previous Caltrans experiences with such property acquisitions in San Joaquin and Stanislaus County and therefore is the only such defined community in the project area. The mobile home park is discussed further in Section 2.1.6 Environmental Justice.

Housing

Housing within the study area appears to consist of custom, landscaped homes, the majority of which rely on water wells as the main water resource. Overall, in Stanislaus County, there are about 181,998 housing units, with 144,039 single-family homes, 30,082 multi-family homes, and 7,877 mobile homes. About 3.9 percent of the housing units are vacant in Stanislaus County. All homes listed for sale are east of Dakota Avenue, more than 0.5 mile from the project limits.

The current average home value in the study area is $326,732, which is much higher than the median cost of a house ($244,100) in Stanislaus County. The higher home value may be attributed to the size of lots. Stanislaus County consists of about 172,682 households. The average household size consists of about 3.09 people and is expected to decrease because most available and affordable homes do not accommodate large families in Stanislaus County. Currently, there aren’t any housing developments proposed in the project area because land use regulations aim to keep urban development within urban unincorporated land.

Environmental Consequences

Regional Population Characteristics

The projected population growth in Stanislaus County indicates noticeable growth and development and is predicted to continue trending upward. There is no data specific to the project area to indicate if there would be an impact on elderly or disabled populations. Furthermore, population density is low in the project area, and although there would be relocation and displacement of some parcels and residents, the Build Alternatives would not impact the population characteristics in the project area.

Neighborhoods/Community

The mobile home park is the only community that is identified within the project area. Build Alternatives 1, 2, and 3 are not expected to have a disproportionate and adverse impact on the environmental justice community within the mobile home park. People living in the mobile home park would not experience any change in the character or cohesion of their community. Build Alternative 4 would have a disproportionate and adverse impact on the environmental justice community because it would require all of the residents of the mobile home park to be relocated, which would dismantle the existing community. More details about the environmental justice community can be found in Section 2.1.6 Environmental Justice.

Housing

The four Build Alternatives would not impact plans for housing developments in the project area because land use regulations aim to keep urban development within urban unincorporated land. Although an increase in population and housing units is expected in Stanislaus County, it is not likely that the proposed project would have an impact on housing units due to the agricultural zoning of the project area.

Houses close to the project area are expected to be impacted. All four Build Alternatives will require the acquisition of residential properties. Impacts that could affect property values positively include improvements to local congestion. Impacts that could diminish the property values would be the increase in noise and impacts to aesthetics. Visual impacts are minimized with Caltrans standardized measures. Visual impacts are discussed in greater detail in Section 2.1.9. Impacts to residential properties are discussed in greater detail in Section 2.1.5.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would leave the mobile home park in its existing condition; therefore, there would be no impacts on the community character or cohesion. Additionally, this alternative would not require any relocations.

Avoidance, Minimization, and/or Mitigation Measures

Regional Population Characteristics

The project is unlikely to influence the regional population characteristics. No avoidance, minimization, and mitigation measures are necessary.

Neighborhoods/Communities/Community Character

A transportation Management Plan will be implemented to provide minimization measures for temporary disruption to circulation during construction. Discussion of the Traffic Management Plan is included in Section 2.1.8. Implementation of this minimization measure would reduce construction-related access and circulation disruptions.

Impacts and mitigation details related to the mobile home park are summarized in Section 2.1.6, Environmental Justice.

Housing

Housing for persons who will be subject to relocation is discussed in Section 2.1.5, Relocations and Real Property Acquisitions. Caltrans shall comply with the Uniform Relocation Assistance Real Property Acquisition Policies Act of 1970, as amended in 1987. Caltrans shall provide relocation advisory assistance to any person, business, farm, or nonprofit organization relocated as a result of the projects acquisition of real property for public use.

Construction noise control would conform to the provision in Section 14-8.02, as outlined in the Noise Study Report. Visual impact measures would include those as specified within Section 2.1.9.

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

- All equipment will have sound-control devices no less effective than those provided on the original equipment. Each internal combustion engine used for any purpose on the job or related to the job will be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine should be operated on the job site without an appropriate muffler.
- Construction methods or equipment that will provide the lowest level of noise impact (for example, avoid impact pile driving near residences and consider alternative methods that are also suitable for the soil condition) should be used.
- Idling equipment will be turned off.
- Truck loading, unloading, and hauling operations will be restricted so that noise and vibration are kept to a minimum through residential neighborhoods to the greatest possible extent.

- In case of construction noise complaints by the public, the Resident Engineer will coordinate with the construction manager, and the specific noise-producing activity may be changed, altered, or suspended, if necessary.

NOI-1: Conform to Provision 14-8.02, which states, control and monitor noise resulting from work activities. Do not exceed 86 dBA Lmax at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.

VR 1 through **VR 18:** As specified within Section 2.1.8, Visual/Aesthetics.

2.1.5 Relocations and Real Property Acquisition

Regulatory Setting

Caltrans' Relocation Assistance Program is based on the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Volume 2 for a summary of the Relocation Assistance Program. All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Volume 2 for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

The following section is based on the Community Impact Assessment (August 2020) and the Draft Relocation Impact Report (March 2020), both of which can be found in Volume 3. The project study area is in an unincorporated portion of the city of Modesto and Stanislaus County and consists of scattered businesses and homes mixed among open land and farmland. Caltrans acquired 160 acres of right-of-way in 1958 in anticipation of this project along the alignments of Build Alternatives 1 and 2. The area within the proposed alignments of Alternatives 1 and 2 is more rural in comparison to Alternatives 3 and 4. However, there are several residential homes, both large and small, within the project footprint. A dairy is within the project area of Alternative 2 with three smaller residential homes used for employee housing. The area within the proposed alignments of Alternatives 3 and 4 contain rural homes, some which are owner-occupied, and others which are tenant-occupied and attached to a farming operation.

Environmental Consequences

Build Alternatives

All Build Alternatives would require property acquisitions. Table 2.7 lists the residential displacements and the residence types for each Build Alternative. Stanislaus County's housing stock would remain constant with the availability of single-family homes and manufactured homes for sale and rent. There would

also be partial acquisitions for each alternative. These numbers, which include both residential and business parcels, do not include owned parcels of the state of California, Stanislaus County, city of Modesto, or Modesto Irrigation District. Partial acquisitions result when only a portion of a property may be needed for the project, and that portion would not be enough to close access or encroach on the property's setback. Table 2.7 shows a direct comparison of each alternative's residential displacements, and Table 2.8 shows a direct comparison of each alternative's business displacements. More information about relocations can be found in the Draft Relocation Impact Report (March 2020).

Table 2.7 Residential Displacements by Build Alternatives

Residence Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Owner-occupied single-family homes	4	4	25	16
Tenant-occupied single-family homes	0	3	9	9
Tenant-occupied multi-family homes	0	0	0	1
Owner-occupied mobile homes	0	0	0	14
Tenant-occupied mobile homes	0	0	0	0
Total	4	7	34	40

Table 2.8 Business Displacements by Build Alternatives

Business Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Commercial	0	0	3	4
Industrial/Manufacturing	0	0	1	0
Nonprofit Organization	0	0	0	0
Agricultural/Farms	0	1	0	0
Total	0	1	4	4

There are numerous industrial replacements on the market regarding business relocations or acquisitions. Certain business sites may have a greater challenge finding adequate replacement sites because of the nature of their business; however, replacement resources would provide sufficient facilities for each business impacted by this project. Special services may be needed to assist businesses to relocate. Effective planning, organization, and assistance from an experienced relocation assistance agent during the move process would help to mitigate costly mistakes, help determine the appropriate relocation sites, and maximize the benefits available in Caltrans' Relocation Assistance Program.

There are project-specific factors that are expected to present challenges for those being displaced. By providing relocation planning services for some complex businesses, relocation impacts would be minimized where possible.

The Last Resort Housing guidelines were put in place at the federal and state levels to ensure that people who are displaced who are suffering hardship or unusual circumstances can successfully relocate from a public project. Replacement areas for the proposed project would be able to provide an adequate number of lower-income housing to accommodate the project's needs.

All Build Alternatives would require property acquisitions; however, impacts on land use vary. Table 2.9 lists the amount of acreage required for each proposed Build Alternative. Table 2.9 also lists acreage that is within a Caltrans right-of-way for each Build Alternative. Build Alternative 1 would require the least amount of additional right-of-way acquisitions, at 140.91 acres, while Build Alternative 2 would require the largest amount, at 316.88 acres. Additionally, the majority of the total land required for Build Alternative 1 is already within a Caltrans right-of-way.

Table 2.9 Proposed Project Acreage Required for Build Alternatives

Data Type (Acres)	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Number of Parcels Impacted	32	33	52	31
Estimated Right-of-Way Acquisitions	131.02	307.82	190.27	190.81
Temporary Right-of-Way Acquisitions	9.89	9.06	12.28	9.85
Right-of-Way Acquisitions Subtotal	140.91	316.88	202.55	200.66
Caltrans Property	158.91	129.33	103.09	81.34
Total Land Required	299.82	446.21	305.64	282

Source: Draft Relocation Impact Report (March 2020).

Build Alternative 1

Build Alternative 1, which is on a corridor north of existing State Route 132 (Maze Boulevard), could potentially result in the right-of-way acquisition and displacement of four single-family homes, the least of all Build Alternatives. Table 2.7 above shows the residential displacements for Build Alternative 1. Additionally, there would be 27 partial acquisitions for this Build Alternative.

Build Alternative 2

Build Alternative 2, which is on a corridor north of existing State Route 132 (Maze Boulevard), could potentially result in the right-of-way acquisition and displacement of seven single-family homes and one dairy. Full acquisition of the dairy property is assumed to be required under this alternative. Because of the rural nature of the surrounding area and depending on the current real estate market, a 50-mile radius for replacement dairies would be considered but is quite difficult to come across. In some cases, there are single-family homes on almond and/or walnut orchards that would be affected and need to be relocated, but the remainder of the parcel is large enough to where acquisition of the

property would not be required. In those cases, it is assumed the property owners would receive relocation benefits for their houses that would be affected, but they could keep farming on the remaining parcels after construction. Table 2.7 shows the residential displacements, and Table 2.8 shows the business displacements for Build Alternative 2. This Build Alternative would result in a total of 27 partial acquisitions.

Build Alternative 3

Although Build Alternative 3 would be along the existing State Route 132 (Maze Boulevard) alignment, it would be shifted to the north. Consequently, Alternative 3 would involve the displacement of everything near the north side of State Route 132. Build Alternative 3 would involve the displacement of 34 single-family homes, three commercial businesses, and one industrial/manufacturing business. Of the 34 single-family homes that would be affected by Build Alternative 3, 25 appear to be occupied by owners, while nine appear to be occupied by tenants. The three commercial businesses include a commercial office building (current use is unknown), a bar and grill saloon, and a Chevron gas station and convenience store. The industrial/manufacturing business, Fisher Nut Company, includes a truck weigh scale, multiple warehouses, and an operations office. Table 2.7 shows the residential displacements, and Table 2.8 shows the business displacements by business type for Build Alternative 3. Additionally, this Build Alternative would result in 37 partial acquisitions.

Build Alternative 4

Build Alternative 4 would be along existing State Route 132 (Maze Boulevard) but shifted to the south. Consequently, Build Alternative 4 would involve the displacement of everything near the south side of State Route 132 (Maze Boulevard). Build Alternative 4 would result in the displacement of 25 single-family homes, one duplex, 14 mobile homes, and four commercial businesses. Build Alternative 4 would have the biggest impact on residential displacements. Of the 25 single-family homes that Build Alternative 4 would affect, 16 appear to be owner-occupied, while nine appear to be tenant-occupied. The 14 mobile homes are all within a mobile home park. All mobile homes that the project could potentially impact have access to shopping and schools within a 20-mile radius. The same three commercial businesses that would be affected in Build Alternative 3 would also be affected under Build Alternative 4. Additionally, a warehouse, storage area, and a parking lot for the Fisher Nut Company would be affected under Build Alternative 4. Table 2.7 shows the residential displacements, and Table 2.8 shows the business displacements by business type for Build Alternative 4.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements and, therefore, would not result in any impacts caused by residential or business relocations or partial acquisitions.

Avoidance, Minimization, and/or Mitigation Measures

See Volume 2 for a summary of the Caltrans Relocation Assistance Program. Implementation of the following measures would minimize impacts caused by relocations and partial acquisitions:

RLC-1: For any person(s) whose real property interests would be impacted by the proposed project, the acquisition of those property interests would comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federally assisted programs or projects. It was created to provide for and ensure the fair and equitable treatment of all such persons.

Additionally, the Fifth Amendment of the U.S Constitution provides that private property may not be taken for public use without payment of "just compensation." All impacted owners would be provided with notification of the acquiring agency's intent to acquire an interest in their property, including a written offer letter of just compensation specifically describing those property interests. A right-of-way specialist would be assigned to each property owner to assist them with this process.

RLC-2: Relocation Benefits: Regarding relocations, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 provides for numerous benefits to relocated individuals to assist them both financially and with advisory services related to relocating their home or business operation (see Relocation Assistance Program in Volume 2).

2.1.6 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income* Populations, signed by President William J. Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low-income is defined based on the U.S. Department of Health and Human Services' poverty guidelines. For 2020, this was $39,300 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this project. Caltrans demonstrates its commitment to upholding the mandates of Title VI by its Title VI Policy Statement, signed by its director, which can be found in Volume 2, Appendix B.

Affected Environment

This section is based on the Community Impact Assessment, which was completed in August 2020, and the Draft Relocation Impact Report, which was revised in March 2020.

The environmental justice analysis was conducted using demographic data from the U.S. Census of 2010 (at the track level), American FactFinder, and general field observations of the community within the project study area. The demographics and data presented reflect the entire project area, which includes all Build Alternatives. The analysis involved the assessment of two protected categories of populations—minority and low-income—to determine whether they were present within the project study area and if there would be disproportionately high impacts to either group. The data indicated that neither populations were within the project study area. However, a windshield survey of the project study area resulted in the discovery of an active mobile home park. A description of the mobile home park can be found below.

The overall percentage of minorities in the project study area is 35.8 percent and 8.9 percent for low-income populations in the project area, both of which are lower in comparison to the city of Modesto and Stanislaus County. Table 2.10 shows the breakdown of minority populations in the project study area.

Table 2.10 Area Population, Race, and Ethnicity Characteristics

Demographic	Project Study Area	Modesto	Stanislaus County
Total Individuals	4,941	210,166	535,684
Not Hispanic or Latino	72.4 percent	62.1 percent	55.0 percent
White	64.2 percent	46.4 percent	43.4 percent
Black or African American	0.3 percent	3.7 percent	2.5 percent
American Indian and Alaska Native	0 percent	0.4 percent	0.4 percent
Asian	3.5 percent	7.5 percent	5.4 percent
Native Hawaiian and Other Pacific Islander	0 percent	0.9 percent	0.6 percent
Some other race	0 percent	0.2 percent	0.2 percent
Two or more races:	4.5 percent	2.9 percent	2.6 percent
Hispanic or Latino	27.6 percent	37.9 percent	45.0 percent
Total non-white (Includes Hispanic and Latino)	35.8 percent	53.6 percent	56.6 percent

Source: Community Impact Assessment (August 2020).

Table 2.10 above presents census information on population, race, and ethnicity characteristics in the project study area, the city of Modesto, and Stanislaus County. The majority of the residents in the project area that have been identified as Not Hispanic or Latino are white. White residents have the highest percentages for the project study area, the city of Modesto, and Stanislaus County, while about 35.8 percent of the population living in the project study area belong to minority groups.

Mobile Home Park

The environmental justice analysis included windshield field visits in the project study area, which resulted in the discovery of an active mobile home park within the alignments of Build Alternatives 3 and 4 off State Route 132 (Maze Boulevard). Currently, the mobile home park has in and out access to State Route 132 (Maze Boulevard). Initial observations of the mobile home park indicated it was a small collection of 14 mobile homes with a centralized building, possibly the leasing office. The mobile home park appeared to be active because there were residents within the complex and buildings in use. These observations indicated that additional research into the area would be required to determine if the mobile home park would be considered an environmental justice community.

To collect demographic data on the residents in the mobile home park, Caltrans made multiple attempts to contact the leasing office on the mobile home park property. However, Caltrans' attempts to establish communication were unsuccessful. For further information regarding Caltrans' attempts to make contact, refer to the Draft Relocation Impact Report and the Community Impact Assessment.

Based on previous property acquisitions and related values within San Joaquin and Stanislaus County, the mobile home park is being considered a lower-income population and, therefore, a protected population identified as an environmental justice community.

Environmental Consequences

All four Build Alternatives were evaluated in the environmental justice analysis to determine if there is potential for disproportionately high and adverse impacts to minority or low-income populations.

The Federal Highway Administration defines a disproportionate impact as one that is:

- Predominantly borne by a minority and/or low-income population, or
- Suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority/non-low-income population.

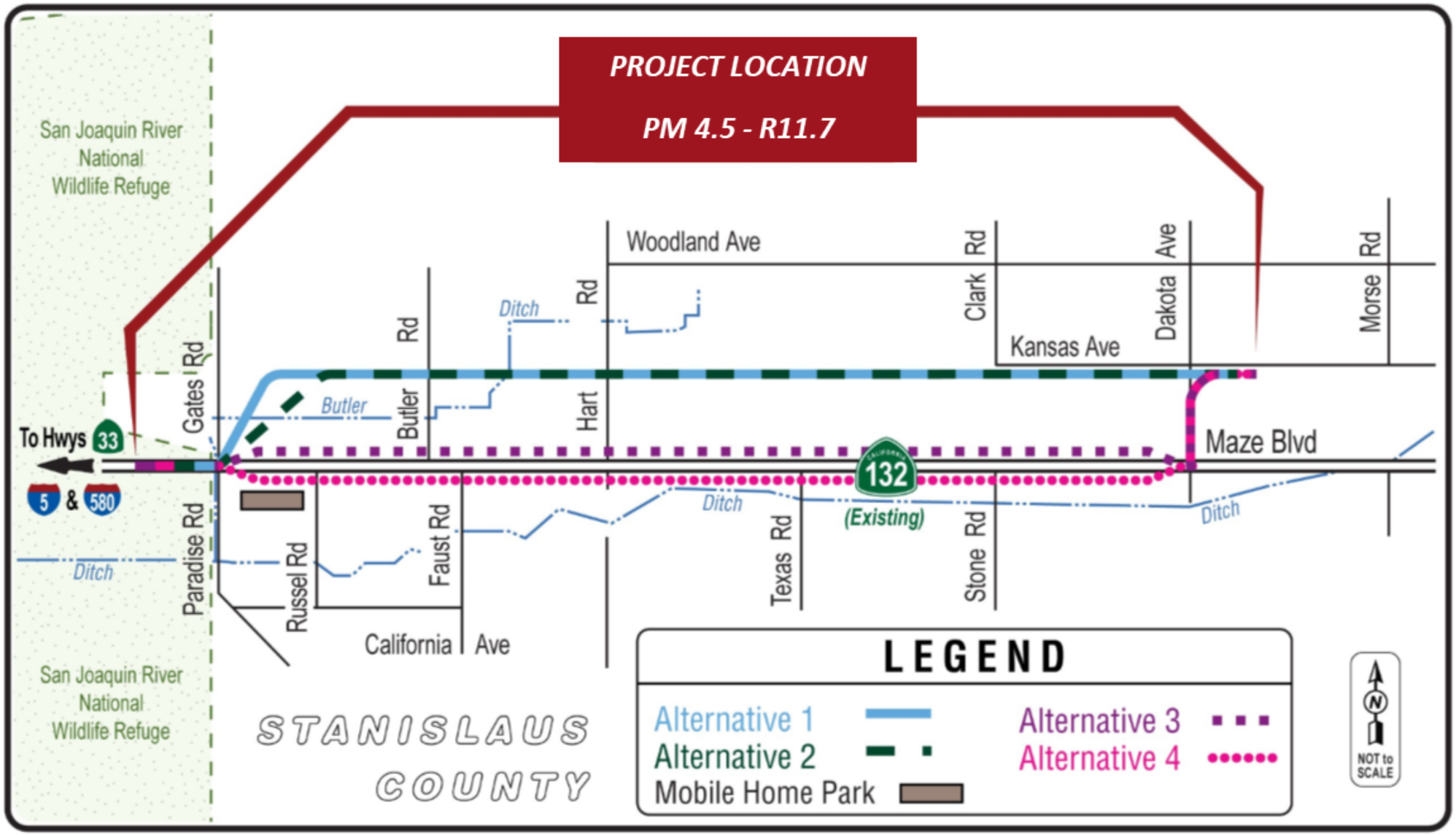
Build Alternatives

Figure 2-3 shows the location of the mobile home park in relation to the four Build Alternatives in the project area.

Impacts associated with Build Alternatives 1, 2, and 3 would not cause disproportionately high and adverse impacts to the identified environmental justice community (the mobile home park). Impacts under Build Alternatives 1, 2, and 3 are shared by all residents living in the project area and would include minor and temporary impacts to the mobile home park, resulting from noise,

visual, and dust during construction. Changes were made to Build Alternatives 2 and 3 to reduce right-of-way acquisitions that would impact the mobile home park. Once the environmental justice community was identified, the design of Build Alternative 2 was changed to include the adjustment of realigned Paradise Road/Maze Boulevard, to ensure that there would not be right-of-way impacts to the mobile home park properties. Build Alternative 3 was also changed to include a minor adjustment of the Maze Boulevard cul-de-sac to the west of the mobile home park, which resulted in avoiding the mobile home park entirely.

Figure 2-3 Location of Mobile Home Park Within the Project Limits



Build Alternative 4 would result in a permanent, full acquisition of the mobile home park, requiring the relocation of the residents. As a result, Build Alternative 4 would constitute a disproportionately high and adverse impact on the environmental justice community; adequate relocation of the properties is expected to be available within Stanislaus County.

No-Build (No-Action) Alternative

For the No-Build (No-Action) Alternative, traffic and congestion, especially during peak travel hours, would remain the same in the project study area and potentially worsen over time. This would hinder access to housing, businesses, community services, and facilities for the entire community as well as the low-income and minority populations within the study and surrounding areas. While no displacement of minority or low-income residents, businesses, or employees would take place with the No-Build (No-Action) Alternative, the community as a whole would continue to be impacted by the increased congestion and degradation of the existing State Route 132 (Maze Boulevard) area.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and/or mitigation measures would reduce impacts to the environmental justice community:

EJ-1: Visual: Adverse impacts would be reduced with the implementation of measures VR-1 through VR-18 where required by project feature, as described in Section 2.1.9 Visual/Aesthetics. After the implementation of avoidance, minimization, and/or mitigation measures, visual impacts would not result in disproportionate adverse impacts on the identified environmental justice community.

EJ-2: Relocations: Implementing measure RLC-1 in Section 2.1.5 Relocations and Real Property Acquisition would reduce disproportionate adverse impacts on the identified environmental justice community.

EJ-3: Construction: The implementation of a project Traffic Management Plan during construction would reduce disproportionate adverse impacts on minority and low-income populations. Coordination would be maintained with emergency service providers to minimize delays and ensure access to properties. Additionally, all other temporary increases in noise and equipment emissions would be reduced as described in Section 2.2.6 Noise, and Section 2.2.5 Air Quality.

2.1.7 Utilities and Emergency Services

Affected Environment

The following section is based on the Community Impact Assessment (August 2020), which can be found in Volume 3.

Utilities

Several utilities occur within the proposed project area, including underground gas lines, aboveground power lines, telephone lines, and underground fiberoptic communication cables. Major utility providers within the area include Modesto Irrigation District, Pacific Gas and Electric Company, American Telephone and Telegraph, MCI WorldCom, Sprint Corporation, and Qwest Corporation, as well as various cable television companies. Bertolotti Disposal provides solid waste and garbage disposal services. The Modesto Irrigation District's Butler Ditch is a source of irrigation water for the area. Due to the rural nature of the project area, most residents or landowners have their own private domestic wells or septic systems.

Emergency Services

The Modesto Fire Department currently provides fire protection, emergency medical services, hazmat services, and rescue services within the city of Modesto and unincorporated areas around Modesto, including within the project area. The Modesto Regional Fire Station 2 is the closest fire station, at about 5 miles southeast of the proposed project area. The station's typical response time to the project area is about eight minutes.

The Stanislaus County Sheriff's Department provides police services for the project area. The Operations Division has principal law enforcement jurisdiction in all unincorporated areas of Stanislaus County. The Sheriff provides law enforcement services to a population of over 200,000, covering an area of about 1,521 square miles. The closest Sheriff Station is about 8 miles southeast of the proposed project area at 250 Hackett Road, Modesto, California 95358.

The Modesto Area Office of the California Highway Patrol is responsible for the patrol of all freeways, roadways, and unincorporated areas within Stanislaus County. Its service area includes State Route 132, and the nearest station is about 8 miles from the project area at 4030 Kiernan Avenue Modesto, California 95356.

The following health care centers would serve the proposed project area: Doctors Medical Center at 1441 Florida Avenue, Modesto, California 95350; Sutter Health Memorial Medical Center at 1700 Coffee Road, Modesto, California 95355; and Stanislaus Surgical Hospital at 1421 Oakdale Road, Modesto, California 95355.

The centers are all within the City of Modesto and outside of the project area.

Environmental Consequences

Build Alternatives

Construction and acquisition of right-of-way for all Build Alternatives may require various utilities to be relocated; however, long-term disruptions to utilities are not expected. Utilities impacted by Build Alternatives would be abandoned in place,

protected in place, or relocated within the project right-of-way. Coordination with some utility owners has begun to determine where utilities would be relocated.

Emergency services in the project area recognize existing State Route 132 (Maze Boulevard) as an evacuation route that can be used for any emergency response, including hazardous waste and other emergency support. Build Alternatives would not affect emergency services or public facilities.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements and, therefore, would not impact utility services or emergency services.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project would require the implementation of a Traffic Management Plan that would identify necessary signage and the locations of potential temporary detours. This plan would help to ensure that local access to homes and businesses, as well as bus and emergency vehicle access, is available during construction of the proposed project. The plan would specify time frames for temporary detours if needed. The plan would also specify the process for notifying residents, businesses, emergency services, and the traveling public of the construction period and any required detours.

The four Build Alternatives would not result in adverse impacts on long-term emergency response times and utilities. Therefore, no further mitigation measures are required.

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 expected pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 Code of Federal Regulations 27) implementing Section 504 of the Rehabilitation Act. (29 U.S. Code 794) The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation

facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to Federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

The following section is based on the Final Traffic Operations Analysis Report completed in October 2019, and the Intersection Control Evaluation completed in December 2019, both of which can be found in Volume 3.

The proposed project area for the traffic analysis is within the western central portion of Stanislaus County, from Gates Road/Paradise Road to Dakota Avenue (post miles 4.5 to R11.7) 2 miles west of the city of Modesto. The traffic analysis was evaluated to determine peak hour traffic volumes, truck percentages, and peak hour factors of the existing facility. The traffic analysis area also includes local street intersections on both north and south of existing State Route 132 (Maze Boulevard) within the vicinity of the project limits. The traffic analysis evaluated existing and future conditions with and without the proposed project. The year 2018 was represented as the baseline. The future conditions under each of the four Build Alternatives and the No-Build (No-Action) Alternative were projected for the years 2026 (construction year) and 2046 (design year). The future conditions of the four Build Alternatives are detailed below in the Environmental Consequences section.

Existing and Future Year No-Build Traffic Conditions

Measures of Effectiveness for the project area reflect the overall operations on existing State Route 132 (Maze Boulevard) and the proposed alignments of the four Build Alternatives. The Measures of Effectiveness are defined below; total vehicle hours of delay, average speed, and vehicle miles traveled are the most informative because they relate directly to the traveler experience through the corridor. A comparison of each Measure of Effectiveness not only verifies current traffic conditions within the project area, but it allows for a more detailed evaluation of environmental consequences with and without the project. The terms used to determine and measure effectiveness are defined below:

- Vehicle hours of delay is the amount of delay incurred during the peak period because of congestion and demand exceeding the capacity of the freeway.
- Average speed is the average speed of vehicles accelerating, decelerating, and traveling through the road network.
- Vehicle miles traveled measures the amount of travel for all vehicles in a geographic region over 1 year; it is calculated by adding up all the miles driven by all the cars and trucks on all the roadways in a region.

Level of Service is a measure of traffic operating conditions, ranging from Level of Service A (indicating free-flow traffic conditions with little or no delay) to Level of Service F (representing oversaturated conditions where traffic flow exceeds

design capacity resulting in long queues and delays) as shown in Figure 1-3 (see Table 2.11 Level of Service of a Two-Lane Highway).

Table 2.11 Level of Service of a Two-Lane Highway

Level of Service	Percentage of Time-Spent-Following	Average Travel Speed (Miles Per Hour)
A	less than or equal to 35	greater than 55
B	greater than 35-50	greater than 50-55
C	greater than 50-65	greater than 45-50
D	greater than 65-80	greater than 40-45
E	greater than 80	less than or equal to 40

Source: Highway Capacity Manual 6th Edition. (Transportation Research Board, 2016)

As outlined in the Final Traffic Operations Analysis Report, traffic volume forecasts for the proposed project and existing State Route 132 (Maze Boulevard) were based on the 2018 Regional Transportation Plan Tri-County Model, which is the current travel demand model used to develop traffic volumes for all the scenarios.

The forecasts that were developed using the Transportation Control Measures for the proposed project are different than what was used for the forecasts in 2012 for the State Route 132 West Freeway/Expressway. The model used in 2012 was based on the 2011 Regional Transportation Plan, which had the latest land use projection and roadway improvement information available at the time; however, the information has been updated for the current 2018 Regional Transportation Plan. The updated model resulted in a 20 percent lower estimation of homes for the year 2046 forecast due to a difference in land use assumptions in the two Regional Transportation Plans. There was also a different set of roadway improvements, which resulted in additional differences in traffic forecasts along State Route 132.

Table 2.12 Measures of Effectiveness on Existing State Route 132 (Maze Boulevard) Morning and Evening Peak Hour (2018)

Measure of Effectiveness	Morning Peak Hour	Evening Peak Hour
Total Vehicle Hours of Delay	24.6	37
Vehicle Miles Traveled	8,217	10,510
Average Speed	46	44

Source: Traffic Operations Analysis Report, October 2019.

Table 2.12 shows the present Measures of Effectiveness on existing State Route 132 (Maze Boulevard). This analysis indicates significant delays and congestion during the morning and afternoon peak hours.

As the data in Table 2.13 shows, 121 total accidents with four fatalities were reported on State Route 132 (Maze Boulevard) between Dakota Avenue and Gates Road/Paradise Road during a 5-year study period. The project area has higher fatality and injury accident rates and overall accident rates than the

statewide average for similar facilities. The overall accident rate on State Route 132 (Maze Boulevard) is about 25 percent higher than the statewide average.

Table 2.13 Existing State Route 132 (Maze Boulevard) From Dakota Avenue to Gates Road/Paradise Road Accident Data

Category	State Route 132 (Maze Boulevard) Between Post Miles 5.5 and 11.5 (Number of Accidents)	State Average
Accident Rate—Fatality	0.030 (4)	0.015
Accident Rate—Fatal plus Injury	0.44 (58)	0.28
Accident Rate—Total	0.91 (121)	0.66

Source: Caltrans District 10 Traffic Accident Surveillance and Analysis System data between January 1, 2013, and December 31, 2017.

Table 2.14 shows the accident history on State Route 132 (Maze Boulevard) by type of collision; a total of 32 percent of accidents were rear-ended accidents, and 28 percent were broadsides. The rear-end accidents were due to speeding (84.6 percent), improper turns (5.1 percent), failure to yield (5.1 percent), following too close (2.6 percent), and other than the driver (2.6 percent). Out of the 39 rear-end collisions, only three occurred at an intersection.

Table 2.14 Accidents on State Route 132 (Maze Boulevard) by Type of Collision

Type of Collision	Number	Percent
Head-on	8	6.6 percent
Sideswipe	13	10.7 percent
Rear-End	39	32.2 percent
Broadside	34	28.1 percent
Hit Object	20	16.5 percent
Overturned	3	2.5 percent
Auto-Pedestrian	2	1.7 percent
Other	2	1.7 percent
Total	121	100 percent

Source: Caltrans District 10 Traffic Accident Surveillance and Analysis System data between January 1, 2013, and December 31, 2017.

According to the Modesto General Plan, in addition to Caltrans and Federal Highway Administration standards, the goal Level of Service rating for a highway/local roadway similar to existing State Route 132 (Maze Boulevard) is D.

A total of 20 intersections were evaluated for the project, including 12 along existing segments of State Route 132 (Maze Boulevard) from Gates Road/Paradise Road to Dakota Avenue. Table 2.15 shows the existing traffic conditions during the morning and evening peak hours for the 12 study intersections within the project limits.

Table 2.15 Existing Conditions Year 2018 Peak Hour Intersection Analysis

Intersection	Morning Peak Hour	Evening Peak Hour
Woodland Avenue and Clark Road	A	A
Woodland Avenue and Dakota Avenue	A	A
Kansas Avenue and Dakota Avenue	A	A
State Route 132/Maze Boulevard and Dakota Avenue	B	D
State Route 132/Maze Boulevard and Stone Avenue	A	A
State Route 132/Maze Boulevard and Texas Avenue	A	B
Woodland Avenue and Hart Road	A	A
State Route 132/Maze Boulevard and Hart Road	B	C
California Avenue and Hart Road	A	A
State Route 132/Maze Boulevard and Faust Road	A	A
State Route 132/Maze Boulevard and Russell Road	A	A
State Route 132/Maze Boulevard and Gates/Paradise Road	D	C

Pedestrian/Bicycle Facilities

Currently, no bikeway or pedestrian paths exist or are proposed within the project limits. The rural nature of the project area generally requires that bicycles share the roadways with motor vehicles. In agricultural areas, Stanislaus County provides adequate striping and paving per the standards of Caltrans and the American Association of State Highway and Transportation Officials to safely accommodate bicycle travel whenever a roadway is widened, and where adequate right-of-way exists.

Americans with Disabilities Act

Pedestrian facilities, such as sidewalks, crosswalks, and pedestrian signals, are not applicable in the area. The signalized study intersections do not provide crosswalks or pedestrian signals, and none of the unsignalized study intersections provide crosswalks. Many areas do not have sidewalks and are not accessible based on Americans with Disabilities Act standards. Most roadways in the unincorporated areas of the county do not have pedestrian facilities.

Environmental Consequences

Build Alternatives

Figures 1-5 to 1-8 show the four Build Alternatives under consideration on either the existing State Route 132 (Maze Boulevard) alignment (existing Maze Boulevard) or on a new alignment. The Measures of Effectiveness on existing State Route 132 (Maze Boulevard) and the proposed Build Alternatives are defined as a comparison between a total vehicle hour of delay, average speed, and vehicle miles traveled.

Table 2.16 Network Performance Analysis for the Year 2026 During Peak Hours

Hour	Total Vehicle Hours of Delay	Average Speed	Vehicle Miles Traveled
No-Build (No-Action) Alternative—Morning Peak Hour	43.8	43	9,949
No-Build (No-Action) Alternative—Evening Peak Hour	65.5	41	12,838
Build Alternative 1—Morning Peak Hour	30.6 (-30.1 percent)	46 (7 percent)	7,954 (-20 percent)
Build Alternative 1—Evening Peak Hour	36.4 (-44.4 percent)	47 (14.6 percent)	10,690 (-16.7 percent)
Build Alternative 2—Morning Peak Hour	16.9 (-61.4 percent)	57 (32.6 percent)	10,912 (9.7 percent)
Build Alternative 2—Evening Peak Hour	24.5 (-62.6 percent)	54 (31.7 percent)	12,299 (-4.2 percent)
Build Alternative 3 and 4—Morning Peak Hour	65.4 (49.32 percent)	46 (7 percent)	13,091 (31.6 percent)
Build Alternative 3 and 4—Evening Peak Hour	64.9 (-0.9 percent)	46 (12.2 percent)	14,026 (9.3 percent)

Source: Traffic Operations Analysis Report October 2019.

Build Alternatives 1 and 2 would result in a 30.1 percent to 61.4 percent decrease in vehicle hours of delay during the morning peak hour and 44.4 percent to 62.6 percent decrease in vehicle hours of delay during the evening peak hour when compared to the No-Build (No-Action) Alternative. Build Alternatives 3 and 4 would result in a 49.32 percent increase in vehicle hours of delay during the morning peak hour and 0.9 percent decrease in vehicle hours of delay during the evening peak hour when compared to the No-Build (No-Action) Alternative. Generally, a decrease in vehicle hours of delay indicates traffic is free-flowing; in this case, Build Alternative 2 would have the greatest decrease in total vehicle hours of delay among the Build Alternatives. Build Alternatives 3 and 4 would have a slight decrease in the total vehicle hours of delay for evening peak hours and a significant increase in the total vehicle hours of delay for morning peak hours.

All Build Alternatives would result in higher average speeds throughout the project area between 46 to 57 miles per hour for both morning and evening peak hours. The average speed of the No-Build (No-Action) Alternative was measured between 41 to 43 miles per hour.

Build Alternative 1 would result in a 20 percent decrease in Vehicle Miles Traveled for the morning peak hours and 16.7 percent in the evening peak hours when compared to the No-Build (No-Action) Alternative. Build Alternative 2 would result in a 9.7 percent increase in vehicle miles traveled for the morning peak hours and a 4.2 percent decrease for the evening peak hours. Build Alternatives 3 and 4 would increase in the morning and evening peak hours, which means more traffic on the roadway and a potential increase in traffic congestion.

Table 2.17 Design Year 2046 Build Measures of Effectiveness for State Route 132

Category	Total Vehicle Hours of Delay	Average Speed	Vehicle Miles Traveled
No-Build (No-Action) Alternative—Morning Peak Hour	226.2	26	11,465
No-Build (No-Action) Alternative—Evening Peak Hour	238.4	28	15,093
Build Alternative 1—Morning Peak Hour	49.8 (-78 percent)	44 (69.2 percent)	10,158 (-11.4 percent)
Build Alternative 1—Evening Peak Hour	57.4 (-75.9 percent)	44 (57.1 percent)	12,534 (-17 percent)
Build Alternative 2—Morning Peak Hour	36.8 (-83.7 percent)	52 (100 percent)	13,779 (20.2 percent)
Build Alternative 2—Evening Peak Hour	36.5 (-84.7 percent)	52 (85.7 percent)	13,603 (-9.9 percent)
Build Alternative 3 and 4—Morning Peak Hour	105.9 (-53.2 percent)	42 (61.5 percent)	15,123 (31.9 percent)
Build Alternative 3 and 4—Evening Peak Hour	89.8 (-62.35 percent)	44 (57.1 percent)	16,419 (8.8 percent)

Source: (Traffic Operations Analysis Report October 2019).

Table 2.17 presents the results of the network performance analysis for the design year 2046 during morning and evening peak hours.

Build Alternatives 1 and 2 would result in a decrease between 78 percent and 83.7 percent for vehicle hours of delay during the morning peak hour. The vehicle hours of delay during the evening peak hour for Build Alternatives 1 and 2 are 76 percent and 85 percent less than the No-Build (No-Action) Alternative. Build Alternatives 3 and 4 would result in a 53 percent decrease in vehicle hours of delay during the morning peak hour and a 62.3 percent decrease in vehicle hours of delay during the evening peak hour when compared to the No-Build (No-Action) Alternative. Generally, a decrease in vehicle hours of delay indicates traffic is free-flowing. Build Alternative 2 would have the greatest decrease in total vehicle hours of delay among the Build Alternatives.

The average speed improves throughout the project area for all Build Alternatives between 42 to 52 miles per hour for both morning and evening peak hours; that is an increase in speed compared to the No-Build (No-Action) Alternative, which was forecasted to be between 26 to 28 miles per hour.

Build Alternative 1 would decrease in Vehicle Miles Traveled for both the morning (-11.4 percent) and evening (-17 percent) peak hours when compared to the No-Build (No-Action) Alternative. Build Alternative 2 would decrease in Vehicle Miles Traveled for the morning peak hour (20.2 percent) and (-9.9 percent) for the evening peak hour. Build Alternatives 3 and 4 would increase in the morning (31.9 percent) and evening (8.8 percent) peak hours for vehicle

miles traveled, which means more traffic on the roadway, which would result in slow and potentially congested traffic.

For all Build Alternatives, vehicle hours of delay would decrease, and average speeds would increase when compared to future No-Project Conditions under both construction year (2026) and design year (2046). Therefore, most Build Alternatives would have a beneficial impact on travel times and average speed along existing State Route 132 (Maze Boulevard). Build Alternative 2 would have the best speed and reduce congestion among all five Alternatives.

Intersection Level of Service

Based on the existing 2018 Level of Service in Table 2.15, almost all study intersections operated at a Level of Service A or better during the morning peak hour, and a Level of Service B or better during the evening peak hour. Only two study intersections currently operate at nearly unacceptable levels. State Route 132 (Maze Boulevard) and Dakota Avenue operate at a Level of Service D during the evening peak hour, and State Route 132 (Maze Boulevard) and Gates Road/Paradise Road operate at a Level of Service D during the morning peak hour.

Table 2.18 Construction Year 2026 (Morning/Evening) Peak Hour Intersections Analysis

Intersections	No-Build (No-Action) Alternative	Build Alternative 1	Build Alternative 2	Build Alternatives 3 and 4
State Route 132/Maze Boulevard and Gates Road/Paradise Road	F/F	F/F	Not Applicable	D/C
State Route 132/Maze Boulevard and Dakota Avenue	B/B	B/B	A/A	F/B
State Route 132 (Maze Boulevard) and Hart Road	C/C	C/D	B/C	A/A

Source: Traffic Operations Analysis Report October 2019.

As shown in Table 2.18, by 2026, intersections are expected to degrade as traffic volumes increase. There would be three intersections operating at unacceptable service levels. State Route 132/Maze Boulevard and Dakota Avenue would operate at a Level of Service F for the morning peak hour under Build Alternatives 3 and 4. State Route 132/Maze Boulevard and Gates Road/Paradise Road would operate at a Level of Service F for both morning and evening peak hours under Build Alternative 1. State Route 132 (Maze Boulevard) and Hart Road would operate at a Level of Service A for both morning and evening peak hours under Build Alternatives 3 and 4.

Table 2.19 Design Year 2046 (Morning/Evening) Peak Hour Intersections Analysis

Intersections	No-Build (No-Action) Alternative	Build Alternative 1	Build Alternative 2	Build Alternatives 3 and 4
State Route 132/Maze Boulevard and Gates Road/Paradise Road	F/F	F/F	Not Applicable	F/F
State Route 132/Maze Boulevard and Dakota Avenue	F/E	B/B	A/A	F/C
State Route 132 (Maze Boulevard) and Hart Road	F/F	C/F	Not Applicable	F/F
State Route 132/Maze Boulevard and Stone Avenue	A/B	A/A	A/A	A/A

Source: Traffic Operations Analysis Report October 2019.

By 2046, as shown in Table 2.19, three intersections would be operating at unacceptable service levels under the No-Build (No-Action) Alternative and the Build Alternatives. State Route 132/Maze Boulevard and Dakota Avenue would operate at a Level of Service F for the morning peak hour under the No-Build (No-Action) Alternative and Build Alternatives 3 and 4. State Route 132/Maze Boulevard and Gates Road/Paradise Road would operate at a Level of Service F for both morning and evening peak hours under the No-Build (No-Action) Alternative and Build Alternatives 1, 3, and 4. State Route 132 (Maze Boulevard) and Hart Road would operate at a Level of Service F for the evening peak hour for Build Alternative 1 as well as the morning and evening peak hours for Build Alternatives 3 and 4. State Route 132/Maze Boulevard and Stone Avenue would operate at a Level of Service A for morning and Level of Service B for evening peak hours for the No-Build (No-Action) Alternative. However, it would perform at a Level of Service A under the four Build Alternatives.

Any of the Build Alternatives would likely provide similar improvements to transportation safety. Reducing congestion on State Route 132 (Maze Boulevard) would be a key improvement. As noted earlier, rear-end collisions, which are associated with congested conditions on the highway, make up the most accidents on State Route 132 (Maze Boulevard) at 32.2 percent of total accidents due to conflicts between slow moving traffic and speeding traffic. Because the Build Alternatives would reduce congestion compared to the No-Build (No-Action) Alternative, they would provide for a more efficient operating highway resulting in fewer conflicts.

Project construction could temporarily disrupt traffic flow where temporary lane shifts or closures are required. Most project work would be during the day; night work would be necessary to complete some key construction operations or to avoid high traffic volumes. During roadway construction, emergency vehicles may need to stop temporarily or slow down to ensure that they can safely pass

through the project study area. Implementation of a Transportation Management Plan would be required throughout project construction. The proposed project would not have access to accommodate the Americans with Disabilities Act because it was not part of the scope of work.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements, and existing State Route 132 (Maze Boulevard) would remain in its current condition. Travel times would increase, and Level of Service and vehicle speeds would worsen to unacceptable levels throughout the project study area based on projected future growth. There is also a direct correlation between crash frequency and average daily traffic volumes, so the number of accidents is expected to increase as average daily traffic volumes increase under the No-Build (No-Action) Alternative.

Avoidance, Minimization, and/or Mitigation Measures

To offset temporary disruptions during construction, Caltrans shall consult with local agencies, including fire and law enforcement, and shall prepare and implement a Traffic Management Plan to minimize traffic disruption during construction activities. The plan would be made available to the public and to each jurisdiction within the study area. Caltrans would conduct public outreach to discuss the Traffic Management Plan. The following elements shall be included in the plan: parking, detours/road closures, pedestrian/commercial/residential access and media campaign.

Parking: To minimize and reduce parking impacts, project team members will conduct meetings with the owners of affected businesses during the final project design phase and assess the parking needs. Parking spaces including on-street parking, public parking lots, or private parking areas, would be accommodated where feasible. Parking and transit studies will be conducted during the final phase of project design, and necessary parking facilities will be accommodated at feasible locations that are accessible by both motorists and public transit users.

Detour/Road Closures: A media campaign will be organized to release detour routes and traffic information. Detour signage will be installed near the construction zone to effectively redirect traffic. Potential adverse impacts to circulation and access will be avoided by maintaining as many open lanes as possible during construction.

Pedestrian/Commercial/Residential Access: Pedestrian routes along community road interchanges, overcrossings, and undercrossings will be reestablished and will be clearly defined outside of construction zones. Potential economic impacts related to decreased patronage of businesses will be minimized by locating directional signage to key commercial centers and providing for accessible ingress/egress routes into parking lots. Ingress/egress routes to neighborhoods

adjacent to or affected by construction activity shall be established and potential detours should be clearly posted.

Media Campaign: A Media Campaign will be organized to release information regarding road closure, detour routes, construction location, construction schedule, and other information related to transportation.

2.1.9 Visual/Aesthetics

Regulatory Setting

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

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

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

Affected Environment

The following section is based on the Visual Impact Assessment Report completed in July 2020, which can be found in Volume 3. The report was prepared to evaluate the potential impacts the project could have on visual resources within the project area. The report was prepared to define the project setting and view (called a "viewshed"), identify key views for visual assessment and analyze existing visual resources and viewer responses. The report was also prepared to show the visual appearance of Build Alternatives, assess the visual impacts of Build Alternatives, and explain proposed methods to reduce adverse visual impacts.

Project Setting and Existing Visual Resources

The project sits in the San Joaquin Valley near the city of Modesto in Stanislaus County. The project would start near Dakota Avenue to the east and extend west past the Gates Road/Paradise Road and State Route 132 intersection. The existing State Route 132 (Maze Boulevard) is an east/west-oriented, two-lane undivided conventional highway that carries mostly commute traffic from the Central Valley to the Bay Area and back. Existing State Route 132 (Maze

Boulevard) west of Modesto in the project limits is not an officially designated State Scenic Highway or listed as eligible to become a State Scenic Highway. According to Chapter 2 Circulation Element of the Stanislaus County General Plan, Interstate 5 is the only officially designated State Scenic Highway in Stanislaus County.

The project is positioned within the agricultural region of "The Great Central Valley" of California. The regional landscape is characterized by a large consistent open range of flat landforms well suited for the existing agribusiness operations that dominate the project area. The flat landforms can play a significant role in concealing and revealing views of a surrounding landscape. In this case, however, it is not the flat landforms that dictate what is seen in the visual environment but rather land cover.

The project area is slightly diverse with typical farm-related land cover, which includes such commodities as fruit and nut orchards, various field or row crops, and grazing land for livestock. Existing vegetation within the project limits consists mostly of naturalized species most likely introduced via agricultural practices.

Land use within the project corridor is mostly agricultural or related to agriculture with some residential ranch housing. The existing human settlement patterns are typical of rural agricultural land uses, as defined by low-population-dwelling density on large parcels. Land uses in this area include farming and farmworker housing, dairy and cattle operations, agricultural processing businesses, fertilizer distribution companies, and produce trucking outfits. Another predominant human-made element is that of the existing State Route 132 roadway surface and associated roadway items, including signage, guardrail, and traffic signal lights.

Types of Viewers

Two major types of viewer groups were identified for the project area. Each viewer group has its own level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group that help to predict its responses to visual changes.

Highway Neighbors (Views to the Road)

Highway neighbors are people who have views to the road. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate highway neighbors or viewer groups with distinct reasons for being in the corridor and therefore having distinct responses to changes in visual resources. For this project, the following highway neighbors were considered: residential, commercial, retail, recreational, and agricultural.

Highway Users (Views from the Road)

Highway users are people who have views from the road. They can be subdivided into different viewer groups in two different ways—by mode of travel or by reason for travel. For example, categorizing highway users by mode of travel may yield pedestrians, bicyclists, transit riders, car drivers, passengers, and truck drivers. Categorizing highway users or viewer groups by reason for travel creates categories such as tourists, commuters, and haulers. It is also possible to use mode of travel and reason for travel simultaneously, creating a category such as bicycling tourists, for example. For this project, the following highway users were considered: car drivers, passengers, truck drivers, tourists, commuters, and haulers.

Viewer Response

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions, as previously mentioned—viewer exposure and viewer sensitivity.

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. Location relates to the position of the viewer in relationship to the object they are viewing. The closer the viewer is to the object, the more exposure. Quantity refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers. Duration refers to how long a viewer can keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of an object; it has three attributes: activity, awareness, and local values. Activity relates to the preoccupation of viewers. Are they preoccupied, thinking of something else, or are they truly engaged in seeing their surroundings? The more they see their surroundings, the more sensitivity viewers will have toward changes to visual resources. Awareness relates to the focus of view; is the focus wide, and the view general, or is the focus narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change.

Local values and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, viewers will likely be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual changes.

Group Viewer Responses

The descriptions of viewer exposure and viewer sensitivity for each viewer group were merged to establish the overall viewer response for the type of viewers identified—highway neighbors and highway users.

Definition of Visual Impact Levels

Low—Low negative change to existing visual resources, and low viewer response to that change. May or may not require mitigation.

Moderately Low—Low negative change to existing visual resources with a moderate viewer response, or moderate negative change to existing visual resources with a low viewer response. Impacts can be mitigated using conventional practices.

Moderate—Moderate negative change to existing visual resources with a moderate viewer response. Impacts can be mitigated within 5 years, using conventional practices.

Moderately High—Moderate negative change to existing visual resources with a high viewer response, or high negative change to existing visual resources with a moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment would be required and would generally take longer than 5 years to mitigate.

High—High negative change to existing visual resources with a high viewer response such that extraordinary architectural design and landscape treatment may not mitigate the impacts below a high level. An alternative project design may be required to avoid high negative impacts.

Visual Assessment Units and Key Views

A methodology for assessing visual attributes of a transportation project corridor is to divide the corridor into a series of “outdoor rooms” or visual assessment units that have common visual characteristics. For this project, one visual assessment unit has been defined as the Agricultural Visual Assessment Unit. The entire project area possesses the same overall visual character and visual quality and is therefore regarded as a single unit.

However, within the Agricultural Visual Assessment Unit, two subunits emerge (as shown in Figure 2-4).

- Subunit 1: New Alignment (Build Alternatives 1 and 2). Visual Assessment Subunit 1 has two alignments—Build Alternatives 1 and 2—proposed to extend west through existing orchards from the project starting at North Dakota Avenue and ending at the project terminus west of Gates Road/Paradise Road on State Route 132.

- Subunit 2: Existing State Route 132 Alignment (Build Alternatives 3 and 4). Visual Assessment Subunit 2 also has two proposed alignments—Build Alternatives 3 and 4—that extend west along the existing State Route 132 corridor, aligned either on the north side (Build Alternative 3) or the south side (Build Alternative 4) of State Route 132. Both alignments start at North Dakota Avenue and end at the project terminus west of Gates Road/Paradise Road on State Route 132.

While both subunits possess the same visual characteristics and qualities, the views related to the local and regional viewshed do not follow the same order between all four Build Alternatives.

It is not feasible to analyze all the views in which the proposed project would be seen. Therefore it is necessary to select several key views that would most clearly demonstrate the level of change to visual resources caused by the project. Key views also represent the viewer groups that have the highest potential to be affected by the project considering exposure and sensitivity. Additionally, these key views would be analyzed for each proposed Build Alternative. See Figure 2-4 and Figure 2-5 for the two visual assessment subunits and their associated key views.

Figure 2-4 Visual Assessment Subunits

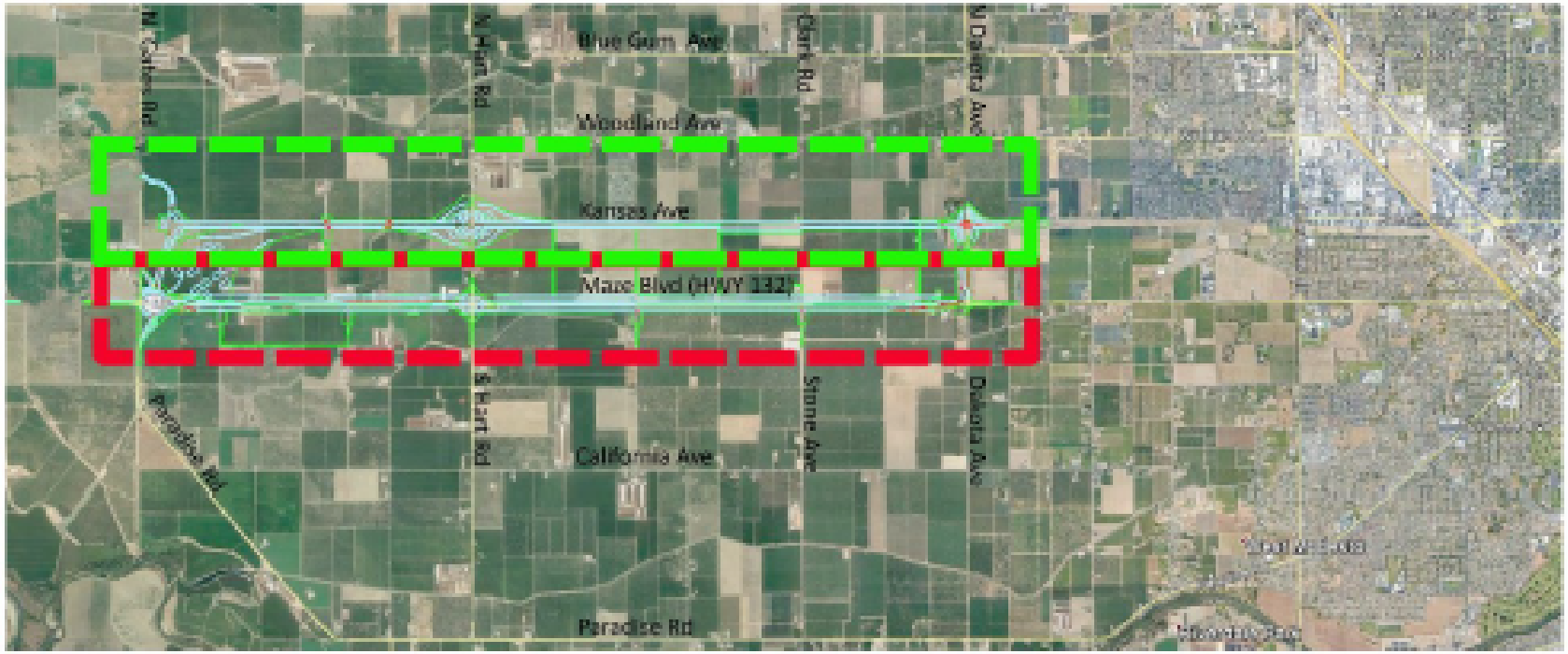
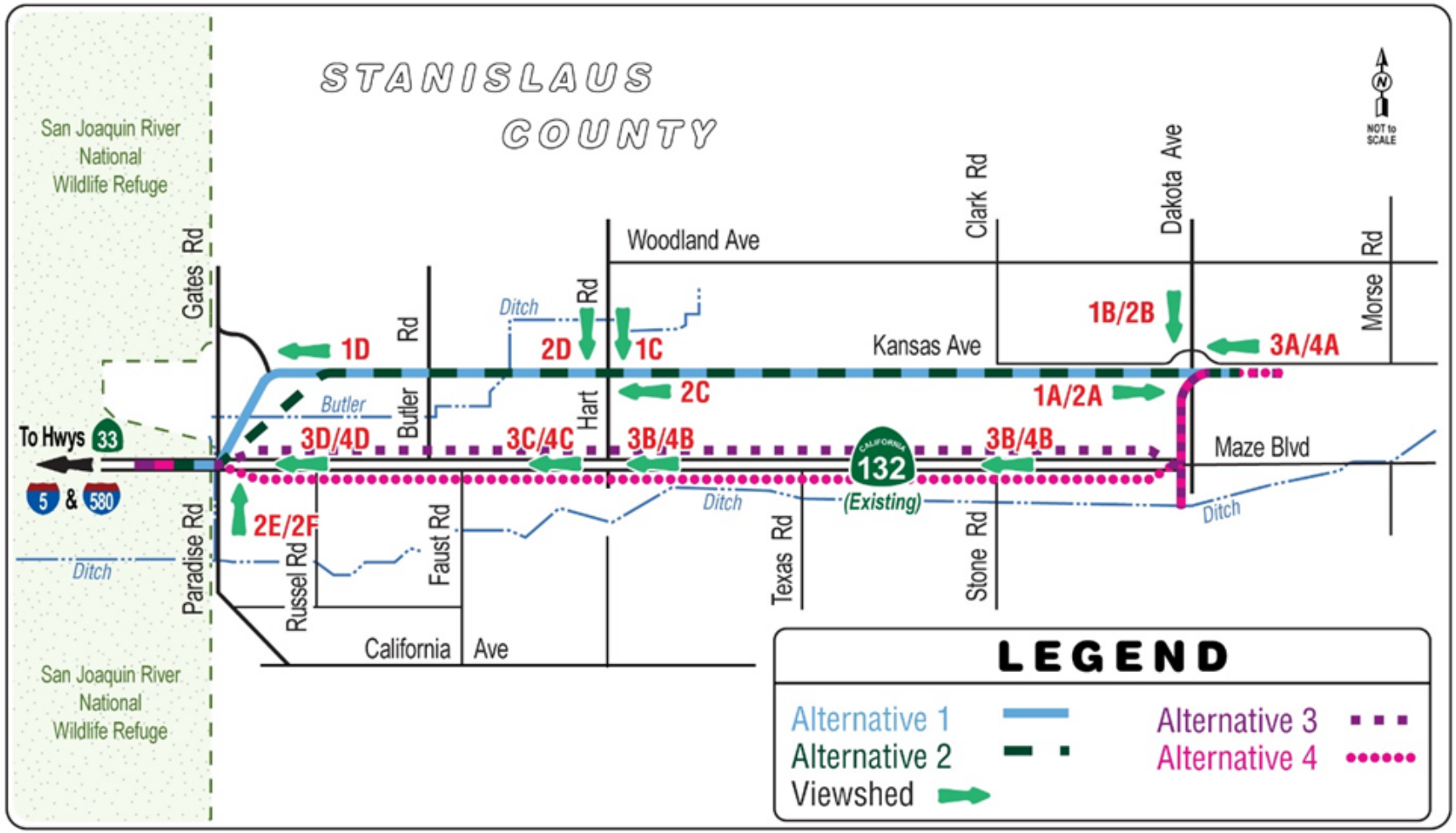


Figure 2-5 Key Views for Proposed Build Alternatives



- Subunit 1: New Alignment (Build Alternatives 1 and 2). This subunit is unique in that it is away from the more populated State Route 132 corridor. The visual character for this subunit is defined as more rural in character near the eastern project boundary, with only a few nearby residential dwellings surrounded by large blocks of fruit and nut orchards. The proximity of these orchards to the existing roadway dominates the viewshed, limiting long-range vistas. Views in these locations are generally relegated to the foreground, resulting in views that are spatially enclosed. Visual diversity in these conditions is low. These conditions are expected to run continuously until near the western project boundary. The western project boundary is where views transition into a full array of foreground and middle ground displays of existing low-growing field crops and pasture lands, ultimately expanding to wide-open panoramic scenes to where the valley floor meets the distant Diablo Grande Mountain Range at the extreme western skyline. The built environment also comes into view because two large dairy operations and one small mobile home park can be detected near the existing State Route 132 corridor. Overall, these expanded views offer the viewer with a high level of visual diversity. Traveling east on State Route 132 at the western project boundary, vague views of the Sierra Nevada in the extreme eastern background are visible. Views to this famous mountain range are more prolific farther west of the project boundary where mountains versus existing orchard trees can be more readily differentiated. These mountain views diminish nearing the western project limits, where the existing orchards take over and dominate the viewshed.
- Key Views 1A and 2A show a view that is very typical to roadways within orchard areas of this rural region. These viewsheds are compatible with the surrounding visual environment, ranking moderate to moderately high for visual continuity and color. Diversity also ranks moderately high because scenes such as these reflect the regional character. Overall, the visual character is rated as moderate to moderately low. Visual quality ranks moderately high because this location is free from nontypical visual intrusion, and visual patterning reflects well in the region.
- Key Views 1B and 2B show an existing view from across Kansas Avenue to an existing almond orchard. The visual character is defined by the orchard landcover that surrounds this parcel on three sides and immediately across Kansas Avenue. The visual character is highly compatible with the rural environment of this agricultural region. While the visual character is considered highly compatible with its surroundings, it ranks low in terms of pattern elements and pattern character. Orchard edges are rigid and lack diversity. The visual mass and scale restrict views to the foreground. Visual quality ranks higher but only slightly because there is nothing that would particularly hold a viewer’s attention to the point of memorability.
- Key View 1C shows an existing view from Hart Road looking south toward the proposed State Route 132 and Hart Road intersection. The visual character of this view is highly representational and accurately defines the

visual environment of this rural agricultural region. This vantage point shows the typically flat terrain with the nearby production crops grown in the region. Pattern elements and character rank higher, led by the ranking for color and diversity. Visual quality also ranks moderately high because the viewshed is free from nontypical visual intrusions and possesses visual attributes that are in harmony with this rural agricultural region.

- Key View 1D shows an existing view from Gates Road looking south toward existing State Route 132 and the Hart Road/Paradise Road intersection. The visual character of this view is typical of the immense Central Valley and the vast expanses of the low-lying field crops and pasture lands that dominate the landscape. Pattern elements and character rank moderately high for color and moderate for texture, continuity, and dominance. Visual quality also ranks moderately high because the viewshed is memorable, free from nontypical visual intrusions, and possesses visual attributes that are in harmony with this rural agricultural region.
- Key Views 2C and 2D show an existing view from Hart Road looking south toward the proposed State Route 132 and Hart Road intersection. The visual character of this view is highly representational and accurately defines the visual environment of this rural agricultural region. This vantage point shows the typically flat terrain with the nearby production crops grown in the region. Pattern elements and character rank higher, led by the ranking for color and diversity. Visual quality also ranks moderately high because the viewshed is free from nontypical visual intrusions and possesses visual attributes that are in harmony with this rural agricultural region.
- Key Views 2E and 2F show an existing view from Gates Road looking south toward existing State Route 132 and Hart Road/Paradise Road diamond interchange, about 0.5 mile in the distance. The visual character of this view is typical of the immense Central Valley and the vast expanses of the low-lying field crops and pasture lands that dominate the landscape. Pattern elements and character rank moderately high for color and moderate for texture, continuity, and dominance. Visual quality also ranks moderately high because the viewshed is memorable, free from nontypical visual intrusions, and possesses visual attributes that are in harmony with this rural agricultural region.
- Subunit 2: Existing State Route 132 Alignment (Build Alternatives 3 and 4). The existing visual character of the existing State Route 132 alignment is also defined as rural. While this area is considerably more populated than subunit 1, it still reflects the visual character indicative of rural farming communities. Subunit 2 is characterized by long continuous blocks of fruit and nut orchards with occasional parcels of low-growing field crops and pasture lands. Added to this, both Build Alternatives 3 and 4 are proposed to be built near the existing State Route 132 alignment, which would carry on the same visual patterning of the corridor and act as a visual prelude of what can be expected post-construction.

On the east end of the project limits within the existing tree orchards, views are restricted due to tree height and the proximity of these trees to the roadway. Foreground views dominate the viewshed, limiting background views and resulting in views that are spatially enclosed. Visual diversity in these conditions is low. Heading west, views become intermittently punctuated by distant scenes of the Diablo Grande Mountain Range in locations where low-growing field crops are farmed, and background viewing is allowed. These intermittent views offer the viewer with a high level of visual diversity as visual changes occur.

Farther west, just past Hart Road, long-range panoramic scenes become visible, providing unobstructed views to the south and west where sky and valley floor meets the distant mountain range. About 1.25 miles west along this same alignment, the northern portion of the Central Valley comes into full view, revealing the enormity of California's famed valley. These long-range vantage points provide viewers with an appreciation at the sheer vastness of the San Joaquin Valley while offering a connection with the natural environment. These changing and expanded views offer the viewer with a high to a moderately high level of visual diversity. Eastern views are the same as described for Subunit 1 above.

- Key Views 3A and 4A show the existing view of the North Dakota Avenue and Kansas Avenue intersection. This view shows a scene that is very typical to roadways within orchard areas of this rural region. The viewshed is compatible with the surrounding visual environment, ranking moderate to moderately high for visual continuity and color. Diversity ranks lower because scenes such as these are repetitive and lack visual variety. Overall, the visual character is rated as moderate to moderately low. Visual quality ranks moderately high because this location is free from nontypical visual intrusion and visual patterning reflects the region well.
- Key Views 3B and 4B show the existing view of the Hart Road and State Route 132 intersection, looking west. Views are confined and attention is directed to the nearby residential and commercial development surrounding the intersection. A slight urban intrusion has encroached at this crossroad, degrading the visual character due to the lack of continuity with this rural agricultural region. Consequently, the visual character rating for this location is ranked low as compared with the existing regional landscape. Visual quality also ranks low, compromised by the introduction of disjointed nontypical elements that impact visual harmony.
- Key View 3C shows an existing view from the proposed State Route 132 roadway. The visual character of this view is highly representational and reflects the existing agricultural visual environment. This vantage point shows the typically flat terrain with the nearby fruit and nut orchards grown in the region. Pattern elements and character rank low for form, line, and dominance because nearby landcover has a prominent visual mass and is highly rigid and rectangular. Color provides diversity with the intermixing of crop types. Visual quality ranks moderately high because the viewshed is

free from nontypical visual intrusions and possesses visual attributes that are in harmony with this region.

- Key View 3D shows an existing view from near Gates Road looking west toward the distant Diablo Grande Mountains. The visual character of this view is typical of the immense Central Valley and the vast expanses of the low-lying field crops and pasture lands that dominate the landscape. Pattern elements and character rank moderately low for this location with color ranking at moderately high. Visual quality also ranks moderately high because the viewshed is memorable and generally free from nontypical visual intrusions. Unity ranks moderately high because visual attributes portray an above average consistency related to the visual environment.
- Key View 4C shows an existing view from the proposed State Route 132 roadway. The visual character of this view is highly representational and reflects well on the existing agricultural visual environment. This vantage point shows the typically flat terrain with the nearby fruit and nut orchards grown in the region. Pattern elements and character rank low for form, line, and dominance because nearby landcover has a prominent visual mass and is highly rigid and rectangular. Color provides diversity with the intermixing of crop types. Visual quality, on the other hand, ranks moderately high because the viewshed is free from nontypical visual intrusions and possesses visual attributes that are in harmony with this region.
- Key View 4D shows an existing view from near Gates Road looking west toward the distant Diablo Grande Mountains. The visual character of this view is typical of the immense Central Valley and the vast expanses of the low-lying field crops and pasture lands that dominate the landscape. Pattern elements and character rank moderately low for this location with color ranking at moderately high. Visual quality also ranks moderately high because the viewshed is memorable and generally free from nontypical visual intrusions. Unity ranks moderately high because visual attributes portray an above average consistency related to the visual environment.

Environmental Consequences

Resource Change for the Build Alternatives

Visual impacts of varying degrees are expected with each Build Alternative.

Build Alternative 1

Build Alternative 1 is within the New Alternative Visual Assessment Unit. Build Alternative 1 proposes a new east/west expressway on the south side of Kansas Avenue, extending from North Dakota Avenue to the west and connecting to the existing State Route 132 (Maze Boulevard) roadway alignment past the realigned Gates Road/Paradise Road intersection to the west. This new roadway would be built on and through existing prime agricultural lands. The existing State Route 132 (Maze Boulevard) roadway alignment is expected to disrupt the existing visual character of the region, which is considered a high

visual resource for Stanislaus County. Additionally, the roadway would add an urban quality to this intact agricultural farmland.

Build Alternative 1 would have a moderately high level of impact on existing visual resources because views are expected to degrade. Key Views 1A and 1B have the highest levels of impact due to viewer proximity and their direct visual access to the proposed project facilities. The existing orchard viewshed would be replaced with views to a new 25-foot-high North Dakota Avenue bridge overcrossing and new 180-foot-wide, four-lane expressway. Visual resource impacts for Key Views 1C and 1D are considerably lower because surrounding neighbors would be visually screened from the new facilities by existing orchards or as a result of greater viewing distances.

Build Alternative 2

Build Alternative 2 is within the New Alternative Visual Assessment Unit. Build Alternative 2 proposes a new east/west freeway on the south side of Kansas Avenue. The alternative would extend from North Dakota Avenue to the west and connect to the existing State Route 132 (Maze Boulevard) roadway alignment past the realigned Gates Road/Paradise Road intersection to the west. This new freeway would be built on and through existing prime agricultural lands. The State Route 132 (Maze Boulevard) roadway alignment is expected to cause a high level of disruption to the existing visual character of this region, which is considered a high visual resource for Stanislaus County. Additionally, the roadway would add an urban quality to this intact agricultural farmland.

Build Alternative 2 would have a high level of impact on existing visual resources because views are expected to degrade. Key Views 2A and 2B, which are identical to key views 1A and 1B, would have a high level of impact due to viewer proximity and their direct visual access to the proposed project facilities. Views would degrade because the existing orchard viewshed would be replaced with views to a new 25-foot-high North Dakota Avenue bridge overcrossing and new 180-foot-wide, four-lane freeway.

Visual resource impacts are greater for Key Views 2C and 2D along with 2E and 2F, which reflect the implementation of a spread diamond interchange with roundabouts at Hart Road and realigned Gates Road. The construction area expected for these large-scale structures is immense, stretching nearly a mile long and a third of a mile wide for each. The interchange at Hart Road would have a bridge height of 22 feet and 27 feet at Gates Road. The height and size of these nontypical facilities would visually intrude into this existing region and would be highly noticeable for years.

Build Alternatives 3 and 4

Build Alternatives 3 and 4 are within the existing State Route 132 alignment Visual Assessment Unit. Build Alternative 3 proposes a new east/west, access-controlled expressway alignment on the north side of the existing State Route 132 (Maze Boulevard) roadway. This Build Alternative would connect to the

same State Route 132/Maze Boulevard on the west end of the project and the new State Route 132 West freeway/expressway on the east end. Signalized intersections are proposed at North Dakota Avenue/State Route 132 West freeway/expressway, Maze Boulevard/South Dakota Avenue, Hart Road, and the realigned Gates Road/Paradise Road intersection. For Build Alternative 3, the existing State Route 132 (Maze Boulevard) roadway would become a frontage road to the south. For Build Alternative 4, the existing State Route 132 (Maze Boulevard) roadway would become a frontage road to the north with the new alignment being constructed on the south side of the existing State Route 132 (Maze Boulevard) roadway.

Build Alternatives 3 and 4 would have a moderately low level of impact on existing visual resources because views would slightly degrade. These Build Alternatives, while common to this region, adds an increased urban component to this specific location, by means of a larger roadway footprint and additional roadway accessories. Some farmland would be removed to make way for the expanded roadway but not to the extent of visual detriment. In fact, the opposite is true because views may be considered more in character with the sparse development of agricultural landscape, resulting in a slight boost to visual intactness and unity.

No-Build (No-Action) Alternative

While roadway systems tend to degrade over time, associated visual impacts are not expected if the No-Build (No-Action) Alternative is selected. The No-Build (No-Action) Alternative would result in no change to the project corridor. The No-Build (No-Action) Alternative would allow for all the existing mature trees and vegetation along the project site to remain, as well as all the existing agricultural lands. However, the No-Build (No-Action) Alternative would also result in more traffic congestion because the population would continue to grow, and the associated amount of highway travelers would continue to increase, which would reduce the visual character and quality of the area.

Visual Impacts by Key View and Build Alternative

It is not feasible to analyze all the views in which the proposed project would be seen. It is necessary, however, to select several key views that would most clearly demonstrate the level of change to visual resources caused by the project. Key views also represent the viewer groups that have the highest potential to be affected by the project considering exposure and sensitivity. These key views have been analyzed for each proposed Build Alternative. The following section describes and illustrates visual impacts by the Visual Assessment Unit, compares existing conditions to the proposed Build Alternatives, and includes the predicted viewer response.

Subunit 1: New Alignment (Build Alternatives 1 and 2)

Key Views 1A and 2A—North Dakota Avenue Overcrossing

Proposed Project Features

Build Alternatives 1 and 2 would realign Kansas Avenue to the north, away from the current Dakota Avenue/Kansas Avenue intersection, and build an overcrossing on the existing North Dakota Avenue alignment to extend over the proposed corridors of Build Alternatives 1 and 2. Kansas Avenue would become a frontage road to the north of the proposed State Route 132 alignment. The elevation of the bridge overcrossing is expected to be 25 feet higher than the existing ground elevation with more than 1,400 feet of a structural embankment that would gradually raise the profile along North Dakota Avenue until the 25-foot bridge height is reached.

Change to Visual Character/Quality

The project is expected to cause a moderately high visual impact. The construction of the proposed overcrossing along with the realigned Kansas Avenue frontage road would increase visual mass to an otherwise flat landform and create side slopes that would encroach into the surrounding parcels. Between the alignment shift of Kansas Avenue and the encroaching side slopes, this feature would adversely impact the nearby neighbor on the northwest side of the overcrossing. The resulting overall resource change to the visual character and visual quality would be high.

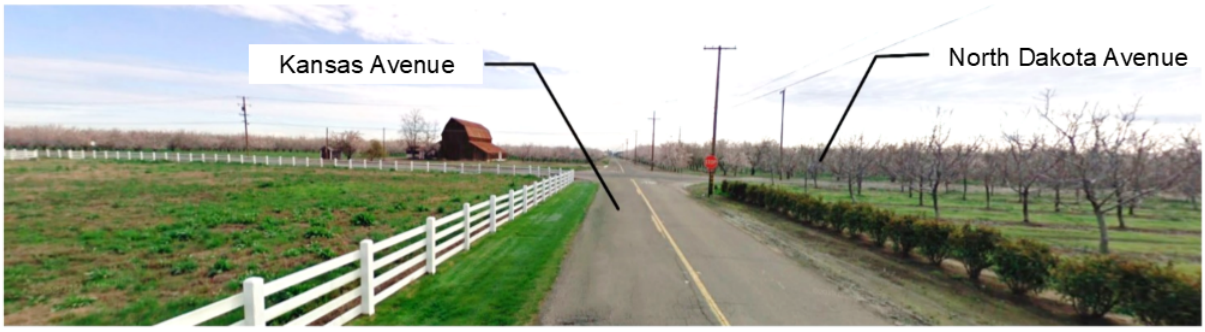
Viewer Response

There is one neighbor for this key view. Viewer location and duration of views would be rated high. However, since there is only one viewer group that would be impacted at this location, the average viewer exposure for neighbors would be rated from moderate to moderately high. The number of roadway users for Key Views 1A and 2A would include all six user groups previously identified. Viewer response ratings for the represented user groups rank viewer exposure at moderate and viewer sensitivity at moderately high with an overall average viewer response rating of moderate.

Resulting Visual Impact

Structures of this type are considered nontypical for this region. Views to the proposed overcrossing are visually accessible, both to and from all roadways. Views in this location are expected to degrade, causing an adverse visual impact on residents facing this structure. The change to visual resources would be high. The viewer response is slightly less, ranking at moderately high. The combined ranking average shows a visual impact rating of high. Landscaping would help minimize the visual impacts by screening views to this nontypical structure. Bridge aesthetics are warranted and must reflect the agricultural character of this region.

Figure 2-6 Key Views 1A and 2A—North Dakota Avenue Overcrossing



Existing view looking east at intersection of Kansas Avenue and North Dakota Avenue.

Proposed View Looking East at the Alternative 1 and 2 Alignments and the North Dakota Avenue Overcrossing

Proposed view looking east at the North Dakota Avenue Overcrossing with landscaping.

Key Views 1B and 2B—Residents on the North Side of Kansas Avenue Frontage Road

Proposed Project Features

The existing orchard across Kansas Avenue would be removed to make room for the State Route 132 road section. Orchard trees that were once only 30 to 40 feet away would be more than 250 feet away. The proposed State Route 132 roadway would become the predominate viewing feature from this location and

would have only middle ground views to the almond trees across the newly paved highway.

Change to Visual Character/Quality

Neighbors living this close to the proposed State Route 132 roadway is expected to cause a high level of change to existing visual resources and, therefore, to the viewers. The implementation of the proposed roadway along with Kansas Avenue remaining as a frontage road would negatively impact pattern elements and pattern character because visual mass overtakes existing landform and landcover, dominating the viewshed. Similarly, the level of change to visual quality would also be degraded post-construction. All visual quality elements would be reduced across the board. The composite level of change between visual character and visual quality would be overwhelmingly high.

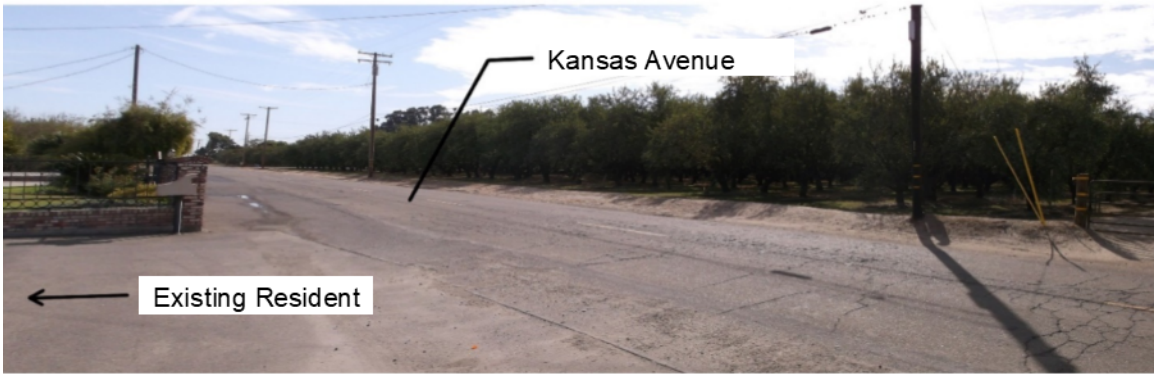
Viewer Response

Two neighbors live at or near Key Views 1B and 2B. Viewer location and duration for these viewers would be rated very high. However, since there is only one viewer group—two ranch homes—that would be impacted at or near this location, the viewer exposure for neighbors would be rated from moderate to moderately high. The number of roadway users includes all six user groups previously identified. Viewer response ratings for the represented user groups rate viewer exposure and viewer sensitivity at moderate with an overall viewer response rating of moderate.

Resulting Visual Impact

While these types of facilities are common to the region, they are considered nontypical for this viewer location. Views to the proposed State Route 132 roadway are visually accessible to all roadway users and neighbors. The visual resource change rates high. The viewer response is less, ranking at a moderate level. The combined ranking shows a visual impact rating of moderately high. Visual screening for highway neighbors is warranted.

Figure 2-7 Key Views 1B and 2B—Residence on the North Side of the Kansas Avenue Frontage Road



Existing view looking southeast from existing resident to remain, across Kansas Avenue.

Proposed view looking southeast across Kansas Avenue frontage road to the constructed Alternative 1 and 2 alignments.

Vegetative landscape screen between the proposed Kansas Avenue frontage road and the new Alternative 1 and 2 alignments.

Key View 1C—State Route 132 and Hart Road Roundabout

Proposed Project Features

The proposed design feature for Key View 1C for Build Alternative 1 would be a four-legged roundabout at the intersection of State Route 132 and Hart Road. The roundabout facility would, for the most part, be situated at or near original grade with drainage basins in all four quadrants. This means views to the roundabout would be relatively undetectable for neighbors living nearby. The land outside the proposed right-of-way is expected to remain with little disturbance from highway construction activities. Areas that are disturbed would be treated with landscaping and wildflower seeding to compensate for any visual degradation. Landscape treatments must match the existing agricultural character of the corridor.

Change to Visual Character/Quality

The change to the visual character and/or quality is expected to be moderately low. While the level of change ranks at moderately low, it is still a negative change to existing visual resources. Construction of the proposed roundabout would negatively interrupt the existing visual pattern character and elements across the board. This nontypical facility would also degrade visual quality because intactness and unity ratings lower. However, the new feature becomes

more memorable due to the uniqueness of this foreign facility. Therefore, the rating for vividness increases, which keeps the level of change to a moderately low rating.

Viewer Response

There are no highway neighbors who would be living near the new facility and would have direct visual access. The closest highway neighbors live about 0.3 mile away on Hart Road in each direction. These neighbors would have more visual access to this roundabout facility as users (drivers or passengers) of the facility. Therefore, visual exposure for this group is rated low. The number of roadway users for Key View 1C includes all six user groups previously identified. Viewer exposure is slightly elevated because the duration of views would increase to account for the time it would take users to become familiar with roundabout maneuvering. As speeds decrease, viewer exposure increases. As drivers approach unfamiliar obstacles, speeds tend to decrease, and viewer awareness is heightened. The level of response related to viewer exposure and viewer sensitivity for these viewer groups is ranked moderately low.

Resulting Visual Impact

Roundabout facilities are considered an urban element and are uncommon to this region. Viewer exposure and visual accessibility are predictably higher for highway users than for highway neighbors. The visual resource change between existing and proposed conditions has a rating change of moderately low. The viewer response rating is slightly less, ranking at a moderately low level of change. The combined ranking shows a visual impact rating of moderately low. Landscaping to help this urban element to fit in better with the surrounding rural visual environment is warranted.

Figure 2-8 Key View 1C—State Route 132 and Hart Road Roundabout

Existing view looking south from Hart Road towards proposed roundabout location.

Proposed view looking south at Hart Road roundabout for Alternative 1

Key View 1D—State Route 132 and Realigned Gates Road Roundabout

Proposed Project Features

The proposed design feature at Key View 1D for Build Alternative 1 would be a three-legged roundabout at the realigned Gates Road and State Route 132 intersection. The roundabout would, for the most part, be situated at or near original grade with three proposed drainage basins. Views to the roundabout would be relatively undetectable for neighbors living nearby, and the land outside the proposed right-of-way is expected to remain with little disturbance from highway construction activities. Disturbed areas would be treated with landscaping and wildflower seeding to alleviate any visual degradation. Landscape treatment must match the existing agricultural character of the corridor.

Change to Visual Character/Quality

The change to the visual character and/or quality is expected to be moderately low with the construction of the Gates Road and State Route 132 roundabout.

Viewer Response

There are no highway neighbors who would be living near this new facility. However, there are two highway neighbors, including one home on the east side

of Gates Road and on a dairy operation on the west, both of which would have direct middle ground views to this facility. Therefore, visual response for this group is expected to rank moderate for visual exposure because both highway neighbors have a long duration and direct middle-ground visual access to the facility. The number of roadway users for Key View 1D includes all six user groups. Each of these highway users ranks high for proximity to the Gates Road/State Route 132 roundabout, which translates to more viewer exposure. Viewer exposure would also elevate because the duration of views would increase to account for the time it would take users to become familiar with roundabout maneuvering. As speeds decrease, viewer exposure increases. As drivers approach unfamiliar obstacles, speeds tend to decrease, and viewer awareness is heightened. The level of response related to viewer exposure and viewer sensitivity for these viewer groups is expected to rank at moderate.

Resulting Visual Impact

Roundabouts are considered urban elements and are uncommon to the region. Viewer response and visual accessibility are predictably higher for highway users than for highway neighbors. The visual resource change between existing and proposed conditions results in a rating change of moderately low. The viewer response rating is higher, ranking at a moderate level of change. The combined ranking shows a visual impact rating of moderate. Landscaping to help this urban element to fit in better with the surrounding rural visual environment is warranted.

Figure 2-9 Key View 1D—State Route 132 and Realigned Gates Road Roundabout

Existing view from Gates Road looking south toward proposed State Route 132 roundabout location

View looking southeast at realigned Gates Road toward roundabout.

Proposed view looking south at Hart Road roundabout for Alternative 1

Key Views 2C and 2D—Hart Road Spread Diamond Interchange

Proposed Project Features

The proposed design feature at Key Views 2C and 2D for Build Alternative 2 would be a spread diamond interchange. This interchange would be at Hart Road and is proposed with roundabouts at the westbound and eastbound on-ramp and off-ramp system as well as drainage basins in all four quadrants

between the ramp system and the new freeway alignment. The height of the bridge overcrossing structure is expected to be 22 feet above the original valley floor elevation. The result is that this structure would be built near four highway neighbors. Two of the four highway neighbors would have direct visual access, while views for the remaining two would be screened by existing almond orchards.

The land outside the proposed right-of-way is expected to remain with little disturbance from highway construction activities. Disturbed areas would be treated with landscaping and wildflower seeding to alleviate any visual degradation. Landscape treatment within the construction footprint is highly recommended to reflect the existing visual agricultural character of the corridor.

Change to Visual Character/Quality

The change to the visual character and/or quality for this location is expected to be high. The construction of the proposed spread diamond interchange, along with the two roundabouts, would detract from the existing visual environment by the intrusion of a large-scale, nontypical urban element into a rural visual environment. The footprint of this interchange would be very large and would stretch about 0.3 mile wide along Hart Road and about 0.9 mile long from beginning to end along the new State Route 132 alignment. The encroachment into the surrounding agriculture parcels would be highly noticeable for years, even with mitigation measures in place. The one positive aspect is that this proposed interchange would be in a very low-density populated area.

Viewer Response

There are three highway neighbors—two homes and one dairy operation—that would be close to this new facility and would have direct visual access. The closest highway neighbor—a home—would be near the proposed eastbound off-ramp roundabout on the west side of Hart Road. The other home would be about 300 feet north of the proposed westbound off-ramp roundabout, also on the west side. The third highway neighbor is a dairy operation, existing farther north, about 0.25 mile from the westbound roundabout on the east side of Hart Road. These neighbors would have a moderately high level of exposure with a moderate level of sensitivity. The number of roadway users for Key Views 2C and 2D includes all six user groups previously identified. Viewer exposure is moderate for this user group due to viewer proximity and the number of viewers. Highway users would share the same viewer sensitivity with their highway neighbor counterparts. The overall level of response is ranked moderately high.

Resulting Visual Impact

The proposed Hart Road interchange is a large-scale, nontypical urban element that would change the character of this regional landscape. Facilities like this are considered urban elements and viewed as foreign within the project limits. Visual resource change and viewer response are predictably higher. The visual resource change between existing and proposed conditions would result in a

rating change of high. The viewer response rating would be slightly less, ranking a moderately high level of change. The combined ranking shows a visual impact rating of high. Landscaping to mitigate the visual impacts caused by the interchange construction is highly warranted.

Figure 2-10 Key View 2C—Hart Road Spread Diamond Interchange

Existing view looking west from North Hart Road to proposed Alternative 1 and 2 alignments.

Proposed view looking west from under the proposed spread diamond interchange overcrossing at State Route 132 and North Hart Road for new Alternative 2 alignment. Image shows possible landscape treatment.

Figure 2-11 Key View 2D—Hart Road Spread Diamond Interchange

Typical view looking south along Hart Road near proposed Alternative 2 alignment.

Proposed view looking south at Hart Road northbound ramp roundabout for Alternative 2 with landscape treatment

Key Views 2E and 2F—State Route 132 and Realigned Gates Road Interchange

Proposed Project Features

The proposed design feature at Key Views 2E and 2F for Build Alternative 2 would also be a spread diamond interchange. The spread diamond interchange would be at the realigned Gates Road alignment and is also proposed with roundabouts at the eastbound and westbound on-ramp and off-ramp system. The spread diamond interchange would be built with drainage basins in most of the four quadrants between the ramp system and the new freeway alignment and around the two roundabouts. Gates Road would be designed as an undercrossing to the new State Route 132 freeway alignment. The height of the freeway overpass is expected to be 27’ above the original valley floor elevation. With the flat terrain of the valley surrounding the proposed spread diamond interchange, views to this structure would be uninhabited to nearby highway neighbors. The construction footprint is large and is expected to disturb a considerable amount of acreage. The land outside the proposed right-of-way is expected to remain with little disturbance from highway construction activities. Disturbed areas would be treated with landscaping and wildflower seeding to alleviate any visual degradation. Landscape treatment within the project footprint is highly warranted.

Change to Visual Character/Quality

The change to the visual character and/or quality for this location is expected to be high. Like the structure proposed at State Route 132 and Hart Road, construction of the proposed spread diamond interchange and roundabouts would take away from the existing visual environment by the intrusion of a large-scale, nontypical urban element that would visually conflict with the existing rural environment. The footprint of the proposed spread diamond interchange would be large and would stretch about 0.3 mile wide along Gates Road and over 1 mile in length from beginning to end along the new State Route 132 freeway alignment. The encroachment into the surrounding agricultural landscape would be highly noticeable for years, even with mitigation measures in place.

Viewer Response

This State Route 132 spread diamond interchange is in a sparsely populated area inside the project limits. There are three highway neighbors on or near Gates Road—two homes and one dairy operation—and one highway neighbor—a mobile home park—next to existing State Route 132 on the south side of the highway. Each highway neighbor in this viewer group would have direct visual access to the proposed Gates Road spread diamond interchange. The closest neighbor—a mobile home park—would be about 0.1 mile away from the facility. Views to the spread diamond interchange would dominate the viewshed, interrupting continuity and degrading visual quality to the north.

North along Gates Road, views to the proposed interchange are similar but at a greater viewing distance. One home is in the middle of an almond orchard about 0.25 mile northwest of the proposed spread diamond interchange. This home would also be about 0.1 mile north of the realigned Gates Road. The second home would be 0.5 mile northwest of the proposed spread diamond interchange on the east side of Gates Road. The dairy operation would be about 0.4 mile west of the spread diamond interchange on the west side of Gates Road. These last three highway neighbors are expected to have diminished views until the existing young almond trees grow to maturity and screen the proposed spread diamond interchange. This group would have a moderately high level of exposure to the spread diamond interchange.

The number of roadway users for Key Views 2E and 2F includes all six user groups previously identified. Overall, viewer exposure is moderately high for highway neighbors due to viewer proximity and the number of viewers. Highway users would share a slightly higher viewer sensitivity with their highway user counterparts. The level of response for both groups is ranked moderately high.

Resulting Visual Impact

The proposed Gates Road spread diamond interchange is a large-scale, nontypical urban element that would change the visual character of the regional landscape. Facilities like this are considered urban in nature and viewed as foreign objects within the project area. Since this particular facility would be

elevated above the natural flat terrain, views to the structure would have direct visual access for miles. Visual resource change and viewer response to this condition are high. The visual resource change between existing and proposed conditions result in a rating change of high. The viewer response rating is slightly less, ranking at a moderately high level of change. The combined ranking shows a visual impact rating of high. Landscaping to mitigate the visual impacts caused by the spread diamond interchange is highly warranted.

Figure 2-12 Key Views 2E and 2F—State Route 132 and Realigned Gates Road Spread Diamond Interchange

Existing view looking north from State Route 132 at intersection near realigned Gates Road.

Proposed view looking north towards the spread diamond interchange and realigned Gates Road undercrossing for the new Alternative 2 alignment. Image shows possible agricultural themed landscape treatment.

Subunit 2: Existing State Route 132 Alignment (Build Alternatives 3 and 4)

Key Views 3A and 4A—Intersection at Dakota Avenue and State Route 132

Proposed Project Features

Features at this key view for Alternative 3 and 4 will be a signalized intersection with 2 eastbound free right turn lanes. Drainage basins will be situated in the northeast, northwest and southwest quadrants. Given the relatively proximity and flat terrain of this location, views to the proposed signalized intersection will be visible to the highway neighbor residing on the northwest parcel across from the realigned Kansas Avenue frontage road. The land outside the proposed right-of-way is expected to remain with little disturbance from highway

construction activities. Areas that are disturbed will be treated with landscaping and wildflower seeding to screen views and compensate for any localized visual degradation.

Change to Visual Character/Quality

The change to visual character and quality is expected to be low. While the level of change is low it is still a negative change to existing visual resources. Construction of the proposed intersection increases scale and is more in character as an urban element than rural. This facility will also degrade visual quality as intactness and unity ratings drop. Overall, visual resources will diminish but only slightly from that of the existing condition.

Viewer Response

There is only one highway neighbor residing near the proposed intersection that will have direct and constant visual access. Views to the intersection from this location are less than 1/10 of a mile away. Due to the proximity and prominent visual access, visual exposure for this group is rated at moderate. Visual sensitivity is ranked moderately high due to the increase in viewer awareness and the understanding of local values and goals. The number of roadway users for Key View 3A, 4A, includes all 6 user groups. Viewer exposure is elevated as location and duration of views increase to account for proximity and slower travel speeds maneuvering this intersection. As speeds decrease, viewer exposure increases. Similarly, as drivers approach unfamiliar obstacles speeds tend to decrease and viewer awareness is heightened. The level of response related to viewer exposure and viewer sensitivity for these viewer groups at this location rank at moderately high.

Resulting Visual Impact

This intersection, while not totally uncommon to this region, adds an urban element to this specific location. Level of viewer exposure and sensitivity are elevated due to the higher averages for viewer location and number of viewers, combined with a minor increase in viewer duration. Viewer awareness at this location also adds to the overall moderately high viewer response rating. The visual resource change between existing and proposed condition is low, as the facility elevation is low, anchored to the flat terrain. Views to intersection accessories will be visual to highway neighbors and users and is reflected in a minor negative change for visual quality. Combined visual impact rating for this location is moderate. Landscaping will help screen views to the site and help minimize the negative visual effects of this urban element to better fit the existing character of the surrounding rural environment.

Figure 2-13 Key Views 3A and 4A—Intersection at Dakota Avenue and State Route 132

Existing view looking west at intersection of Kansas Avenue and North Dakota Avenue.

Typical signalized intersection for Alternatives 3 & 4 at Dakota Road.

Key Views 3B and 4B—Four-Way Signalized Intersection at Existing State Route 132 and Hart Road

Proposed Project Features

The proposed design feature at Key Views 3B and 4B for Build Alternatives 3 and 4 would be a four-way signalized intersection. The project footprint would more than double in size to that of the existing intersection with added travel lanes and turn lanes. The surrounding residential and business development is proposed to be removed by both Build Alternatives. Build Alternative 3 proposes a new alignment on the north side and next to the existing State Route 132 roadway. The existing State Route 132 alignment would become a frontage road to the south. Build Alternative 4 proposes a new alignment on the south side and next to the existing State Route 132 roadway. The existing State Route 132 alignment for Build Alternative 4 would also become a frontage road but on the north side of the new State Route 132 alignment. Drainage basins are proposed on the same side as the frontage road as dictated by Build Alternative. The land outside of the proposed right-of-way is expected to remain with little disturbance from highway construction activities. Disturbed areas would be treated with wildflower seeding to cover any possible degradation.

Change to Visual Character/Quality

The change to the visual character and/or quality is expected to be low with the implementation of the new Hart Road and State Route 132 intersection. The assessment for visual character shows a slightly lower ranking for the proposed condition because the overall rating scale, texture, and dominance diminish as a direct correlation to the increased size of the new facility. Visual quality also ranks low between the before and after scores. The before visual condition of this intersection rates low for intactness and unity because the location appears abrupt, disorganized, and unplanned, lacking visual integrity and a sense of coherency with the visual environment. The after ratings show a minor improvement for intactness and unity because the installation of this intersection would increase visual quality for the integrity and harmony of this location. The overall change to the visual resource rates low.

Viewer Response

There are two highway neighbors—one home and one agricultural business—for Build Alternative 3 and one highway neighbor—the same agricultural business—for Build Alternative 4. Highway neighbors for both Build Alternatives would be near the proposed project after construction and would have direct foreground visual access to the facility. The agriculture business would be in the northwest quadrant of the intersection, and the home would be in the southeast quadrant. There are also two other nearby homes to the north on Hart Road that would not have direct visual access to either Build Alternative because existing almond trees would screen views to the proposed four-way signalized intersection. Ratings for the highway neighbors with direct visual access rank as moderate because these neighbors already possess views of the existing intersection. The combination of moderate levels for viewer response and low levels of visual resource change makes the visual impact for these highway neighbors moderately low. The greater impact comes as visual response and resources are diminished by the increased highway footprint of the entire corridor when viewed collectively.

The number of highway users for Key Views 3B and 4B includes all six user groups previously identified. Each of these highway users ranks moderately high for proximity to the intersection at Hart Road and State Route 132, which translates to more viewer exposure. Viewer exposure would also be elevated because the duration of views may increase as drivers stop periodically at the traffic signals to accommodate crossing traffic from Hart Road. The slower average speeds increase viewer exposure and heighten viewer sensitivity. The level of response to viewer exposure and viewer sensitivity for these viewer groups is expected to rank at moderate.

Resulting Visual Impact

Intersections like Hart Road and State Route 132 are a common occurrence along the State Route 132 corridor. Despite the small degree of change from rural to urban, these facilities are not expected to cause a great deal of visual

change. The visual change that does occur would be rated low but positive as compared to the existing condition. Some of the visual change would occur with the removal of existing dwellings. Except for the two nearby viewers mentioned, all the existing building structures would be removed with Build Alternative 3, and only one building—the agricultural business in the northwest quadrant—would remain with Build Alternative 4, leading to a visual makeover of the intersection. With most urban elements removed, land use density would return to a characteristically sparse density. The visual resource change between existing and proposed conditions results in a composite rating change of low. The viewer response ranks a moderate level of change. The combined ranking shows a visual impact rating of moderately low. Landscaping would help to clean up areas degraded by construction activities. Landscaping would mainly consist of wildflower seeding with some tree plantings recommended.

Figure 2-14 Key Views 3B and 4B—Four-Way Signalized Intersection at Existing State Route 132 and Hart Road

Existing view looking west at intersection of Hart Road and State Route 132.

Typical signalized intersection for Alternatives 3 & 4 at Hart Road and State Route 132

Key View 3C—Representational View of the New State Route 132 Expressway Alignment

Proposed Project Features

The proposed design feature at Key View 3C for Build Alternative 3 is a new four-lane expressway with a 46’ wide vegetated center median and nearby frontage road. Build Alternative 3 proposes the construction of a frontage road next to the existing Maze Boulevard alignment on the south side of the new expressway. Signalized intersections are proposed at North Dakota Avenue/State Route 132 West Freeway/Expressway, Maze Boulevard/South

Dakota Avenue, Hart Road, and realigned Gates Road/Paradise Road. The proposed expressway and frontage road would be about 270 feet wide. The elevation of the proposed roadway is expected to be slightly above the original flat terrain. Disturbed areas would be treated with landscaping and wildflower seeding to mitigate for any visual degradation. Landscape treatment within the construction footprint is highly recommended to reflect the existing visual agricultural character of the corridor.

Change to Visual Character/Quality

The change to the visual character for this location is expected to be moderately low. The construction of the expressway would have negative visual impacts because the corridor footprint would nearly triple in size as compared to the existing Maze Boulevard footprint. Many homes and businesses would be removed as part of the new roadway construction. However, as buildings are removed, color and continuity ratings would increase or remain the same as these visual attributes return to a more rural state. The change to visual quality would also be slightly impacted because scenes would become more characteristic of the regional landscape with fewer dwellings. Vividness would remain high while intactness and unity would suffer minor decreases as the increased project footprint takes its toll. The composite change to visual resources ranks moderately low.

Viewer Response

There are about 30 highway neighbors who live along or near the proposed project site that would directly or indirectly be impacted by this project. Many of those that live on the north side of State Route 132 would be directly impacted because dwellings would be removed to make way for the new construction. Those highway neighbors remaining on the north side and those currently living and expected to stay on the south side of State Route 132 would be visually impacted because most would have direct visual access to the newly expanded roadway footprint. These highway neighbors include residential housing, commercial businesses, and industrial operations. Many living next to the new expressway and frontage road would have direct foreground visual access. Some nearby highway neighbors would have direct middle-ground visual access, while the remaining would be screened from views to the roadway by existing orchards. Together, this group would have a moderate level of viewer exposure and sensitivity.

The number of roadway users for Key View 3C includes all six user groups previously identified. Overall, viewer exposure is moderate for these highway users due to viewer proximity, the number of viewers, and the slight increase in the duration of views. Viewer sensitivity for highway users also ranks at moderate. The combined ranking for these users is moderate.

Resulting Visual Impact

The proposed expressway for Build Alternative 3 would triple the existing Maze Boulevard footprint, changing the visual simplicity of the project area. While roadways like this are common to this corridor, they seem nontypical and are perceived as though another segment of the rural character is compromised, leaving more urban marks on the landscape. The analysis shows a negative degree of change to various visual resource attributes. The lack of negative values for color and continuity keeps the overall post-construction rating at moderately low. Visual exposure and sensitivity rank at a moderate value for the overall levels of response to these new visual attributes. The combined ranking shows a visual impact rating of moderate. Landscaping to mitigate the visual impacts caused by expressway construction is highly warranted.

Figure 2-15 Key View 3C—View of the New State Route 132 Expressway Alignment

Existing condition State Route 132 looking west.

Typical frontage road adjacent to State Route 132 for Alternative 3 Looking West.

Key View 3D—State Route 132 and Realigned Gates Road Four-Way Signalized Intersection

Proposed Project Features

The proposed design feature at Key View 3D for Build Alternative 3 would be a four-way signalized intersection with street lighting and highway accessories. The project footprint at this location would increase slightly as compared to the existing intersection. The existing Gates Road and State Route 132 intersection would shift about 1,000 feet to the east where the new intersection would be

located. Drainage basins would be built in all four quadrants to collect stormwater runoff. All areas disturbed by construction activities would be treated with landscaping and wildflower seeding to compensate for any visual degradation.

Change to Visual Character/Quality

The change to the visual character and/or quality for this location is not expected to cause an adverse visual impact. Facilities such as these are somewhat common throughout the State Route 132 corridor, and this intersection would not be much different than the existing Gates Road/Paradise Road and State Route 132 intersection that currently exists 1,000 feet to the west. An increase in visual intrusion is expected because a more urban type of facility is being introduced. It is because of this that the ratings show only a moderately low level of change to the visual environment.

Viewer Response

The four-way signalized intersection at Gates Road and State Route 132 is in a sparsely populated area inside the project limits. There are three highway neighbors near the proposed intersection—two homes and one dairy operation—and one highway neighbor—a mobile home park—next to the existing State Route 132 alignment south of the highway. This viewer group would have direct visual access to the proposed interchange at realigned Gates Road and State Route 132. The closest highway neighbor—the mobile home park—would be about 900 feet away from this intersection. Due to the flatness of the valley terrain and the flatness of the intersection profile, views to the intersection are not expected to dominate the viewshed but, at the same time, would be noticeable. North along Gates Road, views to the proposed intersection are also not expected to be dominant because the viewing distance would be nearly 2,000 feet away from the dairy operation and farther for the existing homes. Overall, this group would have a moderate level of exposure and sensitivity to the proposed four-way signalized intersection.

The number of roadway users for Key View 3D would include all six user groups previously identified. Viewer exposure would be moderate for these users due to viewer proximity and the number of viewers. Viewer exposure would also be elevated due to an increase in viewing duration because drivers would potentially be stopped for crossing traffic. Viewer sensitivity for highway users would be rated moderate. The total ranking for these users would be moderate.

Resulting Visual Impact

While the proposed four-way signalized intersection at Gates Road and State Route 132 is not typical to the State Route 132 corridor, it does add a more urban quality, which is not overly characteristic for this region. Changes to existing visual resources are expected. In addition to the expanded roadway surface, these changes would include increased roadway striping and roadway features. The change to visual resources would be ranked at moderately low.

Change in viewer response is ranked at a moderate level driven by increased viewer exposure and sensitivity due to highway neighbor proximity to this proposed location. The combined rating for resource change and viewer response is ranked as moderate for Key View 3D. Landscaping to reduce visual impacts caused by project construction is warranted.

Figure 2-16 Key View 3D—State Route 132 and Realigned Gates Road Intersection

Existing view looking west at intersection of Gates Road and State Route 132.

Typical signalized intersection for Alternatives 3 & 4 at Gates Road.

Key View 4C—View of the New State Route 132 Expressway Alignment

Proposed Project Features

The proposed design feature at Key View 4C for Build Alternative 4 would be a new four-lane expressway with a 46’ wide vegetated center median and nearby frontage road. Build Alternative 4 proposes the construction of a frontage road next to the existing Maze Boulevard alignment north of the new four-lane expressway. Signalized intersections are proposed at North Dakota Avenue/State Route 132 West freeway/expressway, Maze Boulevard/Dakota Avenue, Hart Road, and realigned Gates Road/Paradise Road. The proposed four-lane expressway and frontage road would be about 270 feet wide. The elevation of the proposed roadway would be slightly above the original flat terrain. Disturbed areas would be treated with landscaping and wildflower seeding to compensate for any visual degradation.

Change to Visual Character/Quality

Like Build Alternative 3, changes to the visual character for this location are expected to be moderately low. The construction of the proposed four-lane

expressway would have negative visual impacts because the proposed corridor footprint would nearly triple in size as compared to the existing Maze Boulevard footprint. Also, many homes and businesses would be removed as a part of the new roadway construction. However, as buildings are removed, color and continuity ratings would increase or remain the same because these visual attributes would return to a more rural state. The change to visual quality would also be slightly impacted because scenes would become more characteristic of the regional landscape with fewer dwellings. Vividness would remain high while intactness and unity would suffer minor decreases as the project footprint increases. The total change to visual resources would rank moderately low.

Viewer Response

The project would directly or indirectly impact about 30 highway neighbors who currently live along the proposed footprint. Removing dwellings to make way for new construction would directly impact many of those who live on the south side of State Route 132. Those highway neighbors living on the south side and those currently living and expected to remain on the north side of State Route 132 would be visually impacted because most would have direct visual access to the newly expanded roadway footprint. All of these views would be foreground views. These highway neighbors include residential housing, commercial businesses, and industrial operations. Three highway neighbors who live near the proposed four-lane expressway would have direct middle-ground visual access while the remaining highway neighbors would be screened from views to the roadway by existing orchards. Collectively, this group would have a moderate level of viewer exposure and sensitivity.

The number of roadway users for Key View 4C would include all six user groups previously identified. Overall, viewer exposure would be moderate for these users due to viewer proximity, the number of viewers, and the slight increase in the duration of views. Viewer sensitivity for highway users would also rank at moderate levels. The combined ranking for these users would be moderate.

Resulting Visual Impact

Similar to Build Alternative 3, the four-lane expressway for Build Alternative 4 would triple the existing Maze Boulevard footprint and change the visual simplicity of the project area. The roadway may seem nontypical and may be perceived as though another segment of the rural character is compromised, leaving a more urban mark on the landscape. The analysis shows a negative degree of change to visual resources. Still, it is the lack of negative values for color and continuity that keep the overall post-construction rating at moderately low. Visual exposure and sensitivity rank at a moderate value for the overall levels of response to these new visual attributes. The combined average of each ranking shows a visual impact rating of moderate. Landscaping to reduce the visual impacts caused by expressway construction is highly warranted.

Figure 2-17 Key View 4C—View of the New State Route 132 Expressway Alignment

Existing condition State Route 132 looking east.

Typical frontage road adjacent to State Route 132 for Alternative 4 looking east.

Key View 4D—State Route 132 and Realigned Gates Road Four-Way Signalized Intersection

Proposed Project Features

The proposed design feature at Key View 4D for Build Alternative 4 would be a four-way signalized intersection with street lighting and highway features. The project footprint would increase slightly as compared to the existing intersection. The existing Gates Road and State Route 132 intersection would shift about 1,000 feet to the east where the new intersection would be located. Drainage basins would be built in all four quadrants to receive stormwater runoff. All areas disturbed by construction activities would be treated with landscaping and wildflower seeding to compensate for any visual degradation.

Change to Visual Character/Quality

The change to the visual character and/or quality for this location is not expected to result in adverse visual impacts. Facilities such as these are somewhat common throughout the State Route 132 corridor, and this proposed facility is not much different than the current Gates Road/Paradise Road and State Route 132 intersection that currently exists 1,000 feet to the west. An increase in visual intrusion is expected as a more urban type of facility is introduced. It is because of this that the ratings show only a moderately low level of change to the visual environment.

Viewer Response

The State Route 132 and realigned Gates Road intersection would be in a sparsely populated area inside the project limits. There are three highway neighbors near the proposed intersection—two homes and one dairy operation. Another highway neighbor—a mobile home park—that is next to the existing State Route 132 alignment on the south side of the highway is expected to be removed by the roadway project. The remaining highway neighbors would have direct visual access to the proposed State Route 132 and realigned Gates Road intersection.

The two closest highway neighbors—nearby homes—are nearly 2,000 feet away from the proposed intersection and would have direct visual access. However, due to the flatness of the valley terrain and the intersection profile, views to the intersection are not expected to dominate the viewshed but, at the same time, would be noticeable. North along Gates Road, views to the proposed intersection would not be dominant. This is due to the viewing distance being nearly 2,000 feet between the dairy operation and the proposed intersection. Overall, this group would have a moderate level of exposure and sensitivity to the new intersection.

The number of roadway users for Key View 4D would include all six user groups previously identified. Overall, viewer exposure would be moderate for these users due to viewer proximity and the number of viewers. Viewer exposure would also be elevated due to an increase in viewing duration because drivers would be stopped for crossing traffic. Viewer sensitivity for highway users would be rated at moderate. The total ranking for these users would be moderate.

Resulting Visual Impact

While the proposed State Route 132 and realigned Gates Road four-way signalized intersection would not be typical to the State Route 132 corridor, it would add a more urban quality. For this reason, changes to existing visual resources are expected. Changes would include increased roadway striping and roadway features. The change to visual resources would be ranked at moderately low. Change in viewer response would increase because viewer exposure and sensitivity would rank at moderate levels for this location. The combined rating for resource change and viewer response would be ranked as moderate for Key View 4D. Landscaping to compensate for the visual impacts caused by project construction will be warranted.

Figure 2-18 Key View 4D—State Route 132 and Realigned Gates Road Four-Way Signalized Intersection

Existing view looking west at intersection of realigned Gates Road and State Route 132.

Typical signalized intersection for Alternatives 3 & 4 at Realigned Gates Road.

Light and Glare

Roadway lighting is expected for each Build Alternative. New lighting is likely to occur at proposed bridge overcrossings, roundabout facilities, freeway ramps, new signalized intersections, and at frontage road intersections. Lighting would include, but would not be limited to, streetlights, signal lights, traffic beacons, and flashing stoplights. This lighting would be expected to produce nighttime glare and reduce night sky visibility to nearby highway neighbors. Several highway neighbors would have direct foreground views to these facilities and some with direct middle-distance views.

Temporary Construction Impacts

Visual impacts due to the contractor's operations such as night lighting, dust, temporary structures, hauling materials, contractor staging and stockpile yards, and detours are expected to occur with a construction project of this magnitude. The most noticeable impact would be the removal of orchard trees and extensive grading work associated with all Build Alternatives. While these items would be considered temporary impacts, the removal of trees would remain a permanent visual impact to make way for new roadways. Temporary construction visual impacts are expected to be considerable.

Avoidance, Minimization, and/or Mitigation Measures

This section describes avoidance, minimization, and/or mitigation measures to address specific project visual impacts. These measures would be designed and implemented with the concurrence of the District Landscape Architect. The following mitigation measures would be implemented to address impacts

associated with transitioning from agricultural landscape to transportation use, additional and wider pavement areas, and implementing large structures.

Build Alternative 1—New Roadway Alignment

North Dakota Avenue Bridge Overcrossing Structure

VR-1: Provided water is available, install landscape screening for nearby highway neighbors with direct visual access to the bridge overcrossing.

VR-2: Design landscaping with drought-tolerant plant material to reflect the existing agricultural character, such as regular linear patterning to resemble orchard and row crop plantings.

VR-3: Landscaping must be designed to block views to proposed street and bridge lighting to eliminate or reduce nighttime glare.

VR-4: Structural side slopes should be designed with gradients no steeper than 4 to 1. Contour grading is encouraged to create a natural effect.

VR-5: Drainage basins should be designed using contour grading to create a naturalistic effect instead of rigid or hard edges.

VR-6: The bridge design should incorporate bridge aesthetics in the form of an architectural theme. The thematic design must reflect the strong agricultural heritage of the region.

Roundabout at Hart Road and Gates Road

VR-5: As previously stated.

VR-7: Provide low-growing, drought-tolerant landscape planting and non-irrigated grasses and wildflower seeding in all outside roundabout quadrants. Each of these quadrants is proposed to have drainage basins. Therefore, landscape planting should be positioned on basin slopes or above basin slopes and above the high-water mark. Wildflower seeding is allowed inside basins.

VR-8: Peripheral basin landscaping must reflect the existing agricultural patterning of the region.

VR-9: Provide agricultural themed vertical design features within the interior of the roundabout circle at Hart Road and Gates Road.

VR-10: Landscape treatment within the circular roundabout interiors should be predominately hardscape elements (e.g., textured paving) or inert construction materials (e.g., rock cobble or gravel mulch.) or a combination of both. On a limited basis, drought-tolerant trees, low-growing shrubs, or groundcover may be permissible. The District Landscape Architect must approve the design.

VR-11: Accent textured paving must be added to roundabout approach medians and around the outer edges of the roundabout circles. Paving patterns must reflect the agricultural character of the region (e.g., small or medium rock cobble, old world street cobble, or stamped concrete). Textured paving should strive to use earth tone color hues, typical of this area. Paving patterns and colors should match hardscaping materials proposed within roundabout interior designs. The District Landscape Architect must approve the design.

Expanded Signalized Intersection at Gates Road/Paradise Road and State Route 132/Maze Boulevard

VR-5 and **VR-7**, as previously stated.

Lighting

VR-12: Where possible, design landscaping to screen direct views to project lighting from locations where there are views to facility lighting. Landscaping must not be used to screen lighting to roadway surfaces. To minimize nighttime glare, use lighting that directs illumination downward. Use lights with shields, if possible.

Build Alternative 2—New Roadway Alignment

Two Travel Lanes in Each Direction with a Vegetated Center Median

VR-13: Install low-growing, non-irrigated grasses, and wildflower erosion control seeding to the vegetated center median and outside shoulders.

VR-14: Where possible, fencing should fit the visual character of the area (e.g., barbed wire), be see-through, and where feasible, low in height.

North Dakota Avenue Bridge Overcrossing Structure

VR-1, VR-2, VR-3, VR-5, and **VR-6**, as previously stated.

Spread Diamond Interchanges with Ramp Roundabouts at Hart Road and Realigned Gates Road

VR-3, VR-4, VR-5, VR-6, VR-10, and **VR-11**, as previously stated, plus:

VR-15: Landscape planting is highly warranted at both spread diamond interchanges to soften the adverse visual impacts of these two large non-visually characteristic structures. Landscape patterning should resemble the existing agricultural landscape character of the region.

VR-16: Tree planting should be patterned after the existing orchard plantings that surround the area. This type of planting would carry on the visual rhythm, which is prolific within the area, as well as help the built environment fit in better with the existing agricultural character.

VR-17: Low-growing, drought-tolerant landscape plantings, which may need to be planted in locations where sight distance requirements must be maintained,

should also be planted with this same grid patterning to carry on the agricultural theme.

Expanded Signalized Intersection at Gates Road and State Route 132
VR-5 and **VR-7**, as previously stated.

Lighting
VR-12: As previously stated.

Build Alternatives 3 and 4—Existing State Route 132 Roadway Alignment
Two Travel Lanes in Each Direction with a Vegetated Center Median
VR-13 and **VR-14**, as previously stated, plus:

VR-18: Where possible and where there is sufficient right-of-way area, build earthen berms and landscape with a low-growing, non-irrigated grass and wildflower erosion control seeding between nearby highway neighbors and the expressway to minimize negative views to the roadway.

Expanded Signalized Intersection at North Dakota Avenue and State Route 132 West Freeway/Expressway, South Dakota Avenue and State Route 132/Maze Boulevard, Hart Road and State Route 132/Maze Boulevard, Realigned Gates Road/Paradise Road and State Route 132/Maze Boulevard, and Gates Road and State Route 132
VR-5 and **VR-7**, as previously stated.

Lighting
VR-12: As previously stated.

2.1.10 Cultural Resources

Regulatory Setting

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

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic

properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation. (36 Code of Federal Regulations 800) On January 1, 2014, the First Amended Section 106 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council on Historic Preservation's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program. (23 U.S. Code 327)

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 (in Section 4(f) terminology—historic sites). See Appendix A for specific information about Section 4(f).

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

California Public Resources Code Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the National Register of Historic Places listing criteria. It further requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the California State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register of Historic Places or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with

California Public Resources Code Section 5024 are outlined in a Memorandum of Understanding between Caltrans and the California State Historic Preservation Officer, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 Programmatic Agreement will satisfy the requirements of California Public Resources Code Section 5024.

Affected Environment

The following section is based on the Archaeological Survey Report completed in January 2020, the Historical Resources Evaluation Report completed in March 2020, the Historic Property Survey Report completed in March 2020, and the Finding of Effect completed in May 2020. The reports can be found in Volume 3.

Record searches, literature reviews, map reviews, consultation with Native American and historical organizations, and a field survey were conducted in 2019 for the project. Additional background research was done through an examination of previous historic resource inventories and evaluation surveys and reports to assess the location of known historical resources for the project. Additional background research was done through the use of a commercial real estate database, a review of historical and current U.S. Geological Survey topographic maps, historic aerials, and other sources to confirm dates of construction of the historic-era resources.

The Native American Heritage Commission was contacted in July 2018. The commission consulted the Sacred Lands File it maintains but did not identify any Native American cultural resources near the project area. Project notification letters were sent to Native American groups and individuals identified on lists provided by the Native American Heritage Commission. The Native American Heritage Commission responded to Caltrans on July 17, 2018, stating that its Sacred Land Files failed to indicate the presence of Native American cultural resources in the immediate project area. The Tribal Historic Preservation Officer for the Buena Vista Rancheria of Me-Wuk Indians responded, stating that there may be concerns regarding the project and requested the latest copy of the Archaeological Survey Report for the proposed project. After coordination with the tribe’s Tribal Historic Preservation Officer and its natural resource director, there were no issues regarding the project.

Additionally, a topographic and historical map review and a California Cultural Resource Database search were conducted. The records search showed that numerous studies were conducted within the project locations; however, no previously recorded prehistoric Native American resources were found within the Area of Potential Effects.

Area of Potential Effects

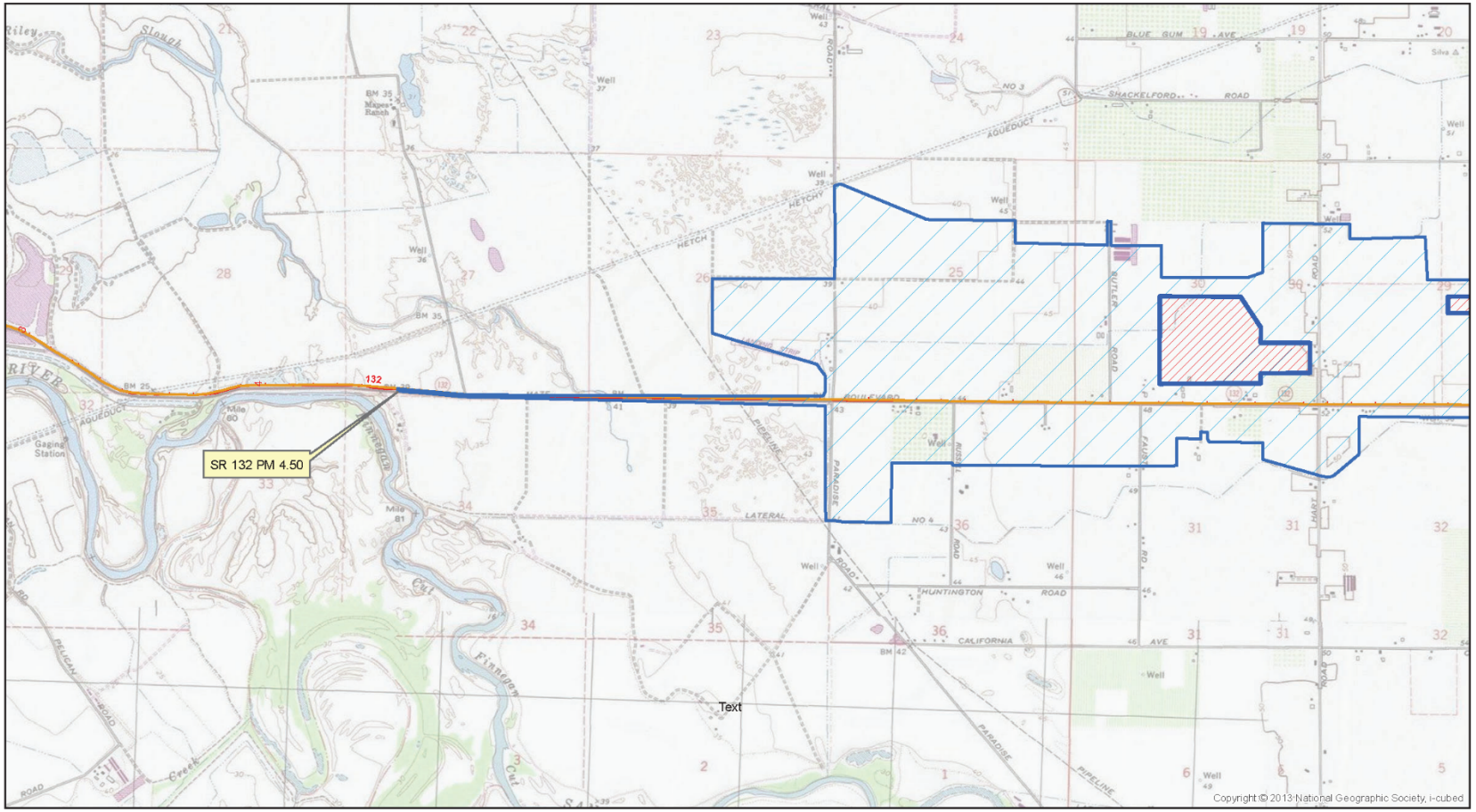
The Area of Potential Effects for the proposed project encompasses areas that project construction may affect directly or indirectly. The Area of Potential

Effects lies in a rural unincorporated area of Stanislaus County west of the city of Modesto and includes a mixture of agricultural, residential, and commercial buildings and complexes. The Area of Potential Effects also includes a Caltrans right-of-way on State Route 132, buildings, complexes, or linear features immediately next to the environmental study limit to account for possible indirect impacts. The Area of Potential Effects extends about 7 miles along State Route 132 (Maze Boulevard) starting at post mile 5.5 west of North Gates Road to post mile 11.5 just east of Dakota Avenue. The Area of Potential Effects also extends along Kansas Avenue (situated parallel and north of State Route 132) from Clark Road easterly to Dakota Avenue.

Archaeological Survey Area

The Archaeological Survey Area is a fieldwork study area within the Area of Potential Effects. It presents the results of the identification efforts conducted for a project. The Archaeological Survey Area, as shown in Figure 2-19 and 2-20 and sourced from the Archaeology Survey Report (2020), documents both present and absent archaeological survey areas; it does not evaluate sites. The Archaeological Survey Area demonstrates that Caltrans has made a reasonable level of effort to identify archaeological properties, commensurate with the scale and scope of the undertaking. For this proposed project, the vertical impact would reach a maximum depth of 10 feet throughout the majority of the Archaeological Survey Area, with a maximum width of 350 feet for the corridor.

Figure 2-19 Archaeological Survey Area

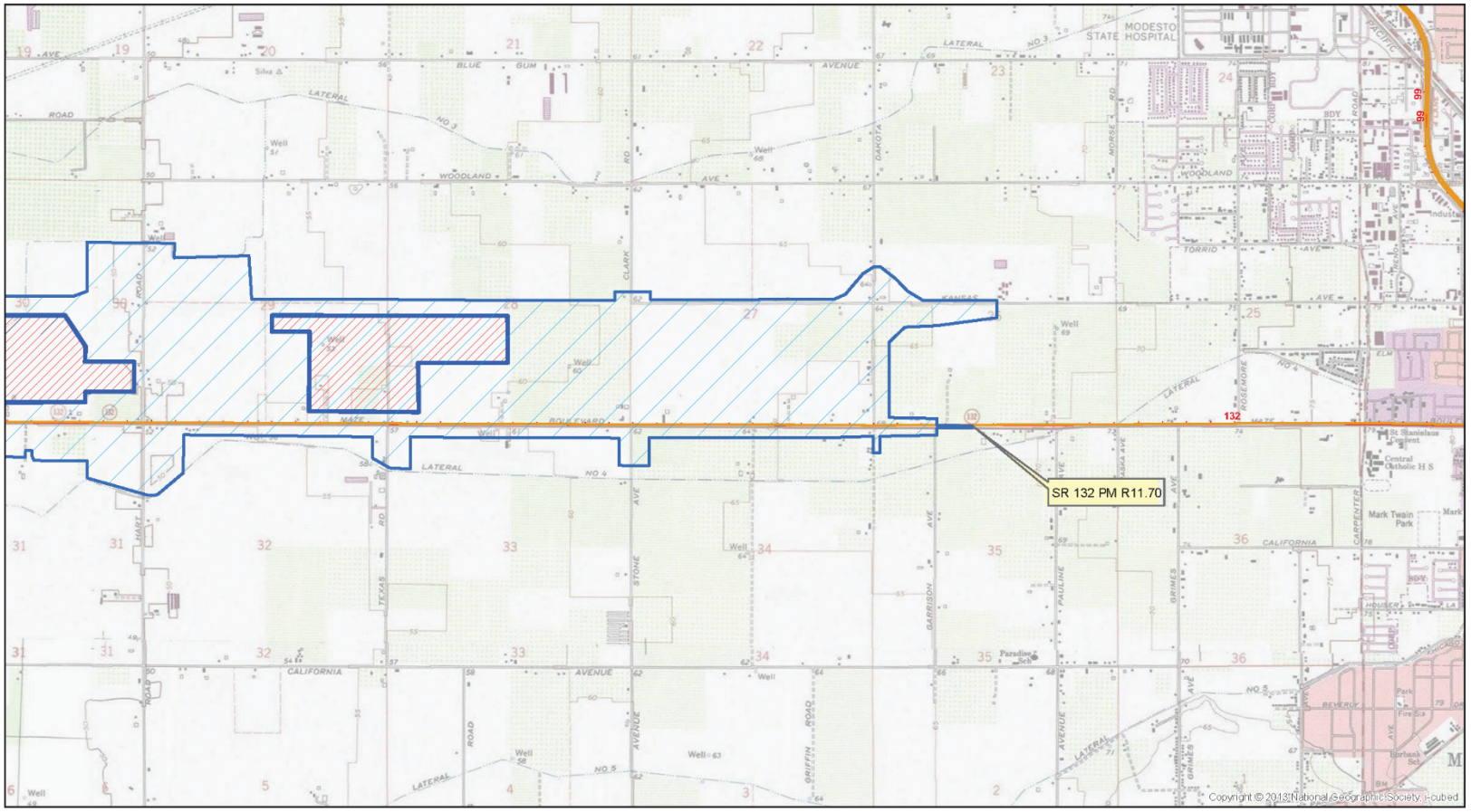


USGS 7.5' Topo Map	Year	Photo revised	Township	Range	Sections
SALIDA, California	1969	1987	3S	8E	26, 27, 28, 29, 30, 31, 32, 33, 34 & 35
RIPON, California	1969	1980, 1994	3S	8E	30 & 31
RIPON, California	1969	1980, 1994	3S	7E	25, 26 ,27 ,34, 35 & 36

Figure 2 a
Project Location Map
132 West Extension Improvements Project
10-STA-132
PM 4.50/R11.70
EA: 10-1E280
Project ID: 10-1500-0027

Source: Archaeological Survey Report (January 2020)

Figure 2-20 Archaeological Survey Area



0 0.25 0.5 1 1.5 2 Miles

1:24,000

Archaeological Survey Coverage Area (2,620 Acres)

Exclusion Area- Area Not Surveyed (275 Acres)

Caltrans

USGS 7.5' Topo Map	Year	Photo revised	Township	Range	Sections
SALIDA, California	1969	1987	3S	8E	26, 27, 28, 29, 30, 31, 32, 33, 34 & 35
RIPON, California	1969	1980, 1994	3S	8E	30 & 31
RIPON, California	1969	1980, 1994	3S	7E	25, 26 ,27 ,34, 35 & 36

Figure 2 b
Project Location Map
132 West Extension Improvements Project
10-STA-132
PM 4.50/R11.70
EA: 10-1E280
Project ID: 10-1500-0027

Source: Archaeological Survey Report (January 2020)

Archaeological Resources

Archaeological resources are any materials related to human life or activities that are at least 50 years of age and that are of archaeological interest. An intensive pedestrian survey was conducted from September 4, 2018, through July 10, 2019, and found that there were not any archaeological or historic archaeological sites in the project area. Additionally, a record search at the Central California Information Center showed that there have been 22 previous studies conducted within the project boundaries. There are no previously known prehistoric or historic archaeological resources within the project's Area of Potential Effects.

Historic Architectural Resources

All of the properties studied in the Historical Resources Evaluation Report were developed between the 1910s and mid-1970s, with just over half containing buildings and/or structures built during or before World War 2. All but one, an irrigation canal, consists of small farm complexes that have one or more homes, barns, sheds, and other ancillary agricultural buildings. In general, the homes' wood-frame structures were built in the Craftsman, Minimal Traditional, and Ranch architectural styles. Ancillary farm buildings consist of wood-framed and sided barns, wood-framed and metal-framed warehouse-type buildings with metal siding, and metal-framed pole barns. All buildings employ typical Twentieth Century construction methods and materials. Some complexes have been altered by the construction of modern buildings and/or alterations such as replacement windows and doors.

Two previously recorded historic resources were identified—the San Joaquin Pipelines and the Modesto Irrigation District's Butler Ditch. As shown in Figure 2-21, Caltrans has considered the Butler Ditch, as part of the Modesto Irrigation District, to be eligible for inclusion in the National Register of Historic Places for the purposes of this project and is a historical resource for the purposes of CEQA. Built in 1906, the Butler Ditch is a concrete-lined irrigation canal that is about 4.5 miles long and extends between Modesto Irrigation District's Lateral Number 3 and Lateral Number 4 in the western half of the Area of Potential Effects. Caltrans consulted with the State Historic Preservation Officer regarding other properties in the APE evaluated for this project and determined through consensus in a letter received April 22, 2020 that they were not eligible resources. Letter from the State Historic Preservation Officer can be found in Appendix G.

Figure 2-21 Butler Ditch Canal Within the Vicinity of the Project Area

Source: Historic Resource Evaluation Report (February 2020)

As one of the earliest canal systems in Stanislaus County and the San Joaquin Valley, and the second irrigation district established under the Wright Act of 1887, the Modesto Irrigation District played a critical role in the development of agriculture in Stanislaus County. The Modesto Irrigation District is considered significant under National Register of Historic Places Criterion A/California Register of Historical Resources Criterion 1 at the local level and is assumed eligible for the National Register of Historic Places for purposes of this project and is a historical resource for the purposes of CEQA. The Modesto Irrigation District (to which the Butler Ditch is a contributing factor) is therefore considered a historical resource under California Environmental Quality Act and a Section 4(f) Resource. Appendix A contains a Section 4(f) De Minimis Evaluation.

Environmental Consequences

There are historic properties protected by Section 4(f) of the Department of Transportation Act of 1966 within the project vicinity. However, this project will not "use" those properties as defined by Section 4(f). Please see Appendix A under the heading "Resources Evaluated Relative to the Requirements of Section 4(f)" for additional details.

Archaeological Resources

There are no previously known prehistoric or historic archaeological resources within either of the four Build Alternatives. If archaeological resources are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the county coroner should be contacted. If the coroner thinks the remains are Native American, the coroner would notify the Native American Heritage Commission, who, per Public Resources Code Section 5097.98, would then notify the Most Likely Descendant. At this time, the person who discovered the remains would contact Caltrans' cultural resource specialist so that they may work with the Most Likely Descendant on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Historic Architectural Resources

The Butler Ditch is the only property within the proposed project study area that is a historic property protected by Section 4(f) of the Department of Transportation Act of 1966. The Butler Ditch was found eligible as a contributor to the Modesto Irrigation District at local significance for its involvement in agriculture in Stanislaus County.

Build Alternatives 1 and 2 would impact Butler Ditch due to the construction of piped or box culvert crossings. Under Build Alternative 1, the project proposes a crossing at two locations: post miles R6.25 and R7.82. Under Build Alternative 2, two crossings are proposed at post miles R6.75 and R7.82. Furthermore, the project would impact the Butler Ditch at these crossings as detailed in Volume 2, Appendix A.

Build Alternatives 3 and 4 would have no impact on Butler Ditch because they do not have proposed crossings over the canal. The Modesto Irrigation District system and its contributing features would not be impacted.

In May 2020, Caltrans requested concurrence from the State Historic Preservation Officer for a No Adverse Effect without Standard Conditions determination on the Modesto Irrigation District for both Build Alternatives 1 and

2. On June 26, 2020, Caltrans received a letter of concurrence from the State Historic Preservation Officer stating that the proposed project would not result in an Adverse Effect relative to the Modesto Irrigation District (Butler Ditch). Letter of concurrence from the State Historic Preservation Officer can be found in Appendix G.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following minimization measures would reduce any adverse impacts caused by construction to the Butler Ditch:

CR-1: A principal architectural historian would review construction plans as developed and monitor construction activities associated with the Modesto Irrigation District.

CR-2: The State Historic Preservation Officer would be notified immediately if any significant changes are made to the construction plans or during construction activities that have the potential to adversely impact the Modesto Irrigation District or any of its contributors

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

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

To comply, the following must be analyzed:

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

The base floodplain is defined as "the area subject to flooding by the flood or tide having a 1 percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

Affected Environment

The following section is based on the State Route 132 Location Hydraulic Study that was completed in October 2019 and a Stormwater Data Report that was

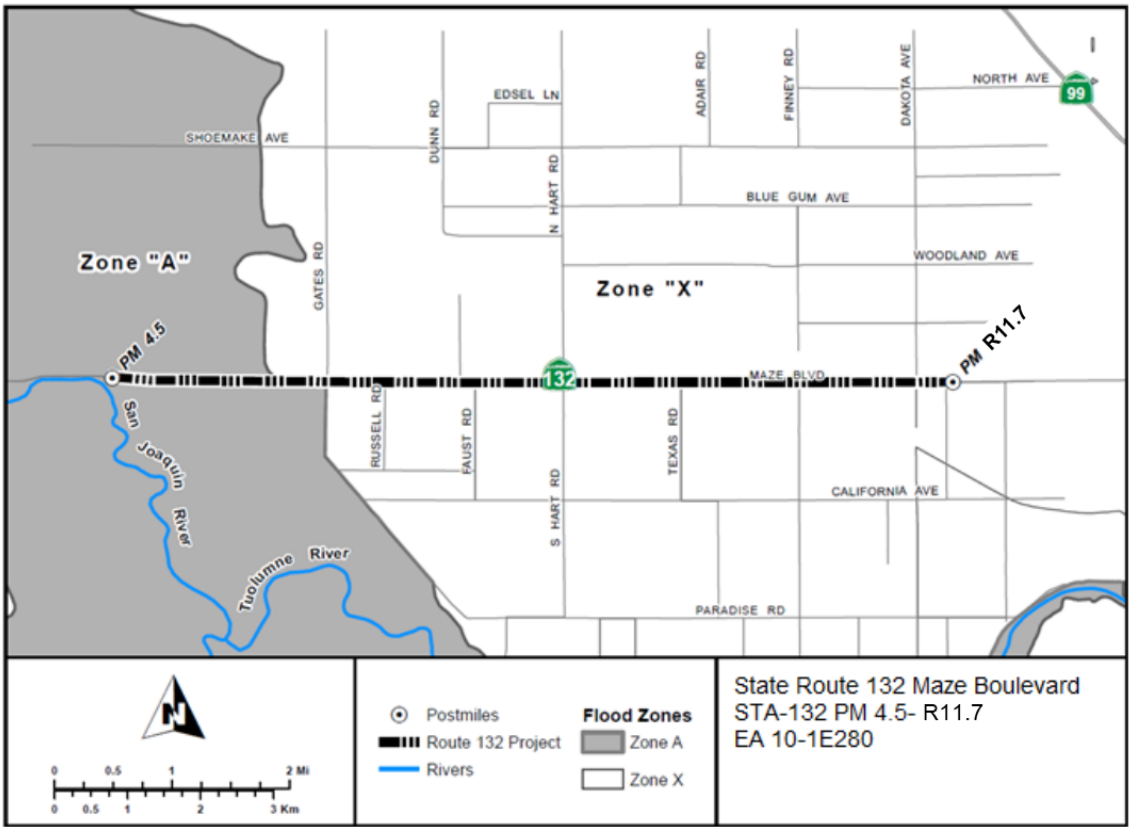
completed in June 2015. Additionally, a Preliminary Drainage Report was completed in June 2020. The reports can be found in Volume 3.

Floodplains have natural and beneficial values, which include, but are not limited to, supporting wildlife, scientific study, outdoor recreation, and agriculture, but also providing moderation of floods, water quality maintenance, groundwater recharge, and natural beauty.

The proposed project area is in California's Central Valley Basin, the largest hydrologic basin in the state. The San Joaquin River borders the south side of State Route 132 (Maze Boulevard) at post mile 4.4. The San Joaquin River's two main tributaries are the Stanislaus River, which is about 3 miles north of the project area, and the Tuolumne River, which is about 4 miles south of the project area. In general, the proposed four Build Alternatives would be incorporated within the San Joaquin watershed.

As illustrated in the Federal Emergency Management Agency Flood Insurance Rate Map Number 06099C300E and 06099C325E for Stanislaus County (Location Hydraulic Study 2019), the majority of the project area is within Zone X, which is determined to be outside the 0.2 percent annual chance floodplain, 500-year frequency (see Figure 2-22). Zone X represents most of the proposed locations for the four Build Alternatives. The remaining project area is within Zone A on the western end of the project limits, where all four Build Alternatives are within a 1 percent annual chance floodplain. Caltrans' Maintenance Crews have never experienced flooding or drainage issues within the proposed project limits.

Figure 2-22 Flood Insurance Rate Map of the Proposed Project Location



Environmental Consequences

The Federal Highway Administration measures flood risk by assessing the potential for property damage upstream and downstream of the facility, damage or loss of the proposed facility, the potential for interruption of traffic, or potential for loss of life during the service life of the facility.

Build Alternatives

Roadway improvements are proposed for all four Build Alternatives from post miles 4.5 to 6.3 within the 1 percent annual chance (100-year frequency) floodplain. The proposed roadway improvements would include restriping pavement delineations, electrical works, and cold plane and overlay for shoulder widening. The proposed work, however, would not increase in the base floodplain elevation, change the road profile or alignment, or alter the natural flow of the floodplain. Therefore, the proposed project is not expected to impact the nature of the floodplain. All four Build Alternatives would increase the area of impervious surfaces. The existing impervious surface area is estimated to be 50 acres, and the impervious surface area after the completion of the project is estimated to be 100 acres for the expressway for Build Alternatives 1, 3, and 4, and 120 acres for the freeway/expressway for Build Alternative 2. The addition of impervious surfaces could affect the area's watershed through increasing the flow and volume of stormwater runoff.

Figure 2-23 Proposed Basins for Build Alternative 1

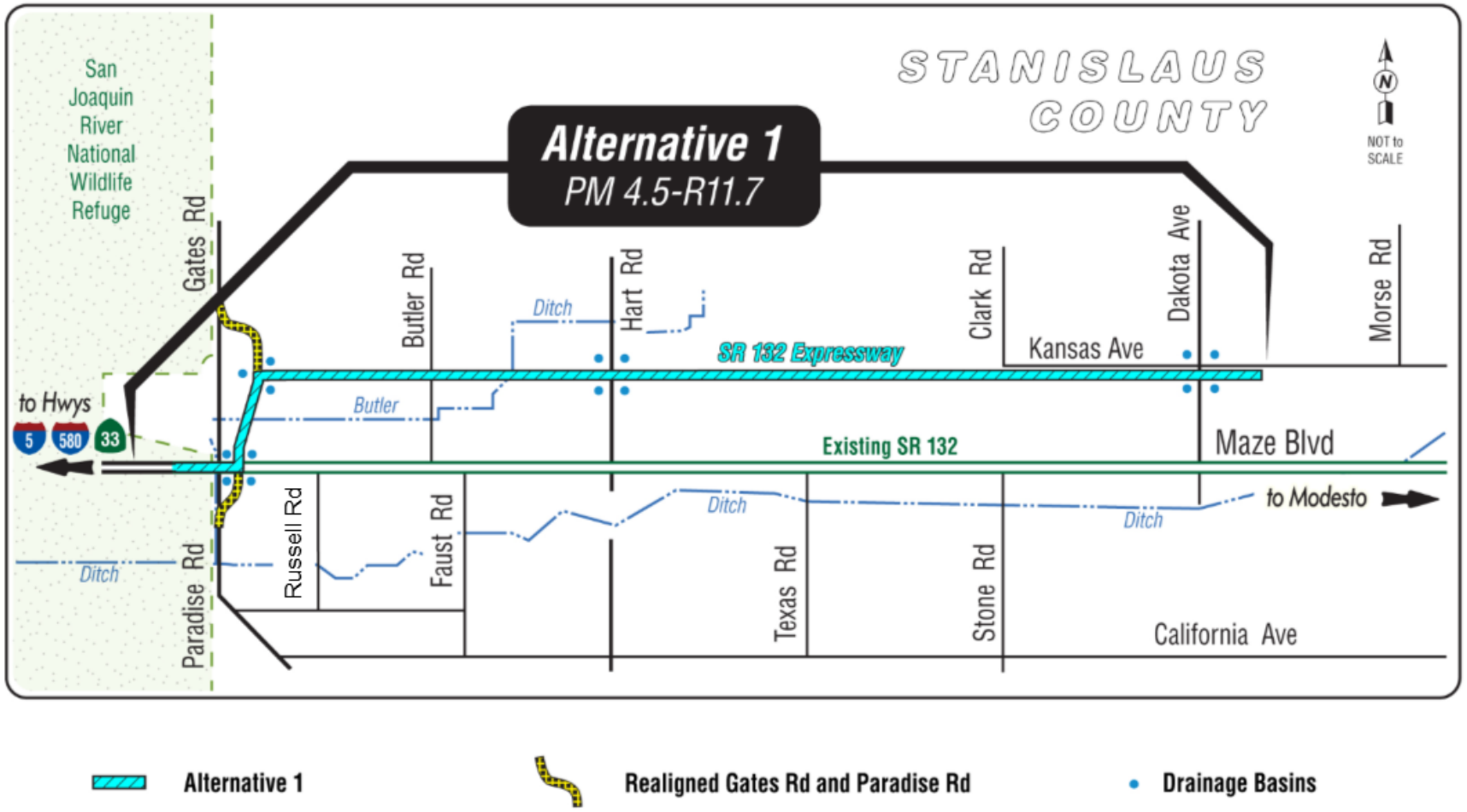


Figure 2-24 Proposed Basins for Build Alternative 2

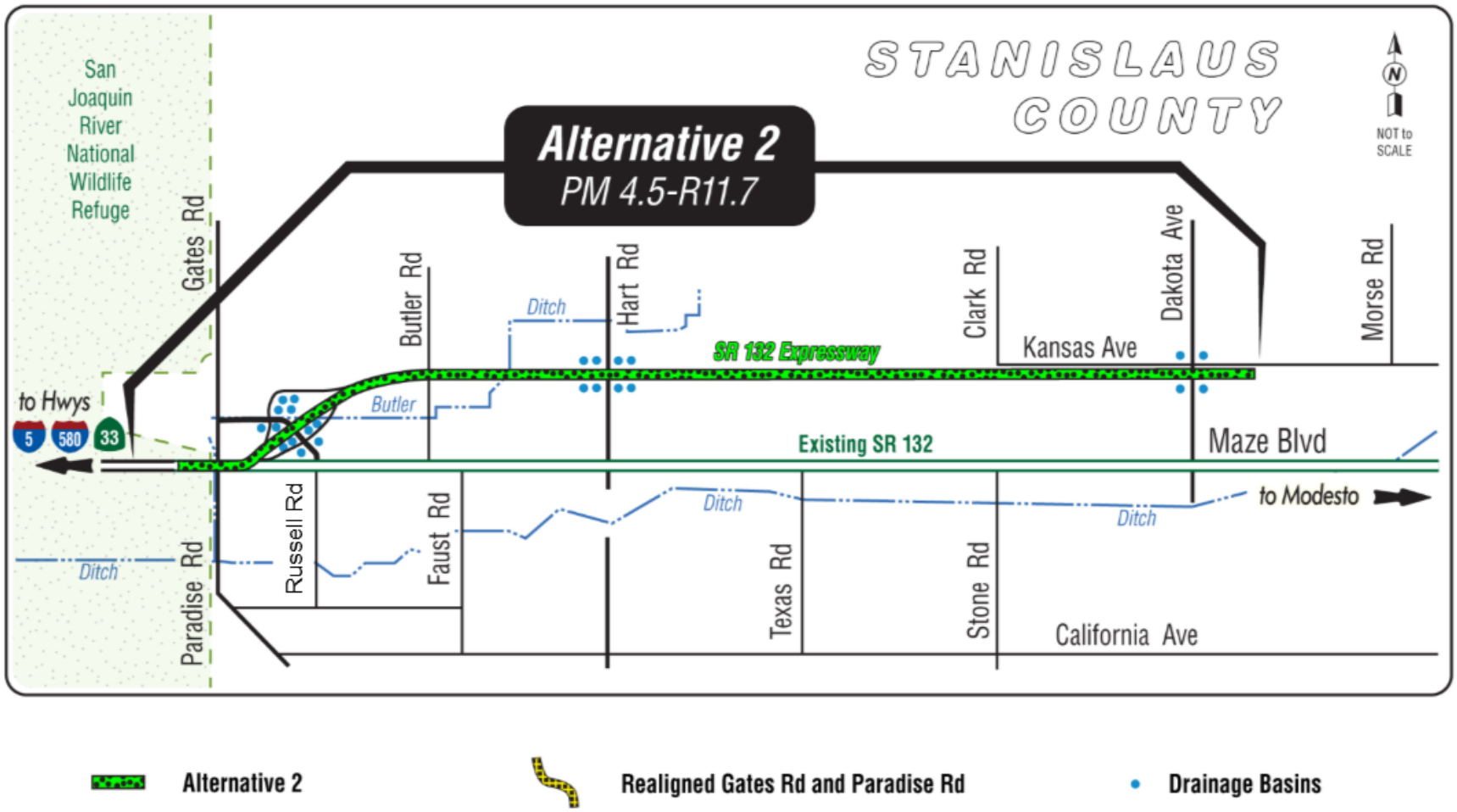


Figure 2-25 Proposed Basins for Build Alternative 3

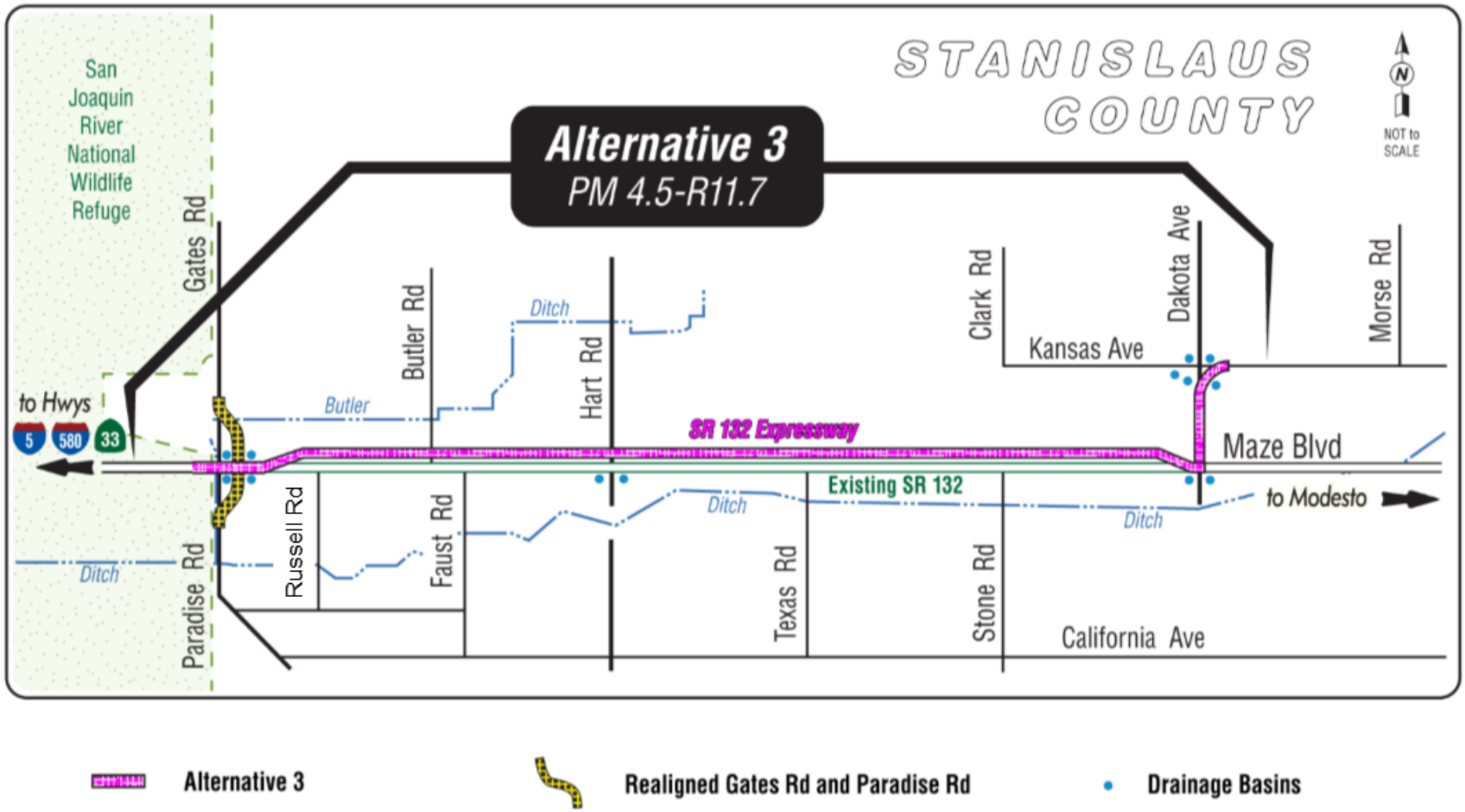
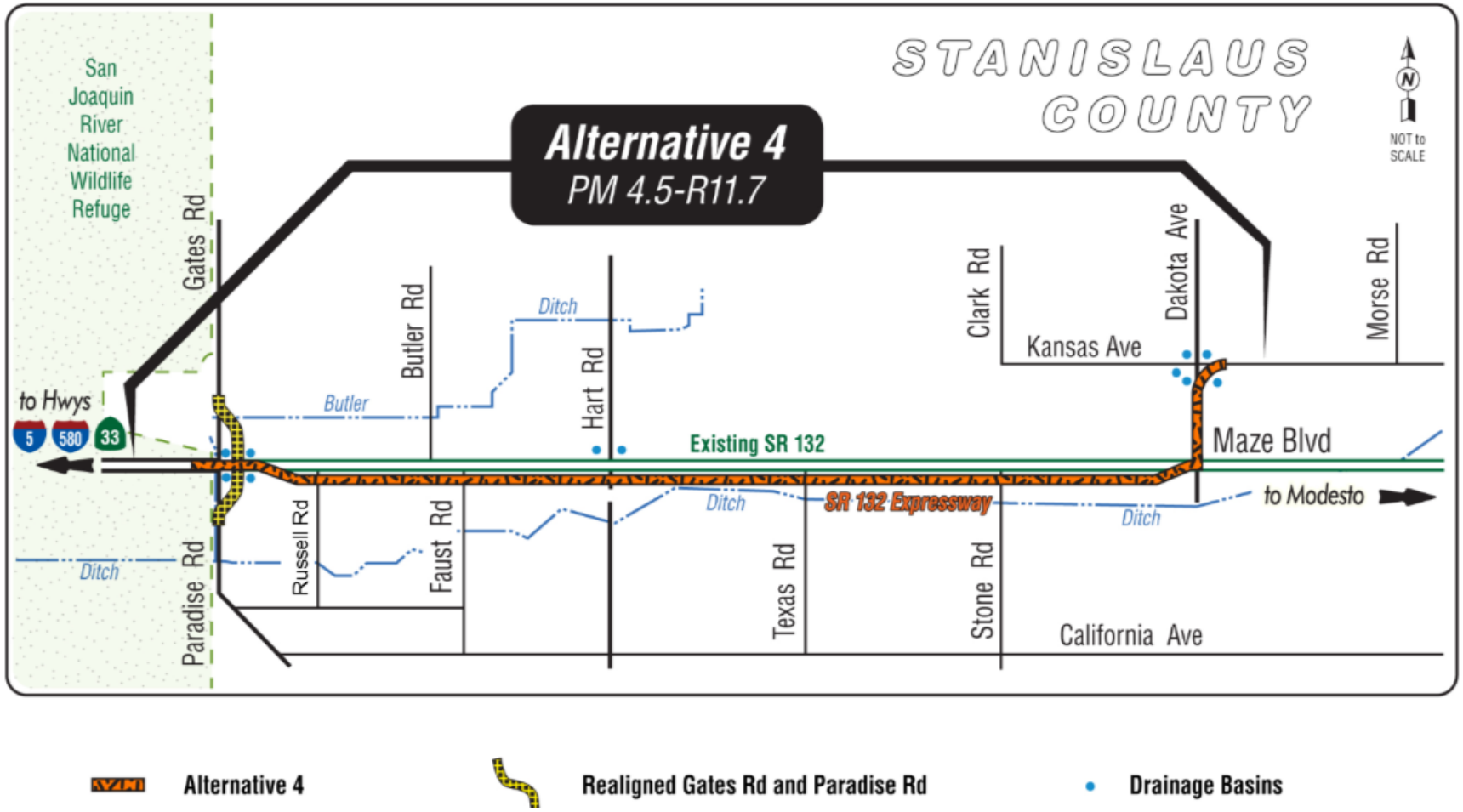


Figure 2-26 Proposed Basins for Build Alternative 4



The proposed project would involve the construction of a series of retention basins and drainage ditches within a Caltrans right-of-way to accommodate additional roadway runoff from increased impervious surfaces. Implementation of the project's drainage plan would not result in any runoff from the proposed new intersections, roundabouts, or interchanges to drain into nearby land. Proposed drainage ditches and retention basins within a state right-of-way would retain all surface water runoff.

The four Build Alternatives would not consist of a longitudinal encroachment or a significant encroachment on the base floodplain.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements or any additional impervious surfaces that would affect regional or local hydrology. Therefore, no hydrology or floodplain impacts would result from the No-Build (No-Action) Alternative.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of Best Management Practices are required to address project-related impacts during construction, operation, and maintenance of the proposed project. Examples of these minimization measures include:

HF-1: New retention basins and drainage ditches are proposed to increase the storage capacity to accommodate additional stormwater runoff. Implementation of Best Management Practices is required to address project-related impacts during construction, operation, and maintenance of the proposed project. Examples of these include:

- Preserving Existing Terrain: Provide desirable drainage courses and effective filtration.
- Soil Stabilization: Scheduling, preservation of existing vegetation, slope protection, slope interrupter devices, and channelized flow.
- Perimeter Control: Silt fences and inlet protection.

2.2.2 Water Quality and Stormwater Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

Pollutant Discharge Elimination System permit scheme. The following are important Clean Water Act sections:

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

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

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

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

sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

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

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

State Water Resources Control Board and Regional Water Quality Control Boards

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

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of stormwater discharges, including municipal separate storm sewer systems. A municipal separate storm sewer 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 stormwater, that is designed or used for collecting or conveying stormwater.” 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 system permit covers all of its rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Boards issues National Pollutant Discharge Elimination System permits for 5 years, and permit requirements remain active until a new permit has been adopted.

Caltrans’ municipal separate storm sewer system permit, Order Number 2012-0011-DWQ (adopted on September 19, 2012, and effective on July 1, 2013), as amended by Order Number 2014-0006-EXEC (effective January 17, 2014), Order Number 2014-0077-DWQ (effective May 20, 2014), and Order Number 2015-0036-EXEC (conformed and effective April 7, 2015), has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges; and
3. Caltrans’ stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices, 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 Stormwater Management Plan to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Statewide Stormwater Management Plan assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Statewide Stormwater Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest Statewide Stormwater Management Plan to address stormwater runoff.

Construction General Permit

Construction General Permit, Order Number 2009-0009-DWQ (adopted on September 2, 2009, and effective on July 1, 2010), as amended by Order Number 2010-0014-DWQ (effective February 14, 2011), and Order Number 2012-0006-DWQ (effective on July 17, 2012). The permit regulates stormwater discharges from construction sites that result in a Disturbed Soil Area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activities where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activities that result in soil disturbances of less than 1 acre are 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 Stormwater Pollution Prevention Plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

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

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are 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 benefitting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

The following section is based on the Water Quality Assessment Report that was completed in March 2020 and Preliminary Drainage Report that was completed in June 2020. The reports can be found in Volume 3.

The proposed project study area is within California's Central Valley Basin, the largest hydrologic basin in the state, which drains nearly two-thirds of California's water via the state's two largest rivers—Sacramento River and San Joaquin River. Streams in the northern part of the San Joaquin Valley Drainage through the San Joaquin River northward to the San Francisco Bay; the southern part of the valley is hydrologically closed. The San Joaquin River Basin is a region where the Central Valley Regional Water Quality Control Board enforces water regulations. The project area is surrounded by rivers on three sides, the San Joaquin River and its two main tributaries—the Stanislaus River north of the project area and Tuolumne River south of the project area. Beneficial uses for these three rivers, as defined in the Central Valley Regional Water Quality Control Board's Basin Plan, include protecting water quality for municipal, domestic, and agricultural uses; water contact recreation; non-contact water recreation; warm and cold freshwater habitat; wildlife habitat; and industrial services and supplies.

Surface Water Resources

The San Joaquin River National Wildlife Refuge is a protected area that surrounds a section of the San Joaquin River west of the project area. The land exists within the boundary of a historic floodplain and includes wetland, upland, and riparian habitats. Riparian vegetation in the refuge can act as a buffer zone

to trap and possibly treat pollutants downslope. The protection of water quality is a key issue for the area; however, the risk of water quality degradation is increasing due to continued growth in the area and agricultural production.

Within the location of Build Alternatives 1 and 2, there are two open surface water bodies—the Riley Slough and Butler Ditch.

The Riley Slough is a slough in the San Joaquin River National Wildlife Refuge and crosses under the existing State Route 132 (Maze Boulevard) at post mile 5.4. a reference to a map would improve the readability of this section. The Central Valley Regional Water Quality Control Board placed Riley Slough on a list of significantly improved streams because it reduces concentrations of selenium, which has been documented to be hazardous to wildlife. The proposed Build Alternatives would not impact the Riley Slough because no roadway, earthwork, or ditch work would occur between post miles 4.5 and 5.5. All major construction work would occur east of the existing Gates Road/Paradise Road intersection.

The Butler Ditch is a human-made irrigation canal that the Modesto Irrigation District manages and controls and transports its water to area farms via a gravity flow system.

The proposed Build Alternatives that would cross over the Butler Ditch at post miles R6.26 and R7.82 for Build Alternative 1 and post miles R6.74 and R7.82 for Build Alternative 2. These proposed crossings would be built with pipe culvert or concrete box culvert.

Groundwater Resources

The valley is a depression surrounded by mountain ranges to the east and west. Before California was developed, groundwater generally flowed toward the center of the valley and northward to the San Francisco Bay. The project area is underlain by the Modesto Groundwater Subbasin of the San Joaquin Valley Groundwater Basin, both of which occur within the San Joaquin River Hydrologic Region. Groundwater recharge for the Modesto Groundwater Subbasin is provided primarily from surface water infiltration. However, diversion of surface waters from streams and the development of groundwater facilities can significantly alter the natural flow system. Following the development of groundwater basins, percolating irrigation became the main form of groundwater recharge, and irrigation pumping became the main form of groundwater discharge in the San Joaquin Valley.

Groundwater within the project area can be found about 32 feet below the existing grade. Furthermore, groundwater elevation is dependent on non-rainy versus rainy seasons. Groundwater fluctuations are attributed to non-rainy versus rainy seasons, disparities in the creek or river levels, and/or irrigation or pumping of wells. The retention and subsequent infiltration of stormwater

collected because of the project are not expected to affect the elevation of groundwater beneath the project study area.

Within the project limits, stormwater typically drains off existing roadways, settles within shallow undefined roadside swales, and infiltrates the ground. In some isolated areas, runoff may drain into a series of rock wells under the roadway pavement. Build Alternatives 1 and 2 are proposed on a realignment of State Route 132, which is currently unpaved agricultural land with no drainage infrastructure. Build Alternatives 3 and 4 are next to the existing State Route 132 (Maze Boulevard), which has existing drainage infrastructure.

Environmental Consequences

Build Alternatives

The proposed project would consist mostly of building a new highway on a new alignment, which would result in new impervious surfaces. Consequently, the additional paved areas would affect the existing flow pattern of the local watershed by increasing the amount of additional water runoff. Build Alternatives 1, 3, and 4 would increase the volume of impervious surfaces by adding 50 acres of surface area each, increasing from the 50 acres existing to 100 acres total for the project. Build Alternative 2 would add about 70 acres of new impervious surface area, totaling 120 acres from the existing 50 acres of impervious surface area.

To prevent additional runoff from the proposed intersections, roundabouts, and interchanges onto nearby land, a series of proposed drainage ditches and retention basins would be built within the state right-of-way, which would retain nearly all surface water runoff. More details about the proposed basins and figures can be found in Section 2.2.1 Hydrology and Floodplain.

The proposed project area is within an area of minimal flood hazard; however, the new impervious surfaces would carry additional polluted surface runoff from exhaust emissions, pavement and tire wear, petroleum product drips, and corrosion of metals. Additionally, project construction activities may temporarily alter existing drainage patterns and result in temporary increases in the rate or amount of local surface runoff (onsite) and temporary flooding. However, the potential increase in the impervious surface area is not expected to cause flooding onsite or offsite. As mentioned in Section 2.2.1, the additional surface runoff anticipated from the project in relation to the existing scenario will not result nor add additional surface runoff to Riley Slough or Butler Ditch at the west end of the project.

After construction is complete, the existing drainage pattern and increased stormwater volume would be maintained with new and existing pipes, drainage inlets, and other storm facilities. Each basin within a state right-of-way would be designed to accommodate two 10-year, 24-hour storm events. Other conveyance ditches would be designed for lesser events to convey surface runoff to larger basins. Long-term impacts would include alterations to drainage

patterns on overcrossings and roadways. The proposed drainage is expected to be similar to the existing drainage system, with culverts directing runoff to roadside ditches.

Land-disturbing activities, such as grading and excavation during construction, would loosen the soil and could remove the protective cover of vegetation, reducing the natural soil resistance to the impact of rainfall erosion. The project design would include permanent erosion control elements to ensure that stormwater runoff does not cause soil erosion. Silt fencing and hay bales are some of the Best Management Practice measures that would be used to minimize the downstream turbidity. Efforts would be made to conduct most of the land-disturbing work outside of the typical wet season, which would minimize the potential for large rain events to mobilize loose sediment during construction. Biology surveys indicate that there would be impacts on wetlands; however, there are no impacts expected for special-status aquatic organisms as a result of any of the four Build Alternatives. Commonly used Best Management Practices consist of a wide variety of measures, including the installation of fiber rolls that can be installed to reduce pollutants in stormwater and other nonpoint-source runoff.

Landscaping activities for roadway vegetation could include the use of pesticides, herbicides, and fertilizers, which can be a source of nutrients that could cause algal blooms. However, impacts due to landscaping activities are expected to be temporary. To ensure that waterways are not exposed, pesticides, herbicides and fertilizers would be properly applied according to the regulations of the California Department of Pesticide Regulation. Runoff is not expected to directly discharge into nearby water bodies. It would, however, be directed to storm drain facilities via ditches and drained by a combination of new and existing pipes, drainage inlets, and other storm facilities. The surface water and groundwater quality would not be substantially degraded.

Butler Ditch Crossings

Build Alternatives 1 and 2 have proposed crossings over Butler Ditch at post miles R6.26, R6.74, and R7.82, so the water quality of the canal could be affected during all phases of construction. Grading, fill/exportation/moving, and laying asphalt could adversely affect the water quality of Butler Ditch if the construction site discharges disturbed sediment/soils into the stream channel and/or releases petrochemicals from construction equipment. Build Alternatives 3 and 4 would have no impact on Butler Ditch because they do not have proposed crossings over the canal.

No-Build (No-Action) Alternative

Under the No-Build (No-Action) Alternative, State Route 132 would remain in the existing configuration. Because this alternative would not alter existing conditions, no associated long-term impacts during operation and maintenance on water quality would result.

Avoidance, Minimization, and/or Mitigation Measures

Best Management Practices would be implemented based on guidance from several resources, including the Caltrans Stormwater Quality Handbook (California Department of Transportation 2017) and the California Stormwater Monitoring Guidance Manual. (Caltrans 2015) Implementation of water quality measures (management measures and Best Management Practices) is required to address project-related water quality impacts during construction, operation, and maintenance of the proposed project. As a result, no additional avoidance and minimization measures are needed to protect water quality and water resources.

Key management measures include the following:

- Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss.
- Minimize the potential for erosion via limiting land disturbances such as clearing and grading and cut/fill.
- Preserve any existing terrain providing desirable drainage courses or effective filtration.
- Limit disturbance of natural drainage features and vegetation.
- Prepare and implement a Stormwater Pollution Prevention Plan.
- Ensure proper storage and disposal of potentially hazardous materials.
- Incorporate pollution prevention into operation and maintenance procedures to reduce pollutant loadings to surface runoff.

Project design and construction must adhere to the requirements in the National Pollutant Discharge Elimination System permit, the Caltrans Statewide Stormwater Management Plan, the Caltrans Project Planning and Design Guide, and Best Management Practices. Implementation of the following avoidance and minimization measures would reduce impacts to water quality from stormwater runoff.

WQ-1: Stormwater Best Management Practices: To prevent or reduce impacts, temporary Construction Site Best Management Practices would be implemented for sediment control and material management. These could include cover, check dam, drainage inlet protection, fiber roll, silt fence, hydraulic mulch, concrete washout, and street sweeping.

Temporary Construction Site Best Management Practices are implemented during construction activities to avoid and minimize pollutant loads in stormwater/non-stormwater discharges.

Temporary Construction Site Best Management Practices strategies for this project may include:

- Soil Stabilization: scheduling, preservation of existing vegetation, slope protection, slope interrupter devices, and channelized flows;
- Perimeter control: silt fences and inlet protection;
- Tracking Controls: stabilized construction entrance and exits, and street sweeping;
- Wind Erosion Controls: temporary covers;
- Non-Stormwater Management: vehicle and equipment operations (fueling, cleaning, and maintenance), and material and equipment use; minimizing the accidental release and disbursement of petrochemicals;
- Waste Management and Materials Pollution Control: concrete washout, material delivery and storage, material use, stockpile management, spill prevention and control, soil waste management, hazardous waste and/or contaminated soil management, liquid waste management, and lead abatement and containment.
- Permanent Treatment Best Management Practices are post-construction quality control measures used to remove pollutants from stormwater runoff before being discharged from a Caltrans right-of-way. Permanent Treatment Best Management Practices would include biofiltration strips or swales with or without the soil amendment.

WQ-2: Stormwater Pollution Prevention Plan:

- Before the start of construction activities, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared by the contractor and approved by Caltrans. The Stormwater Pollution Prevention Plan would address potential temporary impacts via the implementation of appropriate Best Management Practices, such as those mentioned above, to the maximum extent practicable. The SWPPP would be uploaded to the California Storm Water Multiple Applications and Report Tracking System. A Stormwater Waste Discharge Identification would be obtained prior to soil disturbance.

WQ-3: Regulatory agencies may require additional measures that were not included in the Water Quality Assessment prepared for this project to ensure acceptable water quality is maintained. Any lawful requirements for additional avoidance, minimization, and/or mitigation measures would be contained in the permits obtained from all required regulatory agencies and included in the project.

The following permits are required for this project:

- A 401 Certification with the Regional Water Quality Control Board to ensure compliance with federal and state effluent limitations and water quality standards.
- A Section 1600 Streambed Alteration Agreement with California Department of Fish and Wildlife for activities that impact “waters of the State.”

- Requirements established through the 404 Nationwide Permit Coordination would be documented by the district biologist and would include avoidance, minimization, and/or compensation measures, as necessary.
- Conformance with other local requirements with Stanislaus County and the Modesto Irrigation District as appropriate.

WQ-4: Discharge of Construction Water: If dewatering activities are necessary, the requirements of the Central Valley Regional Water Quality Control Board and Stanislaus County for dewatering and discharge of non-stormwater will be followed. Implementation of a stream diversion is an avoidance measure that prevents impacts to water quality associated with column and foundation concrete operations and the export of sediment from disturbed soil areas. Creating a dry working environment for the column and foundation concrete operations would prevent alkaline concrete materials from entering a waterbody.

WQ-5: Temporary Impacts:

- Construction entrances and temporary construction roadway would be required.
- Appropriate Best Management Practices such as stabilized construction entrance and roadway shall be implemented at these locations.

WQ-6: Permanent Impacts:

- Permanent erosion control would be proposed for disturbed areas; new side slopes would consist of hydroseeding, hydromulch, and/or netting.

2.2.3 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.
- 16 U.S. Code 461-467 established the National Natural Landmarks program. Under this program, property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated National Natural Landmarks, and of areas found to meet the criteria for national

significance, in assessing the effects of their activities on the environment under NEPA.

- 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.
- The National Environmental Policy Act (NEPA) directs federal agencies to use all practicable means to "Preserve important historic, cultural, and natural aspects of our national heritage…" (Section 101(b) (4)). Regulations for implementing the procedural provisions of NEPA are found in 40 CFR 1500-1508.
- 23 United States Code (USC) 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws.

Some federal laws apply only if the project includes certain federal lands, and the Federal-Aid Highway Act of 1960 applies only if there is federal funding for the project. Projects that involve ground disturbance have the potential to impact paleontological resources if these resources are located within the project area.

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

- Public Resources Code Section 5097.5:

  No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

Affected Environment

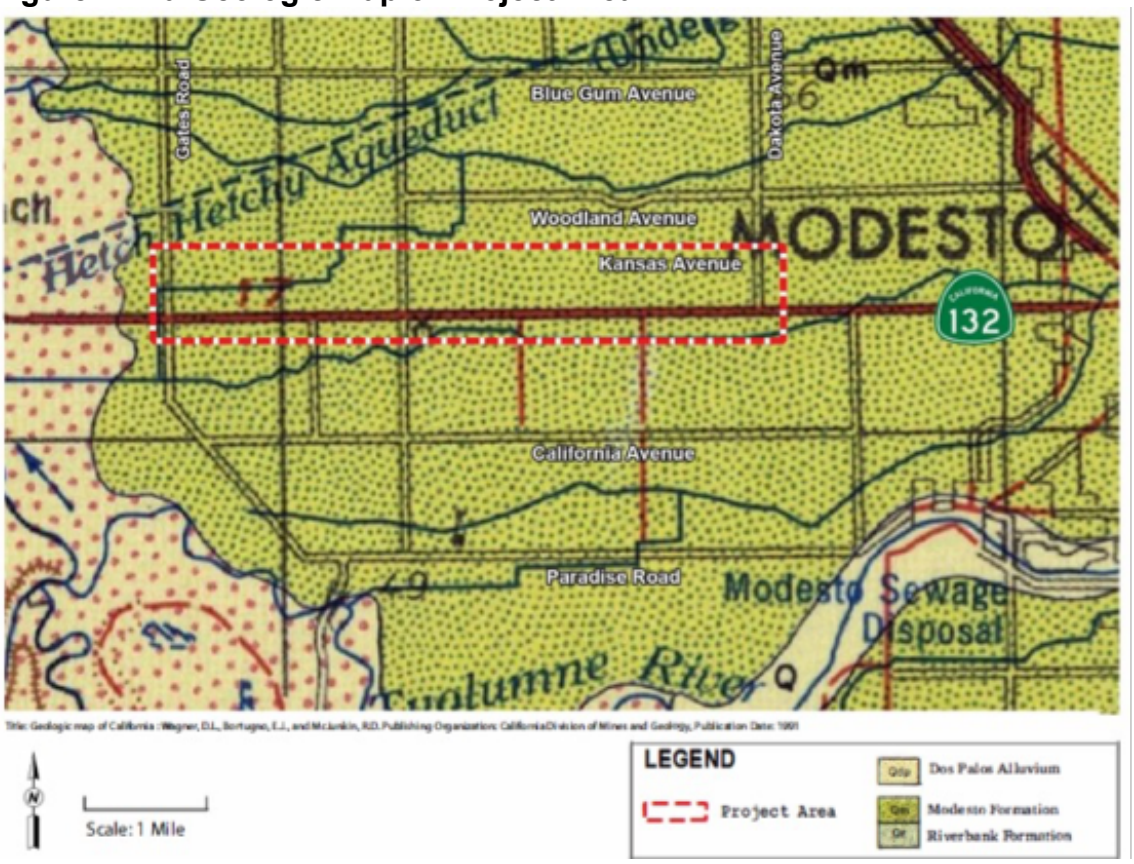
A Paleontological Identification Report was completed in August 2019, which is attached as an appendix to the State Route 132 Paleontological Evaluation Report and Preliminary Mitigation Measures completed in April 2020. The information provided below is based on those studies.

The proposed project is in western Stanislaus County, within the northern portion of San Joaquin Valley. The San Joaquin Valley is part of the Great Valley Geomorphic Province, which is bound on the east by the Sierra Nevada Mountains and to the west by the Coast Ranges. The subsurface of the Great Valley Geomorphic Province is characterized by a thick sequence of unconsolidated to semi-consolidated sediments. Sediments underlying the

proposed project area consist of older alluvium and dissected fan deposits attributed to the Pleistocene-age Modesto Formation as shown in Figure 2-26b.

The fluvial and alluvial deposits underlying the project area consist of Pleistocene Age sediments, which have been documented to contain fossilized organisms that provide valuable information, such as the relative age of fossils, information on evolutionary trends, and evidence of changing paleoenvironments. The Modesto Formation is composed of streambed sediments and floodplain deposits ranging from 10 to 40 meters in thickness, extending continuously from the Kern River to the Sacramento River. The floodplain deposits were derived mainly from the interior of the Sierra Nevada during the last ice age and are estimated to range from 14,000 to 42,000 years old. The Modesto Formation is considered a high sensitivity resource since numerous scientifically significant paleontological localities have been discovered. The Modesto Formation, which is on the east side of the San Joaquin Valley, has been known to contain scientifically valuable fossils including Columbian mammoth *(Mammuthus columbi),* giant ground sloth *(Megatherium),* American llama *(Lama glama),* ancient bison *(Bison antiquus),* dire wolf *(Canis dirus),* and cougar *(Felis concolor)* as well as birds, and reptiles.

Figure 2-27a Geologic Map of Project Area



Environmental Consequences

Build Alternatives

The Modesto Formation, which underlies all Build Alternatives, would be impacted due to ground disturbance during general construction activities, excavation, and construction of structural foundations and drainage basins for the proposed project. This work could result in potential impacts to the highly sensitive area.

Construction activities, including grading, excavation, and other subsurface ground disturbance, reaching and/or exceeding 3 feet in depth within the project area, have the potential to impact scientifically significant nonrenewable fossil resources. The scope of work for each of the four Build Alternatives would include the construction of conveyance and ditch systems, which are estimated to require excavation up to 3 to 5 feet deep and large basins up to a maximum of 15 feet deep.

Paleontological mitigation monitoring would be required during construction to ensure that potential impacts are reduced to a less than significant level. Any increased number of cubic yards of soil excavation would likely increase impacts on the Modesto Formation. Excavations are defined as ground-disturbing activities that extend into undisturbed portions of the Modesto Formation. Build Alternatives 1 and 2 would have more soil excavation/cut and fill when compared to Build Alternatives 3 and 4. Because Build Alternatives 1 and 2 are on a new alignment, they are more likely to encroach into undisturbed portions of the Modesto Formation as they require additional excavation for proposed structures and drainage facilities.

Table 2.20 Estimated Excavation and Borrow Amounts in Cubic Yards for Each Build Alternative

Build Alternative	Excavation	Imported Borrow
Build Alternative 1	250,000 cubic yards	200,000 cubic yards
Build Alternative 2	300,000 cubic yards	300,000 cubic yards
Build Alternative 3	140,000 cubic yards	100,000 cubic yards
Build Alternative 4	140,000 cubic yards	100,000 cubic yards

Source: State Route 132 Dakota to Gates Draft Project Report.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements and, therefore, would not impact paleontological resources because no construction excavation or grading would occur.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures are not feasible due to the areal extent of the Modesto Formation within the project limits. Based on this, the following mitigation measures would be implemented to mitigate impacts to potentially sensitive paleontological resources;

PR-1: A Paleontological Mitigation Plan shall be prepared before construction, including all applicable excavations within the project area. Applicable excavations are defined as grading, excavation, and other subsurface ground-disturbing activities reaching and/or exceeding 3 feet deep within the project footprint. A qualified paleontologist would prepare, review, and approve this document per the guidance provided in Caltrans' Standard Environmental Reference Chapter 8 (https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/volume-1-guidance-for-compliance/ch-8-paleontology) and consistent with Caltrans' Standard Special Specification Section 14-7.04, Paleontological Resources. The Paleontological Mitigation Plan would contain the following components as specified in the Paleontological Evaluation Report:

- Safety component
- Worker Environmental Awareness Training
- Schedule and Critical Path Method for completing proposed work
- Mitigation monitoring methods
- Recovery and Curation methods
- Reporting criteria

PR-2: The project would require implementation of Caltrans' Standard Special Specification Section 14-7.04, Paleontological Resources. Section 14-7.04 includes specifications requiring the construction contractor to coordinate and work with a paleontological resource mitigation team provided by Caltrans.

2.2.4 Hazardous Waste and Materials

Regulatory Setting

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

The main federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and the Resource Conservation and Recovery Act of 1976. The purpose of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 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:

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

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

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

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

Affected Environment

This section summarizes the analysis documented in an Initial Site Assessment completed in February 2015 and updated in June 2020, which summarizes a Preliminary Site Investigation Report completed in June 2019. An Aerially Deposited Lead Study was also completed in June 2019. The purpose of the Preliminary Site Investigation Report was to evaluate the concentrations of contaminants of concern in soil and groundwater at two properties (10555 Maze Boulevard and 8700 Maze Boulevard), which may be affected by the proposed project.

Regulatory databases and files at the Department of Toxic Substances Control's EnviroStor and the State Water Resources Control Board's GeoTracker

database were reviewed to find the current land uses and potential indicators of hazardous waste/groundwater contamination within the existing and potentially expanded Caltrans right-of-way. Field observation was limited to those areas visible from publicly accessible areas.

The Initial Site Assessment included a review of regulatory agency records, which found one open case of a documented cleanup site. The site at 313 North Gates Road was identified as a site that might affect the project. Three closed case sites—8700 Maze Boulevard, case closed as of January 28, 2014; 8624 Maze Boulevard, case closed as of May 3, 2007; and 6943 Maze Boulevard, case closed as of August 15, 2013—were identified (see Table 2.21). These properties were identified as being on the Cortese List. Even if a site has a formal closure from the regulatory agency, contamination could still exist.

Table 2.21 Hazardous Materials Sites within the Project Area

Site Name and Address	Regulatory Database	Case Status	Summary
My Flying Ranch, 313 North Gates Road, Modesto, California 95358	Spills, leaks, investigations, and cleanups.	Open case as of January 1, 1965. Evaluation as of November 16, 1994.	This property is used as an airfield for crop dusters to apply pesticides and herbicides. A documented review of My Flying Ranch Service indicates groundwater in the surrounding area may be impacted by pesticides, herbicides, and arsenic. This property would not be impacted by any of the Build Alternatives.
Ziegler Property, 8700 Maze Boulevard, Modesto, California, 95358	Leaking underground storage tank.	Case closed as of January 28, 2014.	There was one permitted underground storage tank onsite with past records showing potential groundwater contaminants of concern such as gasoline and methyl tert-butyl ether. Build Alternative 3 would impact this property if it is acquired.
Ziegler Property, 8624 Maze Boulevard, Modesto, California 95358	Spills, leaks, investigations, and cleanups.	Case closed as of May 3, 2007.	This property would not be impacted by any of the Build Alternatives.
Smart Stop Food Mart 6943 Maze Boulevard Suite Number A, Modesto, California 95358	Spills, leaks, investigations, and cleanups.	Case closed as of August 15, 2013.	This property would not be impacted by any of the Build Alternatives.

Build Alternatives 1 and 2

According to the preliminary design, between Build Alternatives 1 and 2, about 11 single-family homes may require relocation. Although there is no record of release/spills of hazardous waste at these properties, the past and current land use of the project area is agricultural, and the soils in the area might contain pesticides and herbicides, including arsenic, as a result of past farm operations. This would require additional studies in the design phase after the preferred Build Alternative is selected.

Build Alternative 3

Build Alternative 3 would be on the existing State Route 132 (Maze Boulevard) alignment but shifted to the north. The area is still rural, but it is more built-up than Build Alternatives 1 and 2. The existing State Route 132 (Maze Boulevard) alignment is the main route that transports commuters and commercial trucks from west to east of Modesto. From the preliminary design, the project may affect 34 single-family homes, three commercial businesses—Chevron service/gas station, truck weight scale, warehouse—and one industrial/manufacturing business. One of the four properties from the Cortese List—313 North Gates Road—is within the boundary of Build Alternative 3. This property is used as an airfield for crop dusters to apply pesticides and herbicides. A review of My Flying Ranch Service indicates groundwater in the surrounding area may be impacted by pesticides, herbicides, and arsenic.

Build Alternative 4

Build Alternative 4 would be along the existing State Route 132 (Maze Boulevard) alignment but shifted to the south. Build Alternative 4 may impact 25 single-family homes, one duplex, 14 mobile homes, and four commercial businesses. The Chevron service/gas station and the Fisher Nut Company are within the footprint of Build Alternative 4.

According to the Draft Relocation Impact Report dated March 2020, the current use of some of these commercial businesses is unknown. According to the 2020 Initial Site Assessment, one of the four properties on the Cortese List is at 8700 Maze Boulevard, which contains 14 mobile homes. There was one permitted underground storage tank onsite with past records showing potential groundwater contaminants of concern such as gasoline and methyl tert-butyl ether.

A Preliminary Site Investigation was completed in June 2019 to evaluate the concentrations of contaminants of concern in soil and groundwater at two properties—10555 Maze Boulevard and 8700 Maze Boulevard—which may be affected by the proposed project.

10555 Maze Boulevard

Soil: Soil excavated from this property would not be classified as a California hazardous waste based on arsenic content. Organophosphorus pesticides and

chlorinated herbicides were not detected at concentrations exceeding their respective laboratory reporting limits in the soil samples collected from this parcel. Based on laboratory analysis results, no special handling of excavated soil material from this property with respect to the analyzed compounds is expected during construction.

Groundwater: Arsenic was detected in the groundwater samples collected from borings obtained within this parcel at concentrations greater than the arsenic Human Health Risk Assessment Note 3 Screening Levels and Regional Screening Levels for residential and commercial/industrial land use. Organochlorine pesticides, Organophosphorus pesticides, and chlorinated herbicides were not detected at concentrations exceeding their respective laboratory reporting limits in the groundwater samples collected from this parcel.

8700 Maze Boulevard

Soil: Soil excavated from this area would not be classified as a California hazardous waste based on the heavy metals content. Gasoline Range Organics and Volatile Organic Compounds were not detected at concentrations exceeding their respective laboratory reporting limits in the soil samples analyzed. Based on laboratory analysis results, no special handling of excavated soil material from this parcel with respect to metals and petroleum hydrocarbons is expected during construction.

Groundwater: Beryllium, selenium, silver, and thallium were not detected in the groundwater samples collected within this parcel. Except for zinc, the remaining Title 22 metals were detected in the groundwater samples collected at concentrations greater than their respective Human Health Risk Assessment Note 3 Screening Levels and Regional Screening Levels. Gasoline Range Organics were detected in five of the six groundwater samples analyzed at concentrations up to 0.09 milligrams per liter. Volatile Organic Compounds were not detected in the groundwater sample collected. If construction dewatering is required during project construction, the extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements.

Table 2.22 Preliminary Site Investigation Findings by Build Alternative

Category	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Soil Contaminants	No record of release/spills of hazardous waste.	No record of release/spills of hazardous waste.	Metal concentrations for the soil samples fall within the normal range. Chlorinated herbicide and insecticide compounds were detected in a soil sample.	Metal concentrations for the soil samples fall within the normal range.
Groundwater Contaminants	No record of release/spills of hazardous waste.	No record of release/spills of hazardous waste.	Arsenic was detected at concentrations ranging from 0.030 to 0.29 milligrams per liter. If construction dewatering is required, extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements.	All Title 22 metals (except zinc) were detected in the groundwater samples from this location at unsafe level concentrations. Gasoline Range Organics were detected in five of the six groundwater samples analyzed at concentrations up to 0.09 milligrams per liter.

Aerially Deposited Lead from the Highway

Caltrans Hazardous Waste and Paleontological staff referenced various past Aerially Deposited Lead studies conducted along existing State Route 132. The previous studies showed soluble lead levels above regulatory thresholds for portions of the proposed project limits. As a result, A Preliminary Site Investigation was initiated and completed in June 2020 to confirm existing State Route 132 conditions. A total of 126 soil samples were taken along eastbound State Route 132 and westbound State Route 132, sampling the unpaved shoulder areas of State Route 132 from Dakota Avenue to Gates Road. The soil samples were tested for aerially deposited lead and pesticides from nearby agricultural properties. The results are discussed below for each Build Alternative.

Aerially deposited lead can be found in the surface and near-surface soils along nearly all roadways because of past use of tetraethyl lead in motor vehicle fuels.

Areas of most concern are soils along routes that had high vehicle emissions from large traffic volumes or congestion during the period when leaded gasoline was in use back in the early 1980s. Shoulder soils along urban and heavily traveled rural highways like State Route 132 are commonly above the soluble threshold limit concentration criteria.

Pesticide Residue from Agriculture

Inorganic pesticides containing elevated concentrations of metals were commonly used in California before 1950. From 1950 up to the mid-1970s, Organochlorine pesticides were commonly used. Arsenic from inorganic pesticides and residues from Organochlorine pesticides have the potential to persist for many decades in soil. Agriculture has been present in the project vicinity as early as 1940. Therefore, arsenic and Organochlorine pesticides may be present in shallow soils in the project area.

Environmental Consequences

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

The project area along existing roadways in all four Build Alternatives has the potential for hazardous materials in the form of aerially deposited lead. Soil generated during the construction of all four Build Alternatives would not be classified as hazardous waste under the Federal Resource Conservation and Recovery Act, since the Aerially Deposited Lead Study found that soluble lead concentrations in the soil do not exceed the regulatory threshold. On the shoulders of existing eastbound State Route 132 (Maze Boulevard), soil excavated from the surface to 3 feet deep or less would qualify as non-regulated material for unrestricted use. On the shoulders of existing westbound State Route 132 (Maze Boulevard), soil excavated from the surface to 1 foot deep or less would qualify for reuse within the Caltrans right-of-way without cover requirement or be disposed of at a Class 2 or Class 3 disposal facility. Class 2 or Class 3 facilities are waste disposal sites that accept nonhazardous wastes.

Yellow traffic stripes are present at various locations throughout all Build Alternatives and may contain heavy metals such as lead and chromium at concentrations above the hazardous waste thresholds established by the California Code of Regulations. Consequently, removal or disturbance of any yellow traffic striping within the project area would require the development and implementation of an appropriate Lead Compliance Plan.

Construction workers could be exposed to hazardous materials during ground-disturbing activities such as grading, demolition/replacement of structures, and/or roadbed resurfacing at any of the areas known to contain hazardous

substances. Older commercial and residential structures in rural areas often have associated aboveground or belowground heating oil and/or motor vehicle fuel tanks. Septic tanks are also commonly associated with these types of structures. If heating oil tanks, fuel tanks, or septic tanks are (or were previously) associated with the structures, there is also the potential for late discovery of unidentified conditions. Septic and fuel tanks would be addressed if discovered during construction.

Build Alternatives 1 and 2

The area within the proposed alignments of Build Alternatives 1 and 2 is more rural compared to the areas around Build Alternatives 3 and 4. A 2020 Initial Site Assessment regulatory database search did not identify any past or existing documented hazardous waste sites. It was assumed that the properties along the alignments of Build Alternatives 1 and 2 would have a low-risk of hazardous waste impacts based on the past and current agricultural land use. These Build Alternatives are presumed to be free of aerially deposited lead because there is currently no road access under these new alignments. Agriculture dominates the area. Regular use of pesticides on crops within Build Alternatives 1 and 2 would not contribute to contamination of the soil or groundwater at high concentrations. However, an additional study may be required in the design phase, after the preferred Build Alternative is selected, to ensure worker safety.

Build Alternative 3

Build Alternative 3 would be built along the existing State Route 132 (Maze Boulevard) alignment but shifted to the north. Consequently, Build Alternative 3 would displace everything within proximity of the north side of State Route 132.

The metal concentrations for the soil samples fall within the range of naturally occurring background levels. From the groundwater samples collected from this site, arsenic was detected at concentrations ranging from 0.030 to 0.29 milligrams per liter. This amount of arsenic is above the Human Health Risk Assessment Note 3 Screening Levels and Regional Screening Levels. Petroleum hydrocarbons were not detected at concentrations exceeding their respective laboratory reporting limits. If construction dewatering is required during the proposed project, the extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements.

The soils were tested for Organochlorine pesticides and Organophosphates (insecticide compounds). Both compounds were found to be several orders of magnitude less than their Human Health Risk Assessment Note 3 Screening Level and Regional Screening Level for residential and commercial/industrial land use. Based on the laboratory analysis, no special handling of excavated soil material with respect to these compounds is expected during construction. Chlorinated herbicide was detected in a soil sample; however, it was less than its Human Health Risk Assessment Note 3 Screening Level and Regional Screening Level for residential and commercial/industrial land use.

No special handling of excavated soil would be required during the construction of any Build Alternative. However, if construction dewatering is required, extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements. No property acquisition is planned for the parcels at 313 North Gates Road and 10555 Maze Boulevard for any of the Build Alternatives, so no impacts are expected at these locations.

Build Alternative 4

Build Alternative 4 would be along the existing State Route 132 (Maze Boulevard) alignment but shifted to the south. Consequently, Build Alternative 4 would displace everything within proximity of the south side of State Route 132 (Maze Boulevard).

The concentrations of hazardous materials in the soil samples evaluated fall within the range of naturally occurring background levels or did not exceed laboratory reporting limits. However, all Title 22 metals (except zinc) were detected in the groundwater samples from this location at concentrations greater than their Human Health Risk Assessment Note 3 Screening Level and Regional Screening Level. Gasoline Range Organics were detected in five of the six groundwater samples analyzed at concentrations up to 0.09 milligrams per liter.

No-Build (No-Action) Alternative

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

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce potential impacts related to hazardous wastes and materials for all four Build Alternatives:

HW-1: If construction dewatering is required during project construction, the extracted groundwater would be properly contained, treated where required, and discharged per regulatory requirements. Options for groundwater discharge include obtaining a local sanitary sewer permit or a National Pollutant Discharge Elimination System permit for discharge to surface water or storm drain.

HW-2: Per Caltrans requirements, the contractor(s) should prepare a project-specific Lead Compliance Plan (California Code of Regulations Title 8, Section 1532.1, the “Lead in Construction” standard) to minimize worker exposure to lead-impacted soil. The Lead Compliance Plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

HW-3: If obvious impacted soil conditions are encountered during construction excavations, these materials should be isolated, stockpiled, and characterized to determine appropriate soil disposal options.

2.2.5 Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the 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 criteria pollutants that have been linked to potential health concerns: carbon monoxide, nitrogen dioxide, ozone, particulate matter—which is broken down for regulatory purposes into particles of 10 micrometers or smaller and particles of 2.5 micrometers and smaller, Lead, and sulfur dioxide. In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The National Ambient Air Quality Standards and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

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

Conformity

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

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. 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 the National Ambient Air Quality

Standards and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter, and in some areas (although not in California), sulfur dioxide. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except sulfur dioxide, and also has a nonattainment area for lead; however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Program). Regional Transportation Plan and Federal Transportation Improvement Program conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Federal Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration make the determinations that the Regional Transportation Plan and Federal Transportation Improvement Program are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Program must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Program, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

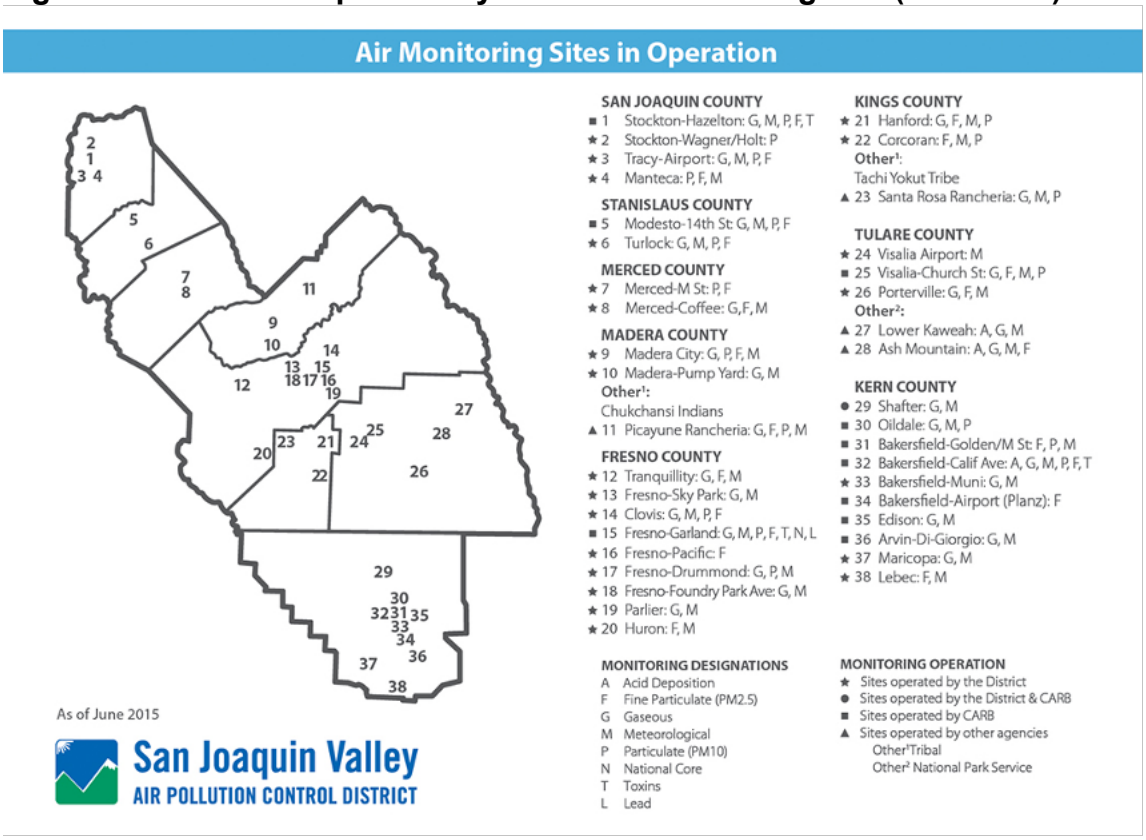
Project-level conformity is achieved by demonstrating that the project comes from a conforming Regional Transportation Plan and Federal Transportation Improvement Program; the project has a design concept and scope that has not changed significantly from those in the Regional Transportation Plan and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

Affected Environment

The following section is based on the State Route 132 Dakota Avenue to Gates Road Project Air Quality Study Report, completed in May 2020 and located in Volume 3.

The proposed project study area is near the city of Modesto in Stanislaus County, which lies within the San Joaquin Valley Air Basin, and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District. The San Joaquin Valley Air Pollution Control District is principally responsible for air pollution control within the basin through monitoring air quality and through planning, implementing, and enforcing programs designed to reach and maintain state and federal ambient air quality standards in the San Joaquin Valley Air Pollution Control District.

Figure 2-27b San Joaquin Valley Air Basin Monitoring Site (Number 5)



The climate of the proposed project study area is generally Mediterranean, with cool winters that average 60 degrees Fahrenheit and warm, dry summers that average 90 degrees Fahrenheit. The San Joaquin Valley Air Basin is an essentially closed basin surrounded by the Coast Ranges on the west, the Tehachapi Mountains to the south, and the Sierra Nevada range to the east. These conditions, in conjunction with the prevailing westerly winds from the North Pacific high-pressure cell and temperature inversions, result in poor dispersion of pollutants and lead to pollutant accumulation.

Table 2.23 Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone	High concentrations irritate the lungs, and long-term exposure may cause lung tissue damage and cancer. Long-term exposure also damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds and nitrogen oxides in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Carbon Monoxide	Carbon monoxide interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. Carbon monoxide also is a minor precursor for photochemical ozone. Carbon monoxide is colorless and odorless.	Combustion sources, especially gasoline-powered engines, and motor vehicles. Carbon monoxide is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter 10	Irritates the eyes and respiratory tract and decreases lung capacity. Associated with increased cancer and mortality and contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of respirable particulate matter 10.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter 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 particulate matter size range. Many toxic and other aerosol and solid compounds are part of particulate matter 2.5.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants, including nitrogen oxides, sulfur oxides, ammonia, and reactive organic gases.
Nitrogen Dioxide	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of stormwater. Part of the “nitrogen oxide” group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, and steel. Contributes to acid rain. Limits visibility.	Fuel combustion, especially coal and high-sulfur oil, chemical plants, sulfur recovery plants, metal processing, and some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel is not used.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Lead	Disturbs the 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, and leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Sulfates	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide	Colorless, flammable, poisonous, and respiratory irritant. Can cause headache, nausea, neurological damage, and premature death. 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.
Visibility Reducing Particles	Reduces visibility and produces haze. Note: not directly related to the Regional Haze Program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in national parks and other “Class 1” areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Vinyl Chloride	Neurological effects, liver damage, and cancer. Also considered a toxic air contaminant.	Industrial processes

Table 2.24 State and Federal Criteria Air Pollutant Standards and Status

Pollutant	Averaging Time	State Standard	Federal Standard	State Project Attainment Status	Federal Project Area Attainment Status
Ozone	1 hour	0.09 parts per million	None	Nonattainment / Severe	Not Applicable
Ozone	8 hours	0.070 parts per million	0.070 parts per million (4th highest in 3 years)	Nonattainment	Nonattainment / Extreme
Carbon Monoxide	8 hours	9.0 parts per million	9.0 parts per million	Attainment / Unclassified	Attainment / Unclassified
Respirable Particulate Matter 10	24 hours	50 micrograms per cubic meter	150 micrograms per cubic meter (expected number of days above standard less than or equal to 1)	Nonattainment	Attainment
Fine Particulate Matter 2.5	24 hours	Not Applicable	35 micrograms per cubic meter	Nonattainment	Nonattainment
Nitrogen Dioxide	1 hour	0.18 parts per million	0.100 parts per million	Attainment	Attainment / Unclassified
Sulfur Dioxide	24 hours	0.04 parts per million	0.14 parts per million (for certain areas)	Attainment	Nonattainment / Unclassified
Lead	Monthly	1.5 micrograms per cubic meter	None	Attainment	No Designation / Classification
Sulfates	24 hours	25 micrograms per cubic meter	None	Attainment	None
Hydrogen Sulfide	1 hour	0.03 parts per million	None	Unclassified	None
Visibility Reducing Particles	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70 percent	None	Unclassified	None
Vinyl Chloride	24 hours	0.01 parts per million	None	Attainment	None

Source: California Air Resources Board Air Quality Standards.

To satisfy federal requirements, Stanislaus County must consider transportation control measures to reduce emissions for ozone and particulate matter to demonstrate conformity with the State Implementation Plan for air quality. Within the San Joaquin Valley Air Basin, Stanislaus County is a designated nonattainment area for ozone and particulate matter.

The San Joaquin Valley Air Pollution Control District's 2016 Ozone Plan, 2007 Respirable Particulate Matter 10 Maintenance Plan, and the 2012 Fine Particulate Matter 2.5 Plan all document the District's plans to achieve the state ambient air quality standards. As such, compliance with the regulations and incentives contained in the San Joaquin Valley Air Pollution Control District's plans results in compliance with the state ambient air quality standards.

The 2018 Regional Transportation Plan/Sustainable Communities Strategy conforms to the applicable San Joaquin Valley Air Pollution Control District's plans discussed above. It also demonstrates progress toward attainment with state ambient air quality standards for respirable particulate matter 10, fine particulate matter, and ozone. Implementation of the 2018 Regional Transportation Plan/Sustainable Communities Strategy would result in a less than significant impact on air quality. The Regional Transportation Plan/Sustainable Communities Strategy documented that implementation of the plan would result in 302 lower criteria pollutants in 2042 compared to the baseline (2018). These impacts would be less than significant because the land use development and transportation network envisioned by this plan would alter vehicle miles traveled and change the quantity and distribution of air pollutants.

Environmental Consequences

Regional Conformity

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter (respirable particulate matter 10 and fine particulate matter 2.5). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants."

The project is included in the Stanislaus Council of Governments' 2019 Federal Transportation Improvement Program. The project is also included in Stanislaus Council of Governments' 2018 Regional Transportation Plan, 2018 Regional Transportation Plan Amendment Number 1, and 2019 Federal Transportation Improvement Program Formal Amendment Number 9, along with Regional Transportation Plan Amendment Number 1 and the corresponding Conformity Analysis.

Project-Level Conformity

Project-level conformity is achieved by demonstrating that the project comes from a conforming Regional Transportation Plan and Transportation Improvement Program and that the project has a design concept and scope that

has not changed significantly from those outlined in the plan and program. Project-level conformity also needs to demonstrate that project analyses have used the latest planning assumptions, U.S. Environmental Protection Agency-approved emissions models, and that the project complies with any control measures in the State Implementation Plan in particulate matter areas. Furthermore, additional analyses (known as hot spot analyses) may be required for projects in carbon monoxide and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

The project is subject to conformity because it is an Environmental Assessment under the National Environmental Policy Act and is considered a regionally significant project. The project is within the San Joaquin Valley Air Basin and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District. Stanislaus County is in nonattainment for the Federal 8-Hour Ozone and Fine Particulate Matter 2.5 standards, and in attainment for Federal Respirable Particulate Matter 10 and Carbon Monoxide standards.

Under 40 Code of Federal Regulations Section 9.109, a project-level hot spot analysis for conformity is not required. The project was submitted for Interagency Consultation in July 2019. The U.S. Environmental Protection Agency and Federal Highway Administration concurred that the project is not a "Project of Air Quality Concern" in September 2019 (see Air Quality Report Section 3.3.3 Interagency Consultation located in Volume 3 for more detail).

For project-level conformity, a project may not contribute to any new localized carbon monoxide, fine particulate matter 2.5, and/or respirable particulate matter 10 violations. Additionally, a project may not delay timely attainment of any National Ambient Air Quality Standards or any required interim emission reductions or other milestones during the time frame of the transportation plan (or regional emissions analysis). No project-level conformity requirements apply to ozone because it is considered a regional pollutant. The project would not interfere with the implementation of any transportation control measures.

Carbon Monoxide Analysis

The carbon monoxide protocol was developed for project-level conformity (hot spot analysis) and was approved for use by the U.S. Environmental Protection Agency 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 California Environmental Quality Act analysis guidance documents and should also be valid for California standards.

The first screening process involved the use of a Carbon Monoxide Protocol Flowchart Analysis. The analysis was conducted to determine if a carbon monoxide hot spot analysis would be required, and the results found that no further analysis is needed. Because the proposed project is not considered a project of air quality concern, a detailed carbon monoxide hot spot analysis is not required to demonstrate that the proposed project is not expected to cause or contribute to new local violations or increase the severity of any existing violations of the National Ambient Air Quality Standards.

Particulate Matter Emissions Analysis

For nonconformity project-level particulate matter analysis, the common practice is to conduct an emissions analysis by comparing particulate matter emissions between the Build Alternatives scenario and the No-Build (No-Action) Alternative, and/or between the Build Alternatives and the baseline scenario. Particulate matter emissions were estimated for Existing Year 2018, No-Build/Build Year 2026, and No-Build/Build Design Year 2046. Particulate matter emissions were modeled for peak morning and evening traffic periods, as shown in Table 2.25. Peak period length for both morning and evening peak periods are 1 hour each. The off-peak period is also one hour in duration. The Caltrans Forecasting Division provided the speeds and volumes during these periods.

Table 2.25 Particulate Matter Emissions for Each Build Alternative and the No-Build (No-Action) Alternative

Alternatives	2026 Fine Particulate Matter (gm/Peak Hour)	2026 Respirable Particulate Matter (gm/Peak Hour)	2046 Fine Particulate Matter (gm/Peak Hour)	2046 Respirable Particulate Matter (gm/Peak Hour)
No-Build (No-Action) Alternative	370.2	1,698.8	439.8	2,072.6
Build Alternative 1 Morning	987.5	2,529.3	348.9	1,623.1
Build Alternative 1 Evening	610.2	2,361.4	852.7	3,304.4
Build Alternative 2 Morning	987.5	2,529.3	527.8	2,045.6
Build Alternative 2 Evening	610.2	2,361.1	852.7	3,304.4
Build Alternative 3 Morning	890.0	3,406.3	1,017.5	3,983.1
Build Alternative 3 Evening	954.6	3,659.5	1,252.6	4,926.6
Build Alternative 4 Morning	955.5	3,673.2	1,110.0	4,368.3
Build Alternative 4 Evening	976.1	3,758.4	1,283.0	5,072.6

The U.S. Environmental Protection Agency designates Stanislaus County as an attainment area for federal respirable particulate matter 10 standards and a nonattainment area for the federal fine particulate matter 2.5 standards. Per the U.S. Environmental Protection Agency's 2010 guidance, a fine particulate matter 2.5 hot spot analysis would be necessary to show that the project conforms to the State Implementation Plan and would not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of the National Ambient Air Quality Standards for these criteria pollutants. Because the project is in a designated nonattainment area for the federal fine particulate matter 2.5 standards, respectively, a determination must be made as to whether the project qualifies as a project of air quality concern. The project has undergone interagency consultation, which was initiated on July 10, 2019, to make this determination. Concurrence was received from the U.S. Environmental Protection Agency on September 6, 2019, and the Federal

Highway Administration on September 16, 2019, which concluded that the project is not a project of air quality concern.

Because the project is not considered a project of air quality concern, a detailed particulate matter hot spot analysis is not required to demonstrate that the project is not expected to cause or contribute to new local violations or increase the severity of any existing violations of the National Ambient Air Quality Standards.

Short-Term Effects (Construction Emissions)

Construction activities would not last more than 5 years at any particular location; therefore, construction emissions do not need to be considered in the conformity analysis. During construction, the project would generate short-term air pollutants. Emissions from construction equipment are expected and would contain carbon monoxide, nitrogen oxides, volatile organic compounds, directly emitted particulate matter, and toxic air contaminants such as diesel exhaust particulate matter. However, 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.

Construction greenhouse gas emissions for the project are calculated using the Caltrans Construction Emissions Tool v1.1. Project construction is expected to generate about 5,098 tons of carbon dioxide during the 300 working days (less than the 264 working days per 1 year) duration.

Measures to reduce construction-related greenhouse gas emissions must be included in all projects and are discussed under Chapter 3, Section 3.4.

Most of the construction impacts to air quality are short-term in duration and, therefore, would not result in long-term adverse conditions. 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 air pollution control rules, ordinances, and regulations and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017. The amount of respirable particulate matter and NOx (Oxides of Nitrogen) emissions are likely to exceed the San Joaquin Valley Air Pollution Control District’s Rule 9510/Indirect Source Review Rule. The construction contractor selected for this project will be required to comply with this rule and to submit an Air Impact Analysis to San Joaquin Valley Air Pollution Control District and pay any fees if required.

Implementation of the following standardized measures, some of which may also be required for other purposes such as stormwater pollution control, would reduce any air quality impacts resulting from construction activities:

- Measures to reduce fugitive dust are required by the California Air Resources Board and San Joaquin Valley Air Pollution Control District. The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2015) Section 14-9-02 which specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
- Water or a dust palliative would be used on the site and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emissions or at the right-of-way line depending on local regulations.
- Soil binder would be spread on any unpaved roads used for construction purposes and on all project construction parking areas.
- Trucks would be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles would be properly tuned and maintained. All construction equipment would use low sulfur fuel as required by the California Code of Regulations Title 17, Section 93114.
- A dust control plan would be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Equipment and materials storage sites would be as far away from residential and park uses as practicable. Construction areas would be kept clean and orderly.
- Environmentally sensitive areas would be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible.
- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, would be used.
- All transported loads of soils and wet materials would be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) would be provided to minimize the emission of dust during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activities and traffic would be promptly and regularly removed to reduce particulate matter emissions.

- To the extent feasible, construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

Mulch would be installed, or vegetation planted as soon as practical after grading to reduce windblown particulate matter in the area. Certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may require controls such as dampened straw.

Avoidance, Minimization, and/or Mitigation Measures

No substantial air quality effects are expected as a result of the construction and operation of the project. As such, no avoidance, minimization, and/or mitigation measures would be required.

Climate Change

The U.S. Environmental Protection Agency and Federal Highway Administration have not issued explicit guidance or methods to conduct project-level greenhouse gas analysis. The Federal Highway Administration emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements outlined in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act chapter of this document. The California Environmental Quality Act analysis may be used to inform the National Environmental Policy Act determination for the project.

The full discussion of climate change is presented in Chapter 3, after the CEQA checklist.

2.2.6 Noise

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

California Environmental Quality Act requires a strict baseline versus build analysis to assess whether a proposed project would have a noise impact. If a project is determined to have a significant noise impact under the California Environmental Quality Act, then the California Environmental Quality Act dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the National Environmental Policy Act/Title 23 Part 772 of the Code of Federal

Regulations 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 Federal Highway Administration involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the noise abatement criteria for homes (67 A-weighted decibels) is lower than the noise abatement criteria for commercial areas (72 A-weighted decibels). Table 2.26 lists the noise abatement criteria for use in the National Environmental Policy Act/23 Code of Federal Regulations 772 analysis.

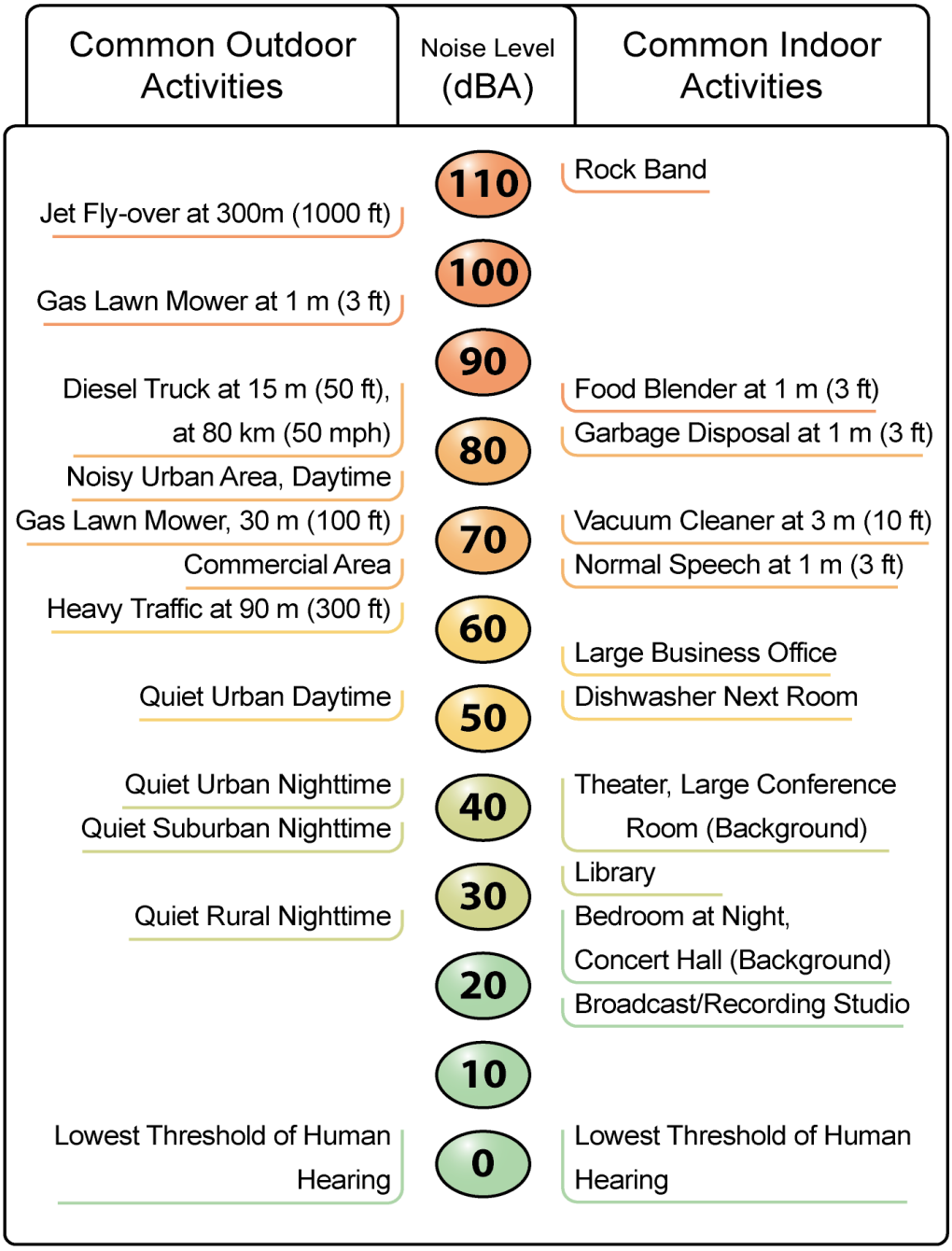
Table 2.26 Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, 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	67 (Exterior)	Residential.
C	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants, bars, and other developed lands, properties, or activities not included in A-D or F.
F	No Noise Abatement Criteria—Reporting Only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehouses.
G	No Noise Abatement Criteria—Reporting Only	Undeveloped lands that are not permitted.

In Table 2.26 above, undeveloped lands are permitted for the activity categories for B and C.

Figure 2-27 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Figure 2-27c Noise Levels of Common Activities



According to 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 A-weighted decibel or more) or when the future noise level with the project approaches or exceeds the noise abatement criteria. A noise level is considered to approach the noise abatement criteria if it is within 1 A-weighted decibel of the noise abatement criteria.

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 into the project.

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

Affected Environment

The following section is based on the State Route 132 Dakota Avenue to Gates Road Noise Study Report, completed in March 2020, and the State Route 132 Dakota Avenue to Gates Road Noise Abatement Decision Report, completed in March 2020. The reports are located in Volume 3.

Land uses in the project study area were identified through a field noise analysis, which identified frequent human outdoor use areas. The existing State Route 132 (Maze Boulevard) and the location of the four Build Alternatives proposed for the project are in similar settings with residential and agricultural fields identified as the general land use between the project's post miles. Build Alternatives 1 and 2 are about 2,500 feet north of State Route 132 (Maze Boulevard), where there is not currently an existing road. The studied land use within the project limits is mostly residential; however, at the location of Build Alternatives 1 and 2, the homes are separated by agricultural farmland. The existing noise levels were not modeled for the two receivers next to both Build Alternatives because there is no existing traffic near these receivers; therefore, rural background noise measurements were used for the existing noise levels of these receivers.

Land uses in the project area were categorized by activity, as shown in the Activity Category of Table 2.27 below. Table 2.27 summarizes the noise abatement criteria corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Table 2.27 Activity Categories and Noise Abatement Criteria

Activity Category	Activity Leq[h]1	Evaluation Location	Description of Activities
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	Exterior	Residential.
C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants, bars, and other developed lands, properties, or activities not included in A-D or F.
F	No Noise Abatement Criteria—Reporting Only	Exterior	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehouses.
G	No Noise Abatement Criteria—Reporting Only	Exterior	Undeveloped lands that are not permitted (without building permits).

Existing noise levels during the peak hour of traffic were documented at the following representative sites in the project area through short-term and long-term measurements: Receiver 4, Receiver 11, Receiver 30, and Receiver 36. Each of these receivers falls under Activity Category B land use, which is residential. Field measurements at the remaining receivers were not conducted for a variety of reasons, including no access, or not necessary because it is a receiver at Activity Category (F) land use, which is agricultural. In identifying noise impacts, the main consideration is given to exterior areas that frequently experience human use and may benefit from a lowered noise level. Figures 2-28a and 28b show the locations of the modeled receivers used to determine existing noise levels, as well as proposed barrier locations.

Figure 2-28a Receiver and Modeled Noise Barrier Locations for Build Alternatives 1-4

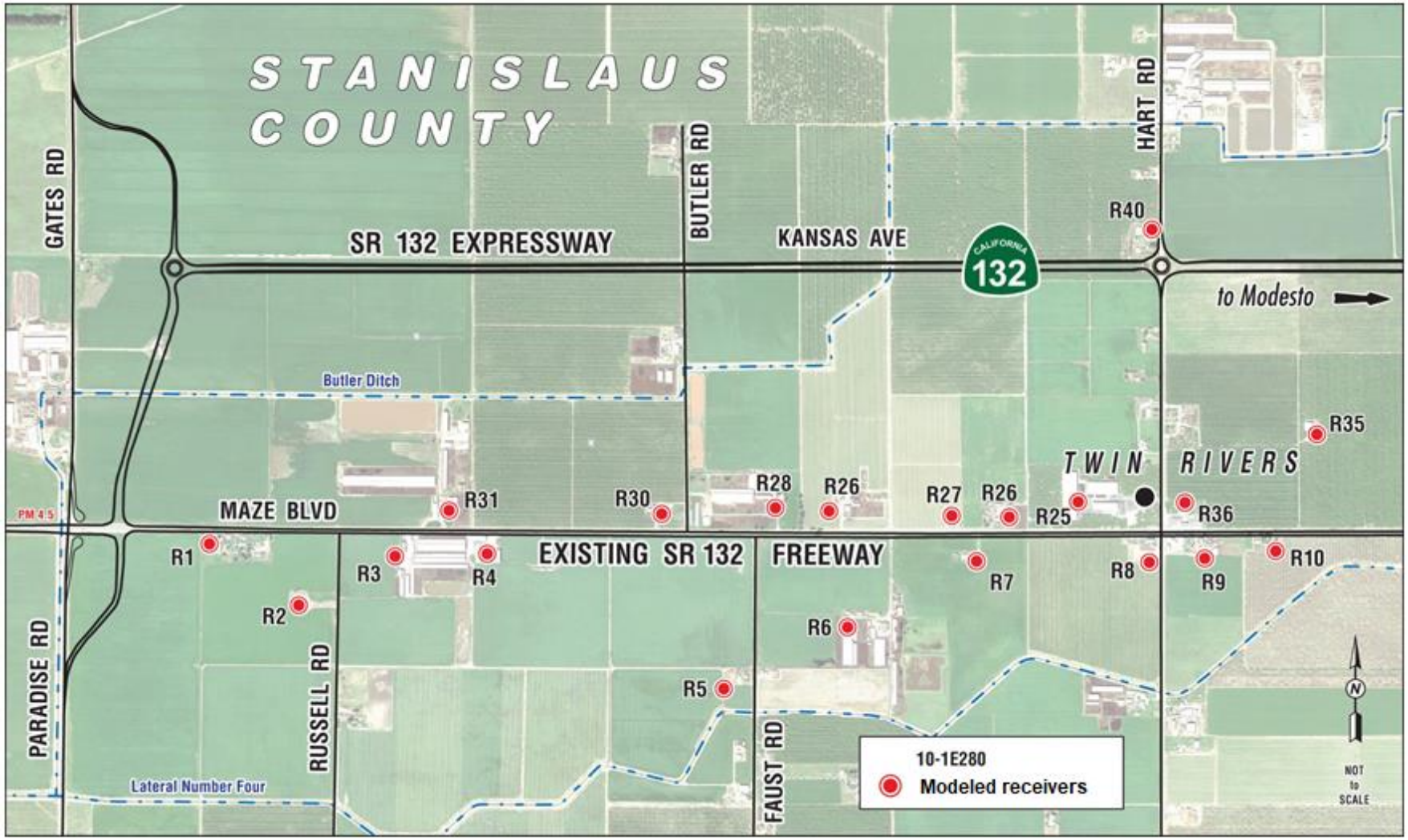
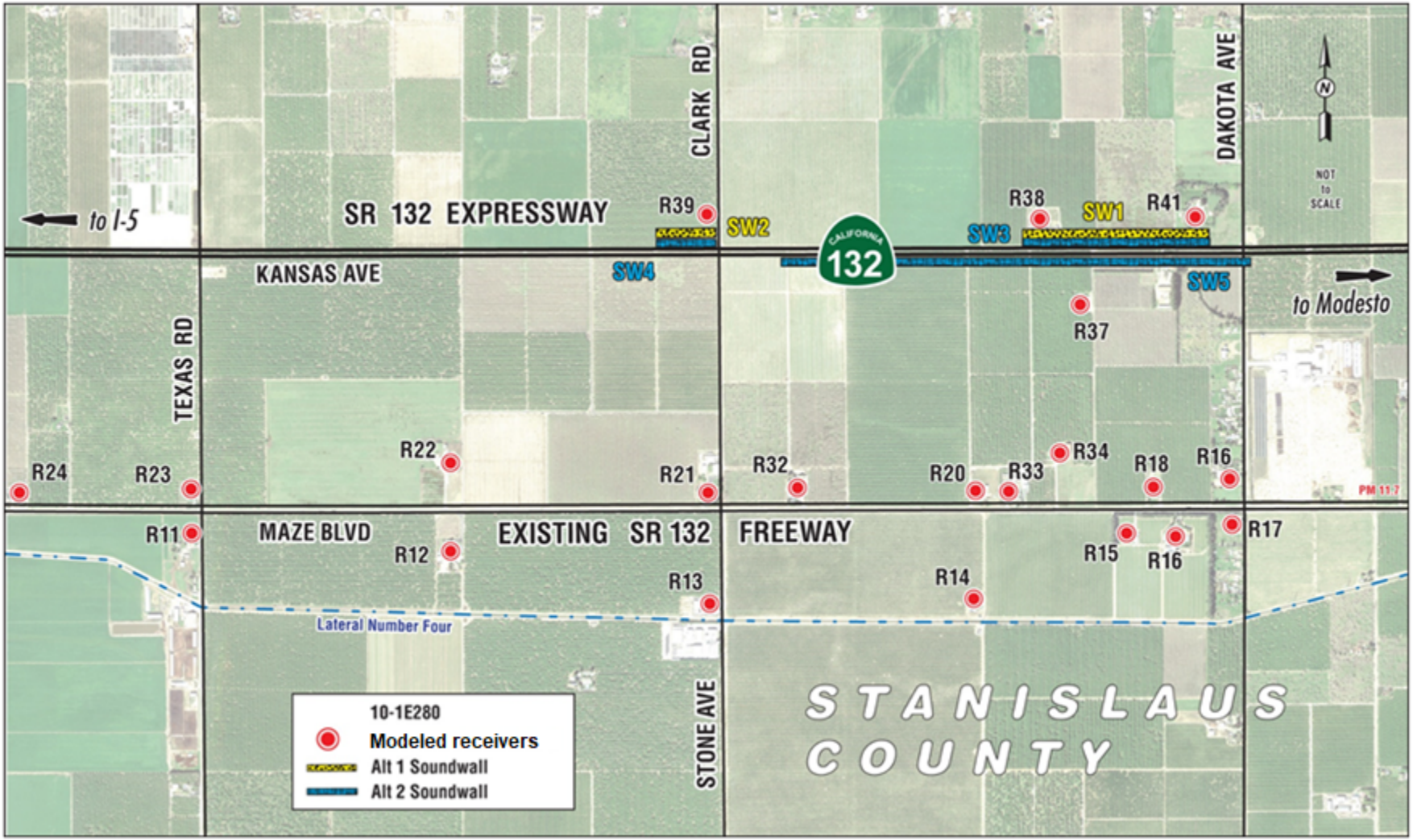


Figure 2-28b Receivers for Build Alternatives 1-4 and Modeled Noise Barriers for Build Alternatives 1 and 2



Environmental Consequences

The project would result in a new highway on a new alignment and increase the number of through traffic lanes; therefore, it is considered a Type 1 project by the Federal Highway Administration. All Type 1 projects require noise impact analysis. For the project, that applies to all four Build Alternatives.

This noise study was conducted to determine the future traffic noise impacts at receptors near the project. The Federal Highway Administration Traffic Noise Model Version 2.5 was used for noise analysis. (Federal Highway Administration, 2004) The traffic noise model is a computer model based on two Federal Highway Administration reports: FHWA-PD-96-009 and FHWA-PD-96-010. (FHWA 1998a, 1998b)

Short-term measurements were taken at four locations, which were at or next to single-family homes (Activity Category B). The measurements were taken using the Brüel and Kjær model 2238 sound level meter, which involves a 10-minute measurement period of dominant noise sources in the area, and traffic counts were taken during each measurement. Free-flow traffic, where traffic is moving freely at a steady pace, occurred around 10:00 a.m. See Table 2.28 below.

Table 2.28 Short-Term Noise Measurement Results

Receiver Number	Street Address	Land Use	Noise Level Meter Distance from Right-of-Way (Feet)	Measurement Date	Start Time (Morning)	Duration (Mins.)	Measurement in Equivalent Sound Level, A-Weighted Decibels
Receiver 4	4118 Maze Boulevard	Residential	305	July 15, 2019	9:20	10	58.3
Receiver 11	137 Texas Boulevard	Residential	234	July 15, 2019	10:07	10	58.6
Receiver 30	7937 Maze Boulevard	Residential	130	July 15, 2019	10:55	10	61.1
Receiver 36	6943 Maze Boulevard	Residential	70	July 15, 2019	11:30	10	63.3

Potential long-term noise impacts associated with project operations are solely from traffic noise. Traffic noise was evaluated for the worst-case traffic condition. A total of 41 receivers—in the form of homes—were studied to be potentially impacted for traffic noise due to the implementation of the four proposed Build Alternatives, with existing noise levels varying between 45 A-weighted decibels and 65 A-weighted decibels. The design year noise level range for the studied receivers are as follows:

- Build Alternative 1: 59 A-weighted decibels to 67 A-weighted decibels.
- Build Alternative 2: 62 A-weighted decibels to 70 A-weighted decibels.
- Build Alternative 3: 50 A-weighted decibels to 81 A-weighted decibels.
- Build Alternative 4: 51 A-weighted decibels to 80 A-weighted decibels.

Below is a discussion for the noise level results at the receivers next to the project's Build Alternatives. The traffic noise levels for the existing, design year, No-Build (No-Action) Alternative, and the four design year Build Alternatives are included in the analysis.

Build Alternative 1

Table 2.29 shows the modeling results with existing and predicted design year traffic noise level impacts for Build Alternative 1. Five homes within the project limits sit back at distances ranging from 120 feet to 450 feet from the proposed edge of the traveled way and are represented by Receiver 37 through Receiver 41. The five receivers were studied, and it was determined that Build Alternative 1 would result in noise impacts to four noise-sensitive receivers—Receiver 38, Receiver 39, Receiver 40, and Receiver 41. Noise abatement was considered for three of the receivers—Receiver 38, Receiver 39, and Receiver 40. One of the receivers studied is at a property that was relinquished to Caltrans—Receiver 40—therefore, abatement was not evaluated for this location. The receiver and modeled noise barrier locations for Build Alternatives 1 and 2 are represented in Figure 2-28a and Figure 2-28b.

Five homes within the project limits sit back at distances ranging from 120 feet to 450 feet from the proposed edge of the traveled way and are represented by Receiver 37 through Receiver 41.

Table 2.29 Existing and Predicted Future Noise Analysis—Build Alternative 1

Receiver Number	Proposed Abatement Location	Address	Activity Category	Existing Year (2019) Noise Level (A-weighted decibel)	Design Year (2046) Noise Level (A-weighted decibel)	Change (A-weighted decibel)	Approach or Exceed the Noise Abatement Criteria
Receiver 37	No Data	4290 Kansas Avenue, Modesto	B	48	59	+11	None
Receiver 38	SW-1	4349 Kansas Avenue, Modesto	B	48	64	+16	A/E
Receiver 39	SW-2	801 Clark Road, Modesto	B	48	67	+19	A/E
Receiver 40	No Data	835 Hart Road, Modesto	B	48	65	+17	A/E
Receiver 41	SW-1	4099 Kansas Road, Modesto	B	48	60	+12	A/E

Build Alternative 2

Build Alternative 2 proposes a four-lane divided freeway about 2,500 feet north of the existing State Route 132 (Maze Boulevard). The studied land use within the project limits is mostly residential. Five homes within the project limits sit back at distances ranging from 120 feet to 450 feet from the proposed edge of the traveled way and are represented by Receiver 37 through Receiver 41.

Table 2.30 shows the modeling results with existing and predicted design year traffic noise level impacts for Build Alternative 2. Five homes within the project limits sit back at distances ranging from 120 feet to 450 feet from the proposed edge of the traveled way and are represented by Receiver 37 through Receiver 41. The five receivers were studied, and it was determined that Build Alternative 2 would result in noise impacts to four noise-sensitive receivers—Receiver 37, Receiver 38, Receiver 39, and Receiver 41. Noise abatement was evaluated for the four impacted receivers while the fifth receiver studied is in a relinquished property—Receiver 40—therefore, noise abatement would not need to be evaluated for this location.

According to Table 2.30 below, the design year elevated noise levels at two receivers may potentially trigger California Environmental Quality Act mitigation because they significantly exceed the baseline noise level of 48 A-weighted decibels. Additional details are contained within the CEQA Noise Analysis section following the alternatives discussion.

Table 2.30 Existing and Predicted Future Noise Analysis—Build Alternative 2

Receiver Number	Abatement Location	Address	Activity Category	Existing Year (2019) Noise Level (A-Weighted Decibel)	Design Year (2046) Noise Level (A-Weighted Decibel)	Change (A-Weighted Decibel)	Approach or Exceed the Noise Abatement Criteria
Receiver 37	SW-5	4290 Kansas Avenue, Modesto	B	48	62	+14	None
Receiver 38	SW-3	4349 Kansas Avenue, Modesto	B	48	66	+18	(A/E)
Receiver 39	SW-4	801 Clark Road, Modesto	B	48	70	+22	(A/E)
Receiver 40	Relinquished Property	835 Hart Road, Modesto	B	48	67	+19	No Data
Receiver 41	SW-3	4099 Kansas Road, Modesto	B	48	63	+15	(A/E)

Build Alternative 3

Table 2.31 shows the modeling results with existing and predicted design year traffic noise level impacts for Build Alternative 3. Build Alternative 3 is mostly residential and composed of 36 homes represented by 36 receivers. Table 2.31 lists the represented receivers for the homes that would be potentially purchased by the state. Build Alternative 3 would result in noise impacts to three noise-sensitive receivers, Receiver 1, Receiver 4, and Receiver 8 which would approach the threshold of 67 A-weighted decibels. The noise study determined that Build Alternative 3 would not result in impacts to noise-sensitive receivers for land uses under Activity Category F or Activity Category B (see Table 31). The receivers for Build Alternative 3 are represented in Figure 2-28a and Figure 2-28b.

Noise abatement was not considered for Build Alternative 3 because most receivers would not approach or exceed the noise abatement criteria. Additionally, homes within the project limits are close to the proposed new facility; therefore, the state would purchase these homes if Build Alternative 3 is selected.

In Table 2.31, the acronym RE means properties to be relinquished under the proposed alternative.

Table 2.31 Predicted Future Noise and Barrier Analysis—Build Alternative 3

Receiver Number	Abatement Location	Address	Activity Category	Existing Year (2019) Noise Level (A-Weighted Decibel)	Design Year (2046) Noise Level (A-Weighted Decibel)	Change (A-Weighted Decibel)	Impact Type
Receiver 1	None	8700 Maze Boulevard, Modesto	B	65	67	+2	None
Receiver 2	None	201 Russell Road, Modesto	B	51	55	+4	None
Receiver 3	None	8342 Maze Boulevard, Modesto	B	60	63	+3	None
Receiver 4	None	4118 Maze Boulevard, Modesto	B	66	66	-0	None
Receiver 5	None	419 Faust Road, Modesto	B	45	50	+5	None
Receiver 6	None	7500 Maze Boulevard, Modesto	B	49	53	+4	None
Receiver 7	None	7300 Maze Boulevard, Modesto	B	62	63	+1	None
Receiver 8	None	7000 Maze Boulevard, Modesto	B	67	66	-1	Not Applicable
Receiver 9	None	6912 Maze Boulevard, Modesto	B	66	65	-1	None
Receiver 10	None	6800 Maze Boulevard, Modesto	B	66	65	-1	None
Receiver 11	None	137 Texas Boulevard, Modesto	B	60	62	+2	None
Receiver 12	None	5500 Maze Boulevard, Modesto	B	56	59	+3	None
Receiver 13	None	195 Stone Avenue, Modesto	B	48	53	+5	None
Receiver 14	None	4500 Maze Boulevard, Modesto	B	49	53	+4	None
Receiver 15	None	4218 Maze Boulevard, Modesto	B	59	62	+3	None
Receiver 16	None	4012 Maze Boulevard, Modesto	B	58	62	+4	None
Receiver 17	None	R17: 4006 Maze Boulevard, Modesto	B	62	65	+3	None
Receiver 18	None	137 Dakota Avenue, Modesto	B	58	62	+4	None
Receiver 19	RE	4149 Maze Boulevard, Modesto	B	62	68	+6	None
Receiver 20	RE	4501 Maze Boulevard, Modesto	B	65	79	+14	Not Applicable
Receiver 21	RE	5019 Maze Boulevard, Modesto	B	63	75	+12	Not Applicable
Receiver 22	None	5525 Maze Boulevard, Modesto	B	55	62	+7	None
Receiver 23	RE	6001 Maze Boulevard, Modesto	B	65	81	+16	Not Applicable
Receiver 24	RE	6337 Maze Boulevard, Modesto	B	62	72	+10	Not Applicable
Receiver 25	RE	137 North Hart Road, Modesto	B	62	72	+10	Not Applicable
Receiver 26	RE	7243 Maze Boulevard, Modesto	F	64	77	+13	Not Applicable
Receiver 27	RE	7243 Maze Boulevard, Modesto	B	63	76	+13	Not Applicable
Receiver 28	RE	7601 Maze Boulevard, Modesto	B	61	70	+9	Not Applicable
Receiver 29	RE	7713 Maze Boulevard, Modesto	B	58	66	+8	Not Applicable
Receiver 30	RE	7937 Maze Boulevard, Modesto	B	62	74	+12	Not Applicable

Receiver Number	Abatement Location	Address	Activity Category	Existing Year (2019) Noise Level (A-Weighted Decibel)	Design Year (2046) Noise Level (A-Weighted Decibel)	Change (A-Weighted Decibel)	Impact Type
Receiver 31	RE	556 North Maze Boulevard, Modesto	B	63	73	+10	Not Applicable
Receiver 32	RE	4501 Maze Boulevard, Modesto	B	62	71	+9	Not Applicable
Receiver 33	RE	4413 Maze Boulevard, Modesto	B	64	77	+13	Not Applicable
Receiver 34	None	4325 Maze Boulevard, Modesto	B	54	60	+6	None
Receiver 35	None	6735 Maze Boulevard, Modesto	B	48	55	+7	None
Receiver 36	RE	6943 Maze Boulevard, Modesto	B	64	80	+16	Not Applicable

RE= Relinquished properties under Alternative 3

Build Alternative 4

Table 2.32 shows the modeling results with existing and predicted design year traffic noise level impacts for Build Alternative 4. Build Alternative 4 is mostly residential and composed of 36 homes represented by 36 receivers. Table 2.32 lists the represented receivers for the homes that would be potentially purchased by the state. The noise study determined that Build Alternative 4 would not result in impacts to noise-sensitive receivers for land uses under Activity Category F or Activity Category B (see Table 2.32). The receiver locations for Build Alternative 4 are represented in Figure 2-28a and Figure 2-28b.

Noise abatement was not considered for Build Alternative 4 because most receivers/homes within the project limits are close to the proposed new facility; therefore, the state would purchase these homes if Build Alternative 4 is selected.

In Table 2.32, the acronym RE means properties to be relinquished under the proposed alternative.

Table 2.32 Existing and Predicted Future Noise and Barrier Analysis—Build Alternative 4

Receiver Number	Abatement Location	Address	Activity Category	Existing Year (2019) Noise Level (A-Weighted Decibel)	Design Year (2046) Noise Level (A-Weighted Decibel)	Change (A-Weighted Decibel)	Impact Type
Receiver 1	RE	8700 Maze Boulevard, Modesto	B	65	80	+15	None
Receiver 2	RE	201 Russell Road, Modesto	B	51	58	+7	None
Receiver 3	RE	8342 Maze Boulevard, Modesto	B	60	73	+13	None
Receiver 4	RE	4118 Maze Boulevard, Modesto	B	66	78	+12	None
Receiver 5	RE	419 Faust Road, Modesto	B	45	51	+6	None
Receiver 6	RE	7500 Maze Boulevard, Modesto	B	48	55	+7	None
Receiver 7	RE	7300 Maze Boulevard, Modesto	B	62	76	+14	None
Receiver 8	RE	7000 Maze Boulevard, Modesto	B	67	77	+10	Not Applicable
Receiver 9	RE	6912 Maze Boulevard, Modesto	B	65	80	+15	None
Receiver 10	RE	6800 Maze Boulevard, Modesto	B	65	78	+13	None
Receiver 11	RE	137 Texas Boulevard, Modesto	B	59	70	+11	None
Receiver 12	RE	5500 Maze Boulevard, Modesto	B	55	63	+8	None
Receiver 13	RE	195 Stone Avenue, Modesto	B	48	55	+7	None
Receiver 14	RE	4500 Maze Boulevard, Modesto	B	48	56	+8	None
Receiver 15	RE	4218 Maze Boulevard, Modesto	B	58	69	+11	None
Receiver 16	RE	4012 Maze Boulevard, Modesto	B	57	65	+8	None
Receiver 17	RE	R17: 4006 Maze Boulevard, Modesto	B	62	68	+6	None
Receiver 18	RE	137 Dakota Avenue, Modesto	B	58	61	+3	None
Receiver 19	RE	4149 Maze Boulevard, Modesto	B	61	63	+2	None
Receiver 20	RE	4501 Maze Boulevard, Modesto	B	65	65	0	Not Applicable
Receiver 21	RE	5019 Maze Boulevard, Modesto	B	63	64	+1	Not Applicable
Receiver 22	RE	5525 Maze Boulevard, Modesto	B	54	58	+4	None
Receiver 23	RE	6001 Maze Boulevard, Modesto	B	64	65	+1	Not Applicable
Receiver 24	RE	6337 Maze Boulevard, Modesto	B	61	63	+2	Not Applicable
Receiver 25	RE	137 North Hart Road, Modesto	B	61	63	+2	Not Applicable
Receiver 26	RE	7243 Maze Boulevard, Modesto	F	64	64	0	Not Applicable
Receiver 27	RE	7243 Maze Boulevard, Modesto	B	62	64	+2	Not Applicable
Receiver 28	RE	7601 Maze Boulevard, Modesto	B	60	63	+3	Not Applicable
Receiver 29	RE	7713 Maze Boulevard, Modesto	B	58	61	+3	Not Applicable
Receiver 30	RE	7937 Maze Boulevard, Modesto	B	62	64	+2	Not Applicable
Receiver 31	RE	556 North Maze Boulevard, Modesto	B	63	64	+1	Not Applicable

Receiver Number	Abatement Location	Address	Activity Category	Existing Year (2019) Noise Level (A-Weighted Decibel)	Design Year (2046) Noise Level (A-Weighted Decibel)	Change (A-Weighted Decibel)	Impact Type
Receiver 32	RE	4501 Maze Boulevard, Modesto	B	61	63	+2	Not Applicable
Receiver 33	RE	4413 Maze Boulevard, Modesto	B	64	64	0	Not Applicable
Receiver 34	RE	4325 Maze Boulevard, Modesto	B	53	57	+4	None
Receiver 35	RE	6735 Maze Boulevard, Modesto	B	48	53	+5	None
Receiver 36	RE	6943 Maze Boulevard, Modesto	B	64	65	+1	Not Applicable

RE= Relinquished properties under Alternative 4

CEQA Noise Analysis

When determining whether a noise impact is significant under the California Environmental Quality Act, a comparison of the baseline noise level and the build noise level must be evaluated. The California Environmental Quality Act noise analysis is completely independent of the National Environmental Policy Act/23 Code of Federal Regulations Part 772 analysis discussed in Chapter 2, 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 sensitivity of the noise receptors, the magnitude of the noise increase, the number of homes affected, and the absolute noise level.

The 2011 Caltrans Traffic Noise Analysis Protocol (Protocol) was used for determining the noise impacts of the project. According to the Protocol, and in accordance with Title 23 Code of Federal Regulations 772, a noise impact occurs when the future noise level with the project results in at least 12 dB greater than existing noise levels, or where predicted design year traffic noise levels approach or exceed the noise abatement criteria for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered for reasonability and feasibility.

Under the California Environmental Quality Act, noise impact evaluations no longer use the 12-decibel threshold when determining significant impacts for all projects. According to the protocol, cases where an increase of less than 12 dB may approach significance if it occurred in an environment that would otherwise be quiet and rural. Similarly, it is possible to have a 12 dB increase, without a significant impact due to an existing noisy urban environment. Additionally, the Protocol notes that a 3 dBA difference is generally the point at which the human ear will perceive a difference in noise level.

In 1956, the state of California adopted a freeway corridor on an alignment half a mile north of the existing State Route 132 (Maze Boulevard), which encompasses Build Alternatives 1 and 2 of the proposed project. The current land use in the area is relatively rural and quiet, made up of agricultural land and farmland with rural homes scattered throughout. As future land use plans for the freeway corridor come to fruition, potential noise increases in the area are expected.

A total of 41 potentially impacted receivers, each representing nearby single-family homes, were studied between the project's post miles. The predicted noise level increase at the receptor locations ranged from 0 to 22 decibels. Under Build Alternatives 1 and 2, Receiver 38 and Receiver 39 were found to have an increase that exceeds 12 decibels, between the existing assumed rural background noise level of 48 A-weighted decibels, and the predicted noise levels of Build Alternatives 1 and 2. The existing noise level at Receiver 38 is 48 A-weighted decibels; the predicted noise level under Build Alternative 2 would be 66 A-weighted decibels. There would be an increase of 17 A-weighted decibels between existing noise levels and Build Alternative 2. The existing noise level at Receiver 39 is 48 A-weighted decibels; the predicted noise level under Build Alternative 2 would be 70 A-weighted decibels. There would be

an increase of 22 A-weighted decibels between existing noise levels and Build Alternative 2. Overall, the increases of 17 and 22 decibels between the existing noise levels and the predicted noise levels under Build Alternative 2 would be highly perceptible to the human ear.

When considering the absolute future noise level, receptors that exceed the designated noise level threshold of 67 A-weighted decibels for homes (as designated by the noise abatement criteria) may have significant impacts. According to the Protocol, if two people are speaking, 67 A-weighted decibels is the approximate noise level at which human speech is interfered with. Under Build Alternative 2, the design year build noise level for Receiver 38 is 66 A-weighted decibels, which approaches the threshold of 67 A-weighted decibels. The noise level for Receiver 39 is 70 A-weighted decibels, which exceeds the designated noise level threshold, and would potentially interfere with this area of human use.

The two receivers—Receiver 38 and Receiver 39—potentially impacted under the California Environmental Quality Act represent roughly 5 percent of the homes studied throughout the project area. When considering the total number of homes impacted, this is not considered to be significant. Additionally, the environmental setting contributes to the noise impact under Build Alternatives 1 and 2. The existing land use within the project limits is composed of homes separated by agricultural land and farmland, with no existing traffic near these receivers. Considering the receivers would be next to the proposed Build Alternatives 1 and 2, the noise decibel increase would impact an otherwise quiet rural environment. However, due to the future land use designation of the corridor and the expectation of potential noise increases, a significant noise impact under the California Environmental Quality Act would not occur as a result of the construction of Build Alternatives 1 and 2.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements; as traffic congestion increases, so would the noise levels along the existing State Route 132 (Maze Boulevard).

Noise Abatement Considered

Federal Highway Administration standards and the Caltrans Traffic Noise Analysis Protocol require that noise abatement be considered for projects that are predicted to result in traffic noise impacts as being a 12-dB increase above existing conditions. Noise barriers are the most common feature of noise abatement measures. For the project, soundwalls would be the same as noise barriers, and each soundwall was evaluated for feasibility based on its achievable noise reduction of at least 5 A-weighted decibels. For each soundwall found to be acoustically feasible, it would be evaluated for reasonableness, based on cost allowances and the noise reduction design goal of 7 A-weighted decibels at one or more benefitted receivers. The proposed soundwall heights for this project are between 8 feet to 14 feet.

A Noise Abatement Decision Report was completed in March 2020. Per 23 Code of Federal Regulations 772, noise abatement is considered where traffic noise impacts

are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the protocol include the following:

- Building noise barriers.
- Using traffic management measures to regulate types of vehicles and speeds.
- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project.
- Acquiring property to serve as a buffer zone.
- Acoustically insulating public use or nonprofit institutional structures.

These abatement options have been considered; however, because of the constrained configuration of the project, abatement in the form of soundwalls is the only abatement measure considered to be feasible. Noise barrier analysis was conducted by placing soundwalls at the mainline shoulders of the highway, on-ramp and off-ramp shoulders, and right-of-way lines.

Five soundwalls were proposed for this project under Build Alternatives 1 and 2 within the proposed highway corridor. All soundwalls have been evaluated for feasibility based on achievable noise reduction (5 dB or more). A reasonable cost allowance was calculated for the five feasible proposed soundwalls under Build Alternatives 1 and 2. Table 2.32 shows the existing noise levels as well as predicted future noise levels at receiver locations for the proposed soundwalls with heights ranging from 8 feet to 14 feet. The soundwall height limit was chosen according to the Caltrans Highway Design Manual, which limits the maximum height of the soundwall to 14 feet—measured from the pavement surface at the face of the safety shape barrier—when located 15 feet or less from the edge of the traveled way. The soundwalls proposed under both Build Alternatives 1 and 2 are proposed on the edge of the shoulder, which is 10 feet from the edge of the traveled way.

Soundwalls 1, 2, 3, 4, and 5 were evaluated. Soundwall 5 was not acoustically feasible. None of the other noise barriers—soundwalls 1 through 4—were cost-effective from an engineering cost evaluation perspective. As shown in Table 2.32, soundwalls 1 and 3 have a reasonable allowance of up to $214,000; however, the estimated cost to build each wall is $2,000,000. Soundwalls 2 and 4 have a reasonable allowance of up to $107,000; however, the estimated cost to build each wall is up to $1,100,000.

Table 2.33 Summary of Abatement Measures Evaluated

Barrier	Height (Feet)	Acoustically Feasible?	Number of Benefited Homes	Design Goal Achieved	Total Reasonable Allowance	Estimated Construction Cost	Cost Less Than Allowance?
SW1	8	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW1	10	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW1	12	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW1	14	Yes	2	Yes	$214,000	$2,000,000	No
SW2	8	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW2	10	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW2	12	Yes	1	Yes	$107,000	$1,700,000	No
SW2	14	Yes	1	Yes	$107,000	$2,000,000	No
SW3	8	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW3	10	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW3	12	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW3	14	Yes	2	Yes	$214,000	$2,000,000	No
SW4	8	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW4	10	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW4	12	Yes	1	Yes	$107,000	$950,000	No
SW4	14	Yes	1	Yes	$107,000	$1,100,000	No
SW5	8	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW5	10	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW5	12	No	0	No	Not Applicable	Not Applicable	Not Applicable
SW5	14	Yes	0	No	Not Applicable	Not Applicable	Not Applicable

The measures taken to determine the preliminary noise abatement decision are based on preliminary project alignments and profiles, which may be subject to change. Even though abatement was not considered feasible in the Noise Abatement Decision Report, the project team will explore options during final design like window modifications and earthen berms as noise abatement options. As such, the physical characteristics of noise abatement described may also be subject to change. If conditions have substantially changed during the final design, noise abatement may not be constructed. The final decision on noise abatement would be made upon completion of the project design.

Avoidance, Minimization, and/or Abatement Measures

The Noise Abatement Decision Report found soundwalls did not meet the criteria for consideration toward the number of benefitting locations. As described in this section, Build Alternatives 1 and 2 would result in an adverse change in the noise environment throughout the proposed project corridor.

No substantial noise effects are expected for Build Alternatives 3 and 4 as a result of the construction and operation of the proposed project. As such, no avoidance, minimization, and/or mitigation measures would be required for Build Alternatives 3 and 4.

2.2.7 Energy

Regulatory Setting

The National Environmental Policy Act (42 U.S. Code Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

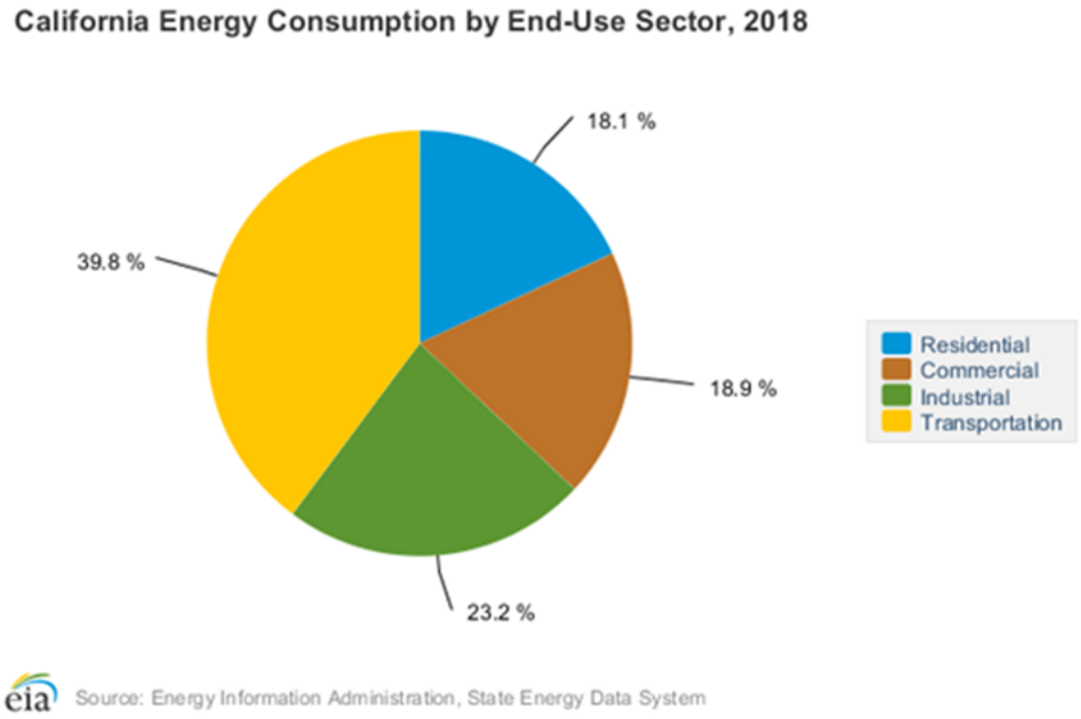
The California Environmental Quality Act Guidelines Section 15126.2(b) and Appendix F, Energy Conservation, require an analysis of a project's energy use to determine if the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

Affected Environment

The following section uses traffic information obtained from the Final Traffic Operations Analysis Report completed in October 2019, and can be found in Volume 3.

In California, the transportation sector consumes the most energy when compared to other sectors. Nearly 40 percent of the energy consumed in 2018 was from transportation. The transportation sector includes rail, aircraft, ships, freight trucks, buses, and automobiles.

Figure 2-29 California Energy Consumption by End-Use Sector, 2018



California is more than 1,000 miles long and 500 miles wide, and with such great distances to travel, transportation dominates California's energy consumption. More motor vehicles are registered, and more vehicle miles are traveled in California than in any other state. Additionally, major metropolitan areas, such as San Francisco and Los Angeles, experience extremely long commute times and traffic delays because of high traffic congestion and long commute distances.

Within the project area, existing State Route 132 (Maze Boulevard) is part of the regional expressway system and is the main east-west corridor in Stanislaus County, State Route 132 is an east-west highway that traverses San Joaquin, Stanislaus, Mariposa and Tuolumne counties in California. State Route 132/Maze Boulevard is generally a two-lane highway that extends between Interstate 580 in San Joaquin County to State Route 49 in Mariposa County. It exists as a four-lane facility through Downtown Modesto, east of State Route 99. Within the study area, the posted speed limit on State Route 132/Maze Boulevard varies between 25 miles per hour to 40 miles per hour within City limits and 55 miles per hour west of Rosemore Avenue. It is of particular importance to the regional transportation network because of the extensive farm-to-market, recreational, and other commerce-related travel on the highway daily.

Stanislaus County is an important food-processing region. Poultry, dairy, and vegetable products from the County are processed and distributed throughout the world every day. Goods movement is the result of production activities within and outside of the region, and movement takes place within a complex system of routes, modes, terminals, and warehouse facilities. The State has recognized the importance

of agricultural goods movement in Central Valley areas such as Stanislaus County. The State's Goods Movement Action Plan (November 2007) identifies four high priority gateway regions in California that are necessary to support the continued growth of the California economy. The Central Valley region, which includes State Route 99 and Interstate 5 and other important east-west corridors that traverse Stanislaus County, is one of these high-priority regions. Traffic congestion and operational conflicts between trucks and passenger vehicles have been identified as key issues that need to be addressed to maintain an efficient goods movement. The high percentage of trucks on the roads in the study area reflects the high demand in the area for goods movement. Over 90 interstate truck lines and 100 contract carriers operate in the Stanislaus region. These operators, distributed throughout the region, rely on the regional system of State Highways, expressways, and major arterials to move supplies and product to the backbones of the highway freight system (State Route 99, Interstate 5, State Route 132/Maze Boulevard). Trains provide an economical means of transporting bulk goods. The Stanislaus region is serviced by two transcontinental railroad systems, the Union Pacific and the Burlington Northern Santa Fe Railway, and two local railroad systems, the Modesto and Empire Traction Company and the Sierra Railroad. The Port of Stockton, 30 miles north of Stanislaus County, provides deep-water access to the Pacific Ocean. Rail and truck transport to and from the port is available. Within the study area, the Union Pacific Railway runs parallel to State Route 99 with an average of 19 trains per day traveling through the area.

The current average daily traffic volumes for this segment of existing State Route 132 (Maze Boulevard) is 13,300 vehicles. The traffic forecast estimates the percentage of trucks on State Route 132 (Maze Boulevard) to be as high as 7 percent of average daily traffic, 25 percent of morning peak hour traffic, and 8 percent of evening peak hour traffic (Section 5.4 of the Traffic Operations Analysis Report provides further information on the traffic data for the project area).

The existing segments of State Route 132/Maze Boulevard from Gates/Paradise Road to Dakota Avenue were analyzed using the Highway Capacity Manual two-lane highway Level of Service methodology. According to the Highway Capacity Manual, existing State Route 132/Maze Boulevard is classified as a Class 1 facility because it operates as a regional route. Table 2.33.1 presents the 2018 two-lane highway Level of Service for the study segments along State Route 132/Maze Boulevard. As shown in Table 2, all study segments operate at Level of Service D or better during the morning and evening peak hours except for the segment of State Route 132 between Dakota Avenue and Stone Avenue during the evening peak hour. State Route 132 between Dakota Avenue and Stone Avenue is operating at Level of Service E during the evening peak hour.

Table 2.33.1 Existing Conditions Year 2018 Two-Lane Highway Level of Service

Segment	Morning Peak Hour Percent Time Spent Following	Morning Peak Hour Average Travel Speed (miles per hour)	Morning Peak Hour Level of Service	Evening Peak Hour Percent Time Spent Following	Evening Peak Hour Average Travel Speed (miles per hour)	Evening Peak Hour Level of Service
State Route 132 (Maze Boulevard) between 1 mile east of Dakota Avenue and Dakota Avenue	71.6	48.1	D	80.0	46.4	D
State Route 132 (Maze Boulevard) between Dakota Avenue and Stone Avenue	74.8	47.5	D	80.8	45.7	E
State Route 132 (Maze Boulevard) between Stone Avenue and Hart Road	74.7	47.5	D	79.6	46.5	D
State Route 132 (Maze Boulevard) between Hart Road and Gates / Paradise Road	76.2	47.3	D	81.6	45.6	D
State Route 132 (Maze Boulevard) between Gates Road and 1 mile west of Gates Road	75.6	47.5	D	77.3	46.7	D

The total network performance measures of effectiveness for existing morning and evening peak hour modeled for 2018 are shown in Table 2.33.2. These measures of effectiveness reflect the overall operations on State Route 132/Maze Boulevard from Dakota Avenue to Gates Road and the New State Route 132 from Dakota Avenue to Gates Road. Measures of effectiveness including average travel time and average speed are the most informative as they relate directly to the traveler experience through the corridor.

Table 2.33.2 Existing Conditions Year 2018 Total Network Performance

Measure of Effectiveness	Morning Peak Hour	Evening Peak Hour
Total Vehicle Hours of Delay	24.6	37
Total Stops	1,138	2,250
Vehicle Miles Traveled	8,217.30	10,510
Vehicle Hours Traveled	179.5	237.6
Total Fuel Consumption (gallons)	247.6	317.3
Total Vehicle Emissions (pounds of carbon dioxide)	4,679.6	5,997.0
Average Speed (miles per hour)	46	44
Vehicles Entering Network in Peak Hour	1851	2727
Vehicles Exiting Network in Peak Hour	1881	2729
Percent Demand Served	101.6	100.1

Source: Results Based on five SimTraffic Version 10 Model Runs

Environmental Consequences

For the traffic study, population for Existing Year 2018 was 557,320. By Open to Traffic Year 2026, the population will be 614,011. By Horizon Year 2046, the population will be 745,045. Agriculture remains the main source of employment in Stanislaus County. The main commodities include milk, almonds, walnuts, cattle, and chickens, generating more than $200 million per year in output. The largest gains in job growth were seen in education and healthcare, leisure and hospitality, wholesale and retail trade, and construction.

Level of Service is a qualitative measure that describes operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. Congestion associated with low Level of Service, contributes to inefficient energy consumption as vehicles use extra fuel while idling and accelerating in stop-and-go traffic or when traffic is moving at slower speeds. The optimum speed for fuel efficiency is 55 miles per hour.

The annual average daily traffic speed is associated with traffic speeds that represent the whole year, at all times of day/night, not just the congested peak-hour. This congestion relief project will expand the existing two-lane highway to a four-lane divided expressway, raising the posted speed limit from 55 to 65 miles per hour. The annual average daily traffic speed is much closer to the posted speed limit, as traffic volumes outside of the peak-hour are moving at free-flow speeds. The annual average speed for a project condition would be affected by its respective posted speed limit. For example, the future build condition would have an annual average daily speed of 65 miles per hour for light vehicles, while the future no-build condition would have an annual average daily speed of 55 miles per hour. The future build condition would consequently cause a less efficient usage of fuel because the speed limit would be higher than the optimum speed for fuel efficiency (55 miles per hour). This is a necessary drawback, as peak-hour congestion needs to be resolved by the proposed project. The traffic in the general project vicinity will, however, operate at a higher level of service and operate with more efficiency.

No-Build Alternative

The No-Build Alternative would leave existing State Route 132 (Maze Boulevard) in its current condition as a two-lane conventional highway. The No-Build Alternative does not meet the purpose and need because it would not improve mobility through western Stanislaus County. Also, the No-Build Alternative would not provide adequate capacity for regional movement of traffic and goods and would not provide consistency with the existing and planned local, regional, and interregional transportation facilities. The No-Build Alternative provides a basis for comparing the effects of the build alternatives. The No-Build (No Action) Alternative consists of those transportation projects that are already planned for construction by or before 2018. Consequently, the No-Build Alternative represents future travel conditions in the State Route 132 Dakota Avenue to Gates Road study area without the State Route 132 Dakota Avenue to Gates Road project. The No-Build Alternative is compared to the build alternatives (1, 2, 3, and 4) to meet NEPA requirements.

Table 2.33.3 No-Build Traffic Conditions

Year	Annual Average Daily Traffic Total	Annual Average Daily Traffic Truck (12 percent)	Morning Peak Volume	Morning Peak Speed	Morning Peak Level of Service	Evening Peak Volume	Evening Peak Speed	Evening Peak Level of Service
2026	15,000	2,535	1,300	43	D	1,500	41	E
2046	19,500	3,250	1,550	26	E	1,950	28	E

“Peak” hour refers to the most critical time period of the day when traffic volume is at its highest. Traffic analysis during peak hour focuses on the volume, flow, and speed of a facility while at maximum capacity. Similarly, “off-peak” hour refers to the time period when volume, flow, and speed of a facility is at its lowest volume.

The Dakota Avenue to Gates Road project focuses on the peak hour traffic volumes, speeds, and Level of Service (LOS) and compares these values for the various build/no-build scenarios to analyze the differences of traffic flow between them. For this study, “peak” refers to a 1-hour period in which traffic volume, speed, or Level of Service is at its most congested over a 24-hour period, and “off-peak” refers to an average volume, speed or Level of Service during the least congested traffic over a 24-hour period. Each period also has an morning and evening hour referring to morning or evening traffic conditions.

The total vehicle hours, total vehicle delay, and total vehicle miles traveled in the project area would be greater under the No-Build (No-Action) Alternative and would have a direct impact on energy use as a result of future traffic operations. The excessive volume of traffic that existing State Route 132 (Maze Boulevard) would not be able to accommodate would be diverted onto other local roadways, such as Beckwith Road and Paradise Road. This would result in unacceptable operations on those roadways and increased use of energy due to inefficient travel. The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements that would relieve congestion or other transportation inefficiencies. Therefore, there would be adverse impacts related to energy consumption under the No-Build (No-Action) Alternative.

Traffic forecasts predict that under the No-Build (No-Action) Alternative, the Level of Service during the peak evening hour would remain at Level of Service E through 2046, and average speeds and energy efficiency would decrease on local roadways throughout the project area.

Project Build Alternatives

2026

Construction Year 2026 Two-Lane Highway Analysis was conducted for Alternatives 1 through 3 and 4 versus the No Project Conditions Scenario. Table 2.33.4 presents the Construction Year 2026 Two-Lane Highway Analysis for No Project Conditions.

Table 2.33.4 Construction Year 2026 No-Build Conditions State Route 132/Maze Boulevard Two-Lane Highway Level of Service

Segment	Morning Peak Hour Percent of Time Spent Following	Morning Peak Hour Average Travel Speed	Morning Peak Hour Level of Service	Evening Peak Hour Percent of Time Spent Following	Evening Peak Hour Average Travel Speed	Evening Peak Hour Level of Service
Eastbound from 1 mile west of Gates Road to Gates Road	44.4	44.2	D	95.4*	39.6*	F*
Eastbound from Gates Road to Hart Road	44.4	43.6	D	84.5*	43.1*	E*
Eastbound from Hart Road to Maze Boulevard	35.8	46.8	C	84.8*	43.5*	E*
Eastbound from Maze Boulevard to Dakota Avenue	23.0	55.3	A	63.8	51.5	C
Eastbound from Dakota Avenue to 1 mile east of Dakota Avenue	18.5	58.1	A	50.7	54.8	C
Westbound from 1 Mile east of Dakota Avenue to Dakota Avenue	17.0	58.1	A	19.5	54.3	B
Westbound from Dakota Avenue to Maze Boulevard	32.9	56.4	A	40.1	52.1	B
Westbound from Maze Boulevard to Hart Road	77.9	45.6	D	69.9	43.7	D
Westbound from Hart Road to Gates Road	79.4	44.2	D	65.8	43.6	D
Westbound from Gates Road to 1 mile west of Gates Road	89.1*	43.1*	E*	73.7*	40.0*	F*

Note: results containing * denote locations where storage length is exceeded

Table 2.33.5 presents the Construction Year 2026 Two-Lane Highway Analysis for Alternatives 1, 2, 3 and 4 on State Route132 (Maze Boulevard). Two-lane analysis was conducted for the peak hour volumes for both morning and evening peak hours.

Table 2.33.5 Construction Year 2026 Two-Lane Highway Level of Service

Segment	Alternative 1 Percent of Time Spent Following	Alternative 1 Average Travel Speed (miles per hour)	Alternative 1 Level of Service	Alternative 2 Percent of Time Spent Following	Alternative 2 Average Travel Speed (miles per hour)	Alternative 2 Level of Service	Alternatives 3 and 4 Percent of Time Spent Following	Alternatives 3 and 4 Average Travel Speed (miles per hour)	Alternatives 3 and 4 Level of Service
Morning Peak Hour—State Route 132 (Maze Boulevard) east of Hart Road	68.1	49.7	D	38.7	54.5	B	12.5	57.0	A
Evening Peak Hour—State Route 132 (Maze Boulevard) east of Hart Road	62.6	50.1	C	36.1	55.0	B	17.6	56.7	A
Morning Peak Hour—State Route 132 (Maze Boulevard) west of Hart Road	72.6	47.6	D	42.9	52.8	B	15.4	55.8	A
Evening Peak Hour—State Route 132 (Maze Boulevard) west of Hart Road	59.5	49.6	C	35.8	54.4	B	16.1	56.1	A
Morning Peak Hour—State Route 132 (Maze Boulevard) from Gates / Paradise Road to 1 mile west of Gates / Paradise Road	94.8*	41.4*	F*	99.4*	44.3*	F*	100.0*	42.3*	F*
Evening Peak Hour—State Route 132 (Maze Boulevard) from Gates / Paradise Road to 1 mile west of Gates / Paradise Road	97.1*	38.8*	F*	94.1*	46.4*	E*	100.0*	41.2*	F*

For all the Alternatives, the two-lane segment beyond Gates Avenue would operate at Level of Service F with an average speed between 38.8 to 46.4 miles per hour in some cases. State Route 132/Maze Boulevard between Dakota Avenue and Gates Road would operate at Level of Service D or better for both morning and evening peak hours during Construction Year 2026.

Construction Year 2026 Multi-lane Freeway operations were evaluated. Table 2.33.6 presents the Construction Year 2026 Multi-Lane Level of Service results for each of the study Alternatives. As seen in Table 2.33.6, all multi-lane segments would operate within acceptable Level of Service.

Table 2.33.6. Construction Year 2026 New State Route 132 Freeway Analysis

Location	Number of Lanes	Alternative 1 Density	Alternative 1 Level of Service	Alternative 2 Density	Alternative 2 Level of Service	Alternatives 3 and 4 Density	Alternatives 3 and 4 Level of Service
Morning Peak Hour—Eastbound from Paradise Road to Gates Road	2	3.3	A	No value	No value	No value	No value
Evening Peak Hour—Eastbound from Paradise Road to Gates Road	2	8.7	A	No value	No value	No value	No value
Morning Peak Hour—Eastbound from Gates Road to Hart Road	2	3.3	A	4.0	A	2.7	A
Evening Peak Hour—Eastbound from Gates Road to Hart Road	2	8.6	A	11.4	B	13.1	B
Morning Peak Hour—Eastbound from Hart Road to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	2.3	A
Evening Peak Hour—Eastbound from Hart Road to State Route 132/Maze Boulevard	2	No value	A	No value	No value	10.8	A
Morning Peak Hour—Eastbound from Hart Road to City of Modesto	2	2.7	A	2.6	A	No value	No value
Evening Peak Hour—Eastbound from Hart Road to City of Modesto	2	7.1	A	10.5	A	No value	No value
Morning Peak Hour—Eastbound from State Route 132/Maze Boulevard to Dakota Avenue	2	No value	No value	No value	No value	1.3	A
Evening Peak Hour—Eastbound from State Route 132/Maze Boulevard to Dakota Avenue	2	No value	A	No value	No value	5.6	A
Morning Peak Hour—Eastbound from Dakota Avenue to City of Modesto	2	No value	No value	No value	No value	1.1	A
Evening Peak Hour—Eastbound from Dakota Avenue to City of Modesto	2	No value	No value	No value	No value	4.4	A
Morning Peak Hour—Westbound from City of Modesto to Dakota Avenue	2	No value	No value	No value	No value	1.4	A
Evening Peak Hour—Westbound from City of Modesto to Dakota Avenue	2	No value	No value	No value	No value	0.9	A

Location	Number of Lanes	Alternative 1 Density	Alternative 1 Level of Service	Alternative 2 Density	Alternative 2 Level of Service	Alternatives 3 and 4 Density	Alternatives 3 and 4 Level of Service
Morning Peak Hour—Westbound from City of Modesto to Hart Road	2	5.5	A	11.0	A	No value	No value
Evening Peak Hour—Westbound from City of Modesto to Hart Road	2	4.1	A	4.7	A	No value	No value
Morning Peak Hour—Westbound from Dakota Avenue to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	1.7	A
Evening Peak Hour—Westbound from Dakota Avenue to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	2.0	A
Morning Peak Hour—Westbound from State Route 132/Maze Boulevard to Hart Road	2	No value	No value	No value	No value	15.3	B
Evening Peak Hour—Westbound from State Route 132/Maze Boulevard to Hart Road	2	No value	No value	No value	No value	6.0	A
Morning Peak Hour—Westbound from Hart Road to Gates Road	2	6.0	A	15.4	B	15.4	B
Evening Peak Hour—Westbound from Hart Road to Gates Road	2	5.1	A	6.1	A	6.8	A
Morning Peak Hour—Westbound from Gates Road to Paradise Road	2	6.3	A	No value	No value	No value	No value
Evening Peak Hour—Westbound from Gates Road to Paradise Road	2	5.1	A	No value	No value	No value	No value

Table 2.33.7 presents the measures of effectiveness estimated for the study area in 2026. These measures of effectiveness reflect the overall operations on State Route 132/Maze Boulevard from Dakota Avenue to Gates Road and the New State Route 132 from Dakota Avenue to Gates Road. measures of effectiveness including average travel time and average speed are the most informative as they relate directly to the traveler experience through the corridor.

Table 2.33.7 Construction Year 2026 Total Network Performance

Measure of Effectiveness	No-Build Morning Peak Hour	No-Build Evening Peak Hour	Alternative 1 Morning Peak Hour	Alternative 1 Evening Peak Hour	Alternative 2 Morning Peak Hour	Alternative 2 Evening Peak Hour	Alternatives 3 and 4 Morning Peak Hour	Alternatives 3 and 4 Evening Peak Hour
Total Vehicle Hours of Delay	43.8	65.5	30.6 (-30.1%)	36.4 (-44.4%)	16.9 (-61.4%)	24.5 (-62.6%)	65.4 (49.3%)	64.9 (-0.9%)
Total Stops	2,163	3,837	2,213 (2.3%)	2,676 (-30.3%)	583 (-73.0%)	674 (-82.4%)	3,231 (49.4%)	3,509 (-8.5%)
Vehicle Miles Traveled	9,949.0	12,837.7	7,954.3 (-20.0%)	10,689.7 (-16.7%)	10,911.5 (9.7%)	12,298.8 (-4.2%)	13,090.7 (31.6%)	14,025.9 (9.3%)
Vehicle Hours Traveled	232.9	315.8	172.1 (-26.1%)	231.0 (-26.9%)	192.7 (-17.3%)	229.7 (-27.3%)	284.8 (22.3%)	366.3 (16.0%)
Total Fuel Consumption (gallons)	306.6	402.5	275.7 (-10.1%)	365.2 (-9.3%)	366.2 (19.4%)	402.5 (0%)	452.1 (47.5%)	503.6 (25.1%)
Total Vehicle Emissions (pounds of carbon dioxide)	5,794.7	7,607.3	5,210.7 (-10.1%)	6,902.3 (-9.3%)	6,921.2 (19.4%)	7,607.3 (0%)	8,544.7 (47.5%)	9,518.0 (25.1%)
Average Speed (miles per hour)	43	41	46 (7.0%)	47 (14.6%)	57 (32.6%)	54 (31.7%)	46 (7.0%)	46 (12.2%)
Vehicles Entering Network in Peak Hour	2,515	3,465	2,459 (-2.2%)	2,796 (-19.3%)	4,426 (76.0%)	2,695 (-22.2%)	2,667 (6.0%)	3,171 (-8.5%)
Vehicles Exiting Network in Peak Hour	2,505	3,475	2,446 (-2.4%)	2,783 (-19.9%)	4,423 (76.6%)	2,690 (-22.6%)	2,655 (6.0%)	3,175 (-8.6%)
Percent Demand Served	99.6%	100.3%	99.5% (-0.1%)	99.5% (-0.8%)	99.9% (0.3%)	99.8% (-0.5%)	99.6% (-0.1%)	100.1% (-0.2%)

Source: Results Based on ten (10) SimTraffic Version 10 Model Runs.

Westbound Morning Peak Hour

Alternative 1 shows an 30.1 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had a decrease of 20.0 percent. The average speed would increase to 46 miles per hour when compared to the No Project Conditions of 43 miles per hour.

Alternative 2 shows an 61.4 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had an increase of 9.7 percent. The average speed would increase to 57 miles per hour when compared to the No Project Conditions of 43 miles per hour.

Alternatives 3 and 4 shows an 49.3 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had an increase of 31.6 percent. The average speed would increase to 46 miles per hour when compared to the No Project Conditions of 43 miles per hour.

Eastbound Evening Peak Hour

Alternative 1 shows an 44.4 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had a decrease of 16.7 percent. The average speed would increase to 47 miles per hour when compared to the No Project Conditions of 41 miles per hour.

Alternative 2 shows an 62.6 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had a decrease of 4.2 percent. The average speed would increase to 54 miles per hour when compared to the No Project Conditions of 41 miles per hour.

Alternatives 3 and 4 shows an 0.90 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had an increase of 9.3 percent. The average speed would increase to 46 miles per hour compared to the No Project Conditions of 41 miles per hour.

2046

Design Year 2046 Two-Lane Highway Analysis was conducted for Alternatives 1 through 3 and 4 versus the No Project Conditions Scenario. Table 2.33.8 presents the Design Year 2046 two-lane highway analysis for No Project Conditions Alternative. Table 2.33.9 presents the western portion of State Route 132/Maze Boulevard at Gates/Paradise Road for Design Year 2046 two-lane analysis for Alternative 1, 2, 3 and 4. Two-lane analysis were conducted for the peak hour volumes for both morning and evening peak.

Table 2.33.8 Design Year 2046 No Project Conditions State Route 132/Maze Boulevard Two-Lane Highway Level of Service

Segment	Morning Peak Hour Percent Time Spent Following	A Morning Peak Hour Average Travel Speed	Morning Peak Hour Level of Service	Evening Peak Hour Percent Time Spent Following	Evening Peak Hour Average Travel Speed	Evening Peak Hour Level of Service
Eastbound from 1 mile west of Gates Road to Gates Road	54.7	45.6	C	100.0*	33.2*	F*
Eastbound from Gates Road to Hart Road	54.7	42.9	D	89.4*	39.8*	E*
Eastbound from Hart Road to Maze Boulevard	51.4	44.5	D	89.9*	40.5*	E*
Eastbound from Maze Boulevard to Dakota Avenue	45.9	53.0	B	72.6	48.4	D
Eastbound from Dakota Avenue to 1 mile east of Dakota Avenue	35.8	54.3	B	67.3	50.4	D
Westbound from 1 Mile east of Dakota Avenue to Dakota Avenue	35.8	54.3	B	51.3	50.7	C
Westbound from Dakota Avenue to Maze Boulevard	48.5	52.8	B	66.8	48.6	D
Westbound from Maze Boulevard to Hart Road	85.4*	43.6*	E*	80.3*	40.6*	E*
Westbound from Hart Road to Gates Road	86.3*	42.1*	E*	80.1*	39.8*	E*
Westbound from Gates Road to 1 mile west of Gates Road	94.8*	39.6*	F*	87.6*	33.3*	F*

Note: Results containing * denote locations where storage length is exceeded.

Table 2.33.9 Design Year 2046 Two-Lane Highway Level of Service

Segment	Alternative 1 Percent of Time Spent Following	Alternative 1 Average Travel Speed (miles per hour)	Alternative 1 Level of Service	Alternative 2 Percent of Time Spent Following	Alternative 2 Average Travel Speed (miles per hour)	Alternative 2 Level of Service	Alternatives 3 and 4 Percent Time Spent Following	Alternatives 3 and 4 Average Travel Speed (miles per hour)	Alternatives 3 and 4 Level of Service
Morning Peak Hour—State Route 132 / Maze Boulevard east of Hart Road	71.9	48.0	D	41.7	52.4	B	20.6	56.5	A
Evening Peak Hour—State Route 132 / Maze Boulevard east of Hart Road	67.2	49.2	D	39.4	54.2	B	20.6	56.5	A
Morning Peak Hour—State Route 132 / Maze Boulevard from west of Hart Road	76.6	45.4	D	46.7	51.0	B	15.1	55.7	A
Evening Peak Hour—State Route 132 / Maze Boulevard from west of Hart Road	65.5	48.5	D	39.8	53.8	B	17.1	55.8	A
Morning Peak Hour—State Route 132 / Maze Boulevard from Gates/Paradise Road to 1 mile west of Gates/Paradise Road	99.3	37.3	F	100.0	38.7	F	69.1	40.0	F
Evening Peak Hour—State Route 132 / Maze Boulevard from Gates/Paradise Road to 1 mile west of Gates/Paradise Road	95.2	33.6	F	100.0	37.1	F	100.0	34.9	F

Table 2.33.10 Design Year 2046 New State Route 132 Freeway Analysis

Location	Number of Lanes	Alternative 1 Density	Alternative 1 Level of Service	Alternative 2 Density	Alternative 2 Level of Service	Alternatives 3 and 4 Density	Alternatives 3 and 4 Level of Service
Morning Peak Hour—Eastbound from Paradise Road to Gates Road	2	6.7	A	No value	No value	No value	No value
Evening Peak Hour—Eastbound from Paradise Road to Gates Road	2	10.7	A	No value	No value	No value	No value
Morning Peak Hour—Eastbound from Gates Road to Hart Road	2	6.6	A	7.9	A	3.9	A
Evening Peak Hour— Eastbound from Gates Road to Hart Road	2	10.6	A	14.9	B	15.0	B
Morning Peak Hour—Eastbound from Hart Road to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	2.7	A
Evening Peak Hour—Eastbound from Hart Road to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	11.6	B
Morning Peak Hour—Eastbound from Hart Road to City of Modesto	2	5.7	A	5.5	A	No value	No value
Evening Peak Hour— Eastbound from Hart Road to City of Modesto	2	7.1	A	12.2	B	No value	No value
Morning Peak Hour—Eastbound from State Route 132/Maze Boulevard to Dakota Avenue	2	No value	No value	No value	No value	1.7	A
Evening Peak Hour— Eastbound from State Route 132/Maze Boulevard to Dakota Avenue	2	No value	No value	No value	No value	6.2	A
Morning Peak Hour—Eastbound from Dakota Avenue to City of Modesto	2	No value	No value	No value	No value	1.5	A
Evening Peak Hour— Eastbound from Dakota Avenue to City of Modesto	2	No value	No value	No value	No value	5.2	A
Morning Peak Hour—Westbound from City of Modesto to Dakota Avenue	2	No value	No value	No value	No value	1.9	A
Evening Peak Hour—Westbound from City of Modesto to Dakota Avenue	2	No value	No value	No value	No value	2.9	A
Morning Peak Hour—Westbound from City of Modesto to Hart Road	2	7.0	A	16.3	B	No value	No value

Location	Number of Lanes	Alternative 1 Density	Alternative 1 Level of Service	Alternative 2 Density	Alternative 2 Level of Service	Alternatives 3 and 4 Density	Alternatives 3 and 4 Level of Service
Evening Peak Hour—Westbound from City of Modesto to Hart Road	2	6.6	A	7.2	A	No value	No value
Morning Peak Hour—Westbound from Dakota Avenue to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	2.3	A
Evening Peak Hour—Westbound from Dakota Avenue to State Route 132/Maze Boulevard	2	No value	No value	No value	No value	4.4	A
Morning Peak Hour—Westbound from State Route 132/Maze Boulevard to Hart Road	2	No value	No value	No value	No value	15.7	B
Evening Peak Hour—Westbound from State Route 132/Maze Boulevard to Hart Road	2	No value	No value	No value	No value	8.0	A
Morning Peak Hour—Westbound from Hart Road to Gates Road	2	7.8	A	18.0	B	16.1	B
Evening Peak Hour—Westbound from Hart Road to Gates Road	2	8.2	A	8.9	A	9.6	A
Morning Peak Hour—Westbound from Gates Road to Paradise Road	2	8.1	A	No value	No value	No value	No value
Evening Peak Hour—Westbound from Gates Road to Paradise Road	2	8.3	A	No value	No value	No value	No value

Table 2.33.11 presents the measures of effectiveness estimated for the study area in 2046. These measures of effectiveness reflect the overall operations on State Route 132/Maze Boulevard from Dakota Avenue to Gates Boulevard and New State Route 132 from Dakota Avenue to Gates Road. Measures of effectiveness including average travel time and average speed are the most informative as they relate directly to the traveler experience through the corridor.

For all the Alternatives, the two-lane segment beyond Gates Avenue would operate at Level of Service F with an average speed between 33.6 to 37.1 miles per hour in some cases. State Route 132/Maze Boulevard between Dakota Avenue to Gates Road would operate at Level of Service D or better for both morning and evening peak hours during Design Year 2046.

Design Year 2046 Multi-lane Freeway operations were evaluated. Table 2.33.10 presents the Design Year 2046 Multi-lane Level of Service results for each of the study Alternatives. As seen in Table 2.33.10, all multi-lane segments would operate at an acceptable Level of Service.

Table 2.33.11 Design Year 2046 Total Network Performance

Measure of Effectiveness	No-Build Morning Peak Hour	No-Build Evening Peak Hour	Alternative 1 Morning Peak Hour	Alternative 1 Evening Peak Hour	Alternative 2 Morning Peak Hour	Alternative 2 Evening Peak Hour	Alternatives 3 and 4 Morning Peak Hour	Alternatives 3 and 4 Evening Peak Hour
Total Vehicle Hours of Delay	226.2	238.4	49.8 (-78.0%)	57.4 (-75.9%)	36.8 (-83.7%)	36.5 (-84.7%)	105.9 (-53.2%)	89.8 (-62.3%)
Total Stops	5,444	6,640	3,103 (-43.0%)	3,487 (-47.5%)	1,199 (-78.0%)	1,011 (-84.8%)	4,195 (-22.9%)	4,879 (-26.5%)
Vehicle Miles Traveled	11,465.0	15,092.5	10,158.4 (-11.4%)	12,534.3 (-17.0%)	13,779.3 (20.2%)	13,602.8 (-9.9%)	15,123.4 (31.9%)	16,419.0 (8.8%)
Vehicle Hours Traveled	566.3	772.6	232.8 (-58.9%)	504.3 (-34.7%)	267.4 (-52.8%)	515.9 (-33.2%)	415.1 (-26.7%)	733.9 (-5.0%)
Total Fuel Consumption (gallons)	435.0	575.9	370.6 (-14.8%)	491.3 (-14.7%)	514.3 (18.2%)	526.9 (-8.5%)	565.3 (30.0%)	661.7 (14.9%)
Total Vehicle Emissions (pounds of carbon dioxide)	8,221.5	10,884.5	7,004.3 (-14.8%)	9,285.6 (-14.7%)	9,720.3 (18.2%)	9,958.4 (-8.5%)	10,684.2 (30.0%)	12,506.1 (14.9%)
Average Speed (miles per hour)	26	28	44 (69.2%)	44 (57.1%)	52 (100.0%)	52 (85.7%)	42 (61.5%)	44 (57.1%)
Vehicles Entering Network in Peak Hour	3,464	4,615	3,161 (-8.7%)	3,371 (-27.0%)	3,413 (-1.5%)	3,418 (-25.9%)	3,516 (1.5%)	4,393 (-4.8%)
Vehicles Exiting Network in Peak Hour	3,306	4,416	3,149 (-4.7%)	3,375 (-23.6%)	3,398 (2.8%)	3,423 (-22.5%)	3,494 (5.7%)	44,00 (-0.4%)
Percent Demand Served	95.4%	95.7%	99.6% (4.4%)	100.1% (4.6%)	99.6% (4.3%)	100.1% (4.7%)	99.4% (4.1%)	100.2% (4.7%)

Source: Results Based on ten (10) SimTraffic Version 10 Model Runs

Westbound Morning Peak Hour

Alternative 1 shows an 78.0 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had a decrease of 11.4 percent. The average speed would increase to 44 miles per hour when compared to the No Project Conditions of 26 miles per hour.

Alternative 2 shows an 83.7 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had an increase of 20.2 percent. The average speed would increase to 53 miles per hour when compared to the No Project Conditions of 26 miles per hour.

Alternatives 3 and 4 shows an 53.2 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had an increase of 31.9 percent. The average speed would increase to 42 miles per hour when compared to the No Project Conditions of 26 miles per hour.

Eastbound Evening Peak Hour

Alternative 1 shows an 75.9 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had a decrease of 17.0 percent. The average speed would increase to 44 miles per hour when compared to the No Project Conditions of 28 miles per hour.

Alternative 2 shows an 84.7 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had a decrease of 9.9 percent. The average speed would increase to 52 miles per hour when compared to the No Project Conditions of 28 miles per hour.

Alternatives 3 and 4 shows an 89.8 percent decrease in Vehicle Hours of Delay when compared to No Project Conditions. Vehicle Miles Traveled had an increase of 8.8 percent. The average speed would increase to 44 miles per hour compared to the No Project Conditions of 28 miles per hour.

Direct Energy Use

The direct energy use for the four Build Alternatives was estimated based on the reported vehicle miles traveled and vehicle hours of delay for the project.

The four Build Alternatives would improve travel conditions and reduce energy use through capacity and operational improvements in 2026 (construction year) and in 2046 (design year). As shown in Table 2.34, the four Build Alternatives would have fewer vehicle hours of delay when compared to the No-Build (No-Action) Alternative in each year, respectively.

The project is intended to alleviate regional traffic congestion by increasing the capacity on State Route 132, which would reduce the use of local streets to circumnavigate or go around the existing traffic congestion. As shown in Table 2.34, in the project area, most Build Alternatives would increase the daily Vehicle Miles Traveled compared to the No-Build (No-Action) Alternative

(morning peak) in both the construction year (2026) and design year (2046) due to the increased capacity of State Route 132. However, the vehicle hours of delay under Build Alternatives 1 and 2 would decrease compared to the No-Build (No-Action) Alternative because there would be less circuitous or indirect travel along local roadways and more efficient use of the existing highways. Build Alternatives 3 and 4 would increase the daily vehicle hours of delay and Vehicle Miles Traveled and result in more fuel consumption.

Table 2.34 Morning Peak Hour Vehicle Miles Traveled and Vehicle Hours of Delay by Build Alternative

Year Vehicle Miles Traveled	No-Build (No-Action) Alternative	Build Alternative 1	Build Alternative 2	Build Alternatives 3 and 4
Vehicle Miles Traveled (2018)	8,217.3	Not Applicable	Not Applicable	Not Applicable
Vehicle Miles Traveled (2026)	9,949	7,954	10,911	13,090
Vehicle Miles Traveled (2046)	11,465	10,158	13,779	15,123
Vehicle Hours of Delay (2018)	24.6	Not Applicable	Not Applicable	Not Applicable
Vehicle Hours of Delay (2026)	43.8	30.6	16.9	65.4
Vehicle Hours of Delay (2046)	226.2	49.8	36.8	105.9

The four Build Alternatives would improve operations for through traffic by improving intersections, particularly at the intersection of State Route 132 (Maze Boulevard) and Hart Road. The Build Alternatives would also improve traffic operations by encouraging motorists to use the new alignment for east-west travel, instead of other lengthier routes. Improvements associated with the Build Alternatives would allow traffic on the regional roadway network to travel faster, thereby reducing energy consumption.

Energy in the form of fuel consumed by a vehicle is directly proportional to the number of miles a vehicle travel. Table 2.34 shows that only Build Alternative 1 would result in a decrease of vehicle miles traveled when compared to the No-Build (No-Action) Alternative of the same year. Build Alternatives 2, 3, and 4 would result in a slight increase in vehicle miles traveled, resulting in more fuel consumption.

Construction Activities

Construction activities for the State Route 132 Dakota Avenue to Gates Road project are expected to last 300 working days, considerably less than five years and thus considered temporary under transportation conformity analysis. Fuel consumption estimates for construction equipment anticipated during construction were modeled using the Construction Emissions Tool 208 (Cal-CET2018) v1.1. Table 2.34.1 represents a portion of the output data for modeled construction years spanning 2025 and 2026.

Table 2.34.1 Total Anticipated Fuel Consumption (2025/2026)

Project Phases	Total Diesel Fuel Consumption	Total Gasoline Fuel Consumption
Land Clearing/Grubbing	12,049	6,626
Roadway Excavation and Removal	87,040	47,362
Structural Excavation and Removal	No Data	5,021
Base/Subbase/Imported Borrow	82,904	40,196
Structure Concrete	28,333	13,323
Paving	43,932	26,581
Drainage/Environment/Landscaping	32,340	16,176
Traffic Signalization/Signage/Striping/Painting	57,553	51,073
Other Operation	No Data	No Data
Total	349,376	206,358

Construction of any one of the proposed alternatives is anticipated to consume approximately 349,376 gallons of diesel fuel and 206,358 gallons of gasoline fuel. The Build Alternatives would require energy for onsite construction work, such as grading and bridge construction, and offsite manufacturing of pavement and bridge components. Roadway maintenance (such as resurfacing and patching) would also require energy. The additional energy use would be consumed in the short term by construction equipment required to build the project and by added congestion caused by construction-related traffic delays.

Energy consumption during construction would be mainly from petroleum fuels and electricity use. Fuel would be needed for vehicles and construction equipment, as well as to run electrical generators for lighting, welding machines, and power tools. Fuel would also be consumed during the production and transport of raw materials. Therefore, construction-related activities would result in a permanent consumption of finite energy resources. However, construction would consist of temporary activities that would not result in long-term demand for energy.

Indirect Energy Use

Indirect energy consumption for the four Build Alternatives was estimated based on the annual energy use.

Energy would also be needed for construction in the form of raw materials and equipment used to build the new highway. Table 2.34 shows that the Vehicle Miles Traveled would increase under each of the Build Alternatives when compared to the No-Build (No-Action) Alternative in 2026 and 2046. The Build Alternatives would require energy for onsite construction work, such as grading and bridge construction, and offsite manufacturing of pavement and bridge components. Roadway maintenance (such as resurfacing and patching) would also require energy. The additional energy use would be consumed in the short term by construction equipment required to build the

project and by added congestion caused by construction-related traffic delays.

The project will make improvements to safety and operational efficiency by re-directing regional as well as local traffic onto a more free-flowing highway with less stop and go traffic. The project will have a positive effect on the safety and efficiency of State Route 132 in this section of Stanislaus County. Construction of any of the build alternatives will improve travel along the route, maximize operational efficiency and minimize motorists' exposure to hazards which may contribute to vehicular accidents.

As shown, when balancing energy used against energy saved by relieving congestion and other transportation inefficiencies, none of the Build Alternatives would have substantial operational energy impacts.

Avoidance, Minimization, and/or Mitigation Measures

Per Caltrans' Best Management Practices, newer or well-maintained equipment that is more energy efficient would be used during construction. The amount of energy used by construction during the project would be temporary. The following Best Management Practices would be employed to minimize energy usage:

- The contractor would consolidate material delivery whenever possible to promote efficient vehicle and energy use. The contractor would schedule material deliveries during non-rush hours to minimize fuel loss during traffic congestion.
- The contractor would maintain equipment and machinery in good working condition and inspect it regularly. The contractor would also maintain inspection records.
- Operators would avoid leaving equipment and vehicles idling when parked or not in use.
- Equipment found operating on the project that has not been inspected or has oil leaks would be shut down and subject to citation.
- The contractor would implement, to the extent feasible, the following measures to reduce greenhouse gas emissions from construction equipment:
    - Use alternative-fueled (e.g., biodiesel and electric) construction vehicles/equipment, making up at least 15 percent of the fleet.
    - Use at least 10 percent of local building materials during construction.
    - Recycle at least 50 percent of construction waste or demolition materials.

2.3 Biological Environment

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, fish passage 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 below in the Threatened and Endangered Species Section 2.3.5. Wetlands and other waters are also discussed below in Section 2.3.2.

Affected Environment

The following section is based on the Natural Environment Study, completed in May 2020, which is located in Volume 3. Land cover was delineated in May 2019 using aerial imagery using Google Earth and field surveys to confirm findings. An estimated 1,455.79-acre Biological Study Area was determined, which is made up of a buffer that is about 200 feet wide on average from the outer edge of the proposed project footprint for all Build Alternatives. It is defined as the area of direct and indirect effects of the proposed project. The project footprint is the area where direct effects associated with construction activities would occur.

The following natural communities were seen within the Biological Study Area: annual grassland, upland riparian, freshwater marsh, and seasonal wetland. The freshwater marsh and seasonal wetlands are discussed below in the Wetlands and other waters Section 2.3.2. The annual grassland and upland riparian are discussed in this section. These communities are distinctive assemblages of plant species that live together and are linked by their effects on one another and their environment. Natural communities often support a diversity of wildlife species, including special-status species.

Annual Grassland

Annual grasslands occur sporadically throughout the survey area; non-native annual grasses dominate them, such as soft chess *(Bromus hordeaceus)*, common wild oat *(Avena fatua),* and Mediterranean barley *(Hordeum marinum ssp. gussoneanum).* Annual herbaceous flowers occur within the grasslands and include weedy species such as cutleaf geranium *(Geranium dissectum),* hairy leaved sunflower *(Helianthus hirsutus),* and annual yellow sweetclover *(Melilotus indicus).*

Upland Riparian

Upland riparian habitat was found along the banks of one ditch on the northern side of existing State Route 132 (Maze Boulevard) in the westernmost portion of the Biological Study Area. This natural community is composed of riparian plants such as willows *(Salix spp.)* and California blackberries *(Rubus ursinus).* Upland riparian habitat usually occurs along the banks of seasonal ditches and is considered upland because it lacks the hydrological characteristics of a wetland.

Habitat Connectivity

The Biological Study Area was assessed using methods from the California Essential Habitat Connectivity Project, which incorporates natural resource considerations into transportation and land use planning. In the westernmost portion of the project area, there is a Natural Landscape Block that spans the San Joaquin River National Wildlife Refuge area. A Natural Landscape Block is a well-conserved habitat area of native species and ecological processes that supports biodiversity. This Natural Landscape Block connects to other blocks that extend to the north to the Stanislaus River and the south to the Tuolumne River. This stretch of natural landscape provides habitat connectivity and supports a high diversity of endemic plants and animal species. The Natural Landscape Block that the Biological Study Area crosses through is mapped just west of Gates Road/Paradise Road and covers an estimated 1.75-mile stretch westward along the existing highway. Much of the land that is directly next to State Route 132 in this landscape block is currently being used for agriculture.

Fish Passage

There are two potential fish crossings on State Route 132 that have been identified by the California Fish Passage Advisory Committee. The two crossings consist of a slough with a trenched connection to the San Joaquin River and a maintained irrigation canal. However, no federally listed species of fish and Essential Fish Habitat are present within the Biological Study Area. Assessments concluded that the slough does not have a definable channel upstream and the irrigation canal containing a floodgate and is concrete lined with several agricultural outlets. Based on these assessments, further assessments are not required, and these potential fish crossings do not qualify as fish passages.

Environmental Consequences

Annual Grassland

Depending on the alternative, there will be some areas of annual grassland removed, which would be insignificant due to the size and context of the potential impact.

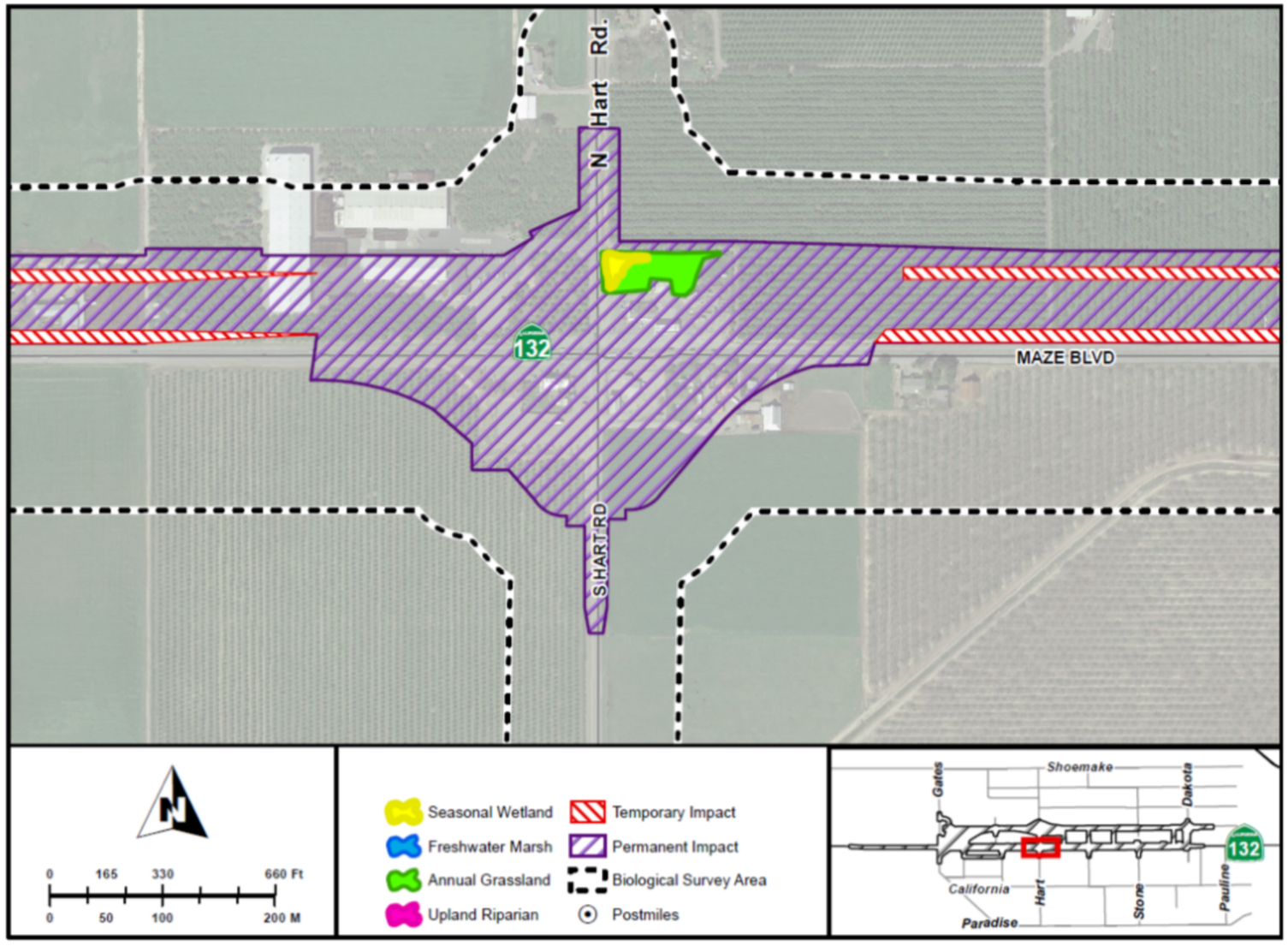
Table 2.36 Summary of Impacts to Annual Grassland by Build Alternative

Impact Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Permanent	0.00	0.00	0.60	0.60
Temporary	0.00	0.00	0.00	0.00

Source: Natural Environment Study (May 2020)

Table 2.36 shows that Build Alternatives 3 and 4 would permanently impact 0.60 acre of annual grassland, while Build Alternatives 1 and 2 would have no impacts. The permanent impacts of Build Alternatives 3 and 4 would occur at the intersection of State Route 132 (Maze Boulevard) and Hart Road, as shown in Figure 2-31. There would not be any temporary impacts to annual grassland under any Build Alternative.

Figure 2-31 Permanent Impacts to Annual Grassland for Build Alternatives 3 and 4



Source: Natural Environment Study (May 2020)

For all Build Alternatives, impacts to upland riparian habitat are not anticipated and can be avoided. Best Management Practices would be in place to establish a spill prevention plan with measures to minimize the risk of fluids or other materials used during construction such as oils, transmission and hydraulic fluids, cement, and fuel from entering upland habitat.

Habitat Connectivity

All Build Alternatives would not impact habitat connectivity because the proposed work of the project would remain on the pavement and shoulders.

Fish Passage

There are no qualifying fish passages within the Biological Study Area; therefore, there would be no impact on fish passages.

Avoidance, Minimization, and/or Mitigation Measures

Depending on the alternative, there will be some areas of annual grassland removed, which would be insignificant due to the size and context of the potential impact. Due to the marginal quality of the annual grassland as foraging habitat, compensatory mitigation is not proposed.

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, more commonly referred to as the Clean Water Act (33 U.S. Code 1344), is the primary 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. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark, in the absence of adjacent wetlands. When adjacent wetlands are present, Clean Water Act jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands. 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 Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effects. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

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

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board, the Regional Water Quality Control Board, 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 will 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 will 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 which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details.

Affected Environment

The following section is based on the Natural Environment Study, completed in May 2020, and located in Volume 3. Delineations of wetlands and other waters and the ordinary high-water mark were performed in May 2019. U.S. Army Corps of Engineers' jurisdictional wetlands and other waters of the U.S., as well as jurisdictional waters of the State, occur within the project footprint. Five types of aquatic resources were found throughout the Biological Study Area, mostly in the westernmost portion. The aquatic resources include freshwater marshes, seasonal wetlands, canals, built basins, and ditches. Each of the aquatic resources was classified using the Classification of Wetlands and Deepwater Habitats of the U.S.

Freshwater Marsh

The freshwater marsh is a community of special concern, according to the National Wetlands Inventory. Coastal and valley marsh vegetation communities typically develop in shallow, slow-moving, or stagnant water at the edge of sites that lack flow but are consistently flooded by freshwater. The characteristic species that are in or around freshwater marsh include cattails and bulrush, as shown in Figure 2-32 from seasonal wetlands. Each of the four Build Alternatives is north of the freshwater marsh about 1 mile west of the intersection of State Route 132 and Gates Road/Paradise Road. At the time it was seen, the vegetation was managed and cut down; however, some vegetation remained. The freshwater marsh connects to Riley Slough via underground culverts, which run under State Route 132.

Seasonal Wetland

There were two seasonal wetlands identified within the Biological Study Area. Seasonal wetland one totals 0.053 acre and seasonal wetland two totals 0.113 acre for a total of 0.166 acre (shown in Figure 2-32 in the environmental consequences section). The first is a linear feature within the project footprint of all four Build Alternatives within the bed and bank of a ditch, which is dominated by saltgrass *(Distichlis spicata).* The second seasonal wetland is near Build Alternatives 3 and 4 and is behind a business and is dominated by Italian ryegrass *(Lolium multiflorum).* The wetland could provide suitable habitat for vernal pool fairy shrimp *(Branchinecta lynchi).* Survey results for vernal pool fairy shrimp are discussed in Section 2.3.5, Threatened and Endangered Species.

Canals

Canals are classified as riverine, perennial waters. Within the Biological Study Area, there are eight segments of canals totaling about 5.5 acres, each with concrete bottoms void of vegetation. These eight segments of the canal originate at the Modesto Reservoir and flow west to eventually connect with the San Joaquin River. Three of the canal segments are within the project footprint of all four Build Alternatives. The fourth canal segment is near the northern side of Build Alternative 1, and the final canal segment is within the footprint of Build Alternatives 1 and 2. The remaining canals are within the Biological Study Area, but not within the project footprint. At the time of the biological survey, the canals had a bank full of flows and were void of vegetation.

Built Basin

Built basins are classified as palustrine, unconsolidated bottom waters. They are non-tidal wetlands dominated by trees, shrubs, mosses, or lichen. Built basins have a bottom that is at least 25 percent covered in particles smaller than stones. Four built basins were found within the Biological Study Area, totaling an area of 6.3 acres. Three of the built basins appear to be a part of dairy operations within the project footprint of Build Alternative 2 and near Build Alternative 4. The basins have been built with steep earthen walls that are either barren with no vegetation or have weedy vegetation such as cheeseweed *(Malva parviflora)* and non-native grasses. The fourth built basin is a private recreational pond on private property near the proposed location of Build Alternatives 1 and 2. This pond was surrounded by landscaped trees such as cottonwood *(Populus sp.).* At the time of the biological survey, each of the basins was seen to have standing water.

Ditch

In general, ditches are built features where vegetation is regularly cleared as part of farming operations or road maintenance and would not be considered to have permanent wetland vegetation. The ditches located throughout the four Build Alternatives are classified as riverine, intermittent waters. Twelve segments of the ditch were identified in the project area with an approximate total of 1.2 acres. Vegetation seen within the ditches were sparse annual grasses. During the biological survey, evidence of water flow was seen in the form of scour (removal of sediment) and deposition (depositing of sediment). None of the roadside ditches within the Biological Study Area are included in the National Wetlands Inventory.

Environmental Consequences

Build Alternatives

Direct impacts to wetlands and other waters would occur through soil disturbance due to construction activities, such as clearing, grubbing, grading, and placement of fill material. The removal of wetlands and other waters would also result in direct impacts to plant and wildlife species that depend on these hydrologic resources.

Indirect impacts to wetlands and other waters may include a severed hydrological connection that may result in a decreased function of its features. These areas may

have temporary indirect effects from soil disturbance associated with utility relocation, construction staging areas, vehicular and pedestrian traffic, and installation of temporary wildlife exclusion fencing. Table 2.37 shows permanent acres of impact to Jurisdictional Aquatic Resources by Build Alternative, and Table 2.38 shows the temporary impacts.

Freshwater Marsh

There would be no impacts to freshwater marsh as a result of this project. Riley Slough is not within the project footprint of the proposed project and, therefore, would not result in any impacts directly or indirectly.

Seasonal Wetlands

Construction of the proposed project would directly impact the seasonal wetlands. All the presented aquatic resource features were interpreted to be potentially jurisdictional under the Clean Water Act Section 404.All Build Alternatives would have a permanent impact to a seasonal wetland within the bed and bank of a ditch. Additionally, Build Alternatives 3 and 4 would impact a seasonal wetland that is behind a business, as shown in Figure 2-32. The impacts of each Build Alternative to seasonal wetlands and other aquatic resources is summarized in Table 2.37 and Table 2.38.

Figure 2-32a Location of Seasonal Wetland One for Build Alternatives 3 and 4

Figure 2-32b Location of Seasonal Wetland Two for Build Alternatives 3 and 4

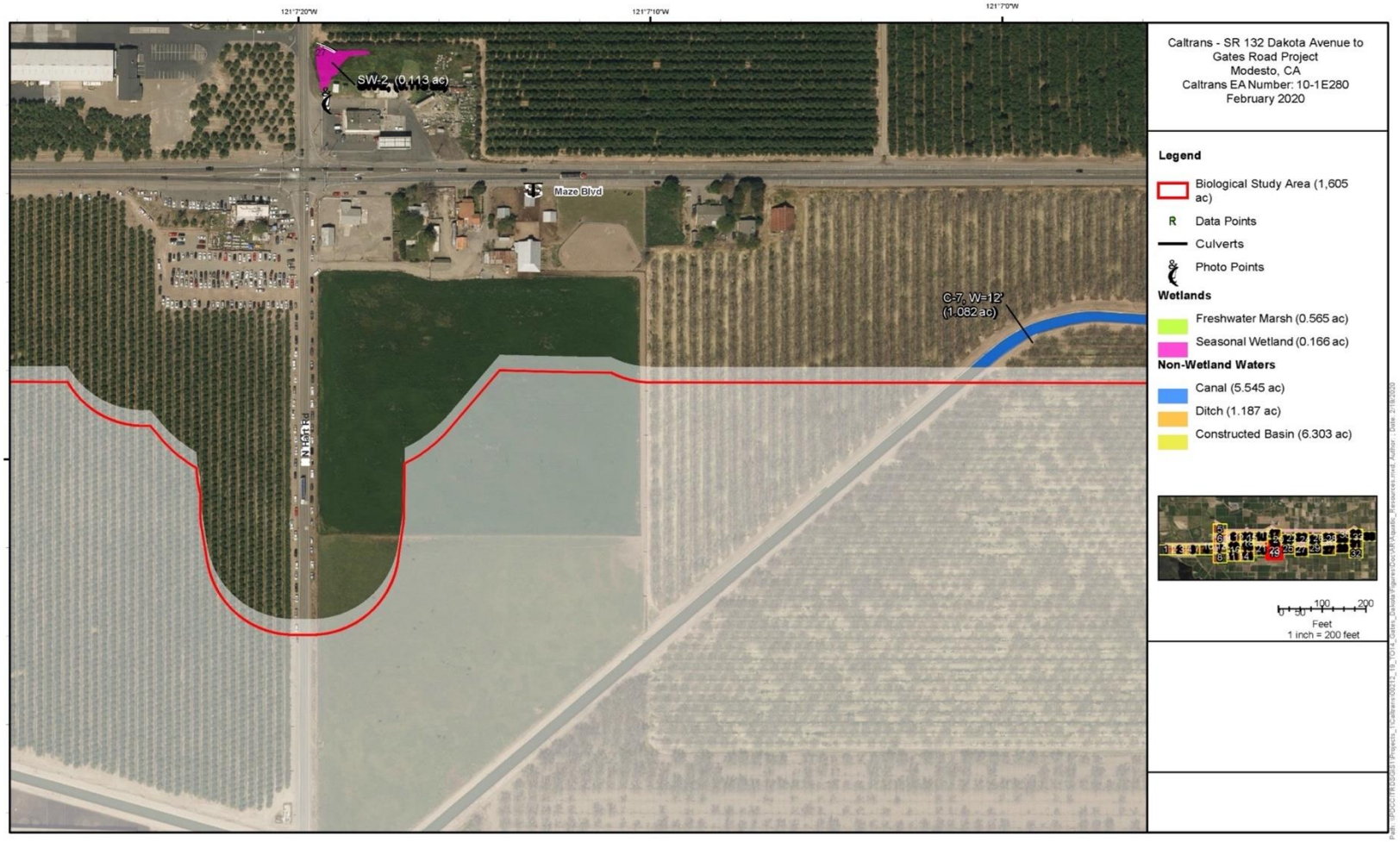


Table 2.37 Permanent Impacts to Jurisdictional Aquatic Resources per Build Alternative

Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Freshwater Marsh	0.00	0.00	0.00	0.00
Seasonal Wetland	0.053	0.053	0.166	0.166
Canal	0.166	1.386	0.011	0.345
Built Basin	0.000	3.148	0.000	0.016
Ditch	0.138	0.141	0.148	0.176
Total	0.357	4.728	0.325	0.703

Source: Natural Environment Study (May 2020)

Table 2.38 Temporary Impacts to Jurisdictional Aquatic Resources per Build Alternatives

Type	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
Freshwater Marsh	0.00	0.00	0.00	0.00
Seasonal Wetland	0.000	0.000	0.000	0.000
Canal	0.124	0.074	0.000	0.014
Constructed Basin	0.000	0.000	0.000	0.000
Ditch	0.000	0.000	0.000	0.120
Total	0.124	0.074	0.000	0.134

Source: Natural Environment Study (May 2020)

Canal

As shown in Table 2.37 and 2.38 above, there would be permanent and temporary impacts to canals that are potential waters of the State.

No-Build (No-Action) Alternative

Under the No-Build (No-Action) Alternative, no construction would take place. Therefore, there would be no impacts to wetlands in the project study area.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans would acquire a Jurisdictional Determination from the Army Corps of Engineers and would obtain an Individual 404 permit for impacts to wetlands and other waters for the U.S. A 401 permit from the Regional Water Quality Control Board for impacts to waters of the U.S. and a 1602 permit from California Fish and Wildlife for impacts to regulated waters of the State would additionally be obtained. Refer to chapter 4 of this document for a more detailed discussion of coordination and copies of correspondence with the agencies.

The following avoidance and minimization measures would be implemented to protect aquatic resources for all Build Alternatives:

WL-1: A Stormwater Pollution Prevention Plan would be prepared specifically for the proposed project, which would include measures to reduce additional impacts to aquatic resources.

WL-2: Temporary silt fencing would be installed within the project footprint to protect aquatic resources next to the project footprint from construction activities.

WL-3: The stockpiling of materials, equipment (including portable equipment), vehicles, and supplies (including chemicals) would be restricted to designated construction staging areas.

WL-4: An emergency spill prevention plan would be prepared and would include measures to minimize the risk of fluids or other materials—oils, transmission and hydrologic fluids, cement, fuel—from entering waterways and wetlands.

WL-5: The contractor would follow Best Management Practices specifically developed for the proposed project. These may include:

- Installation of temporary erosion control features (such as silt fencing and fiber rolls).
- A spill prevention plan with measures to minimize the risk of fluids or other materials used during construction (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering aquatic resources and upland habitat.
- Installation of measures to ensure water quality is protected such as silt fencing.

WL-6: Once construction is complete, all areas disturbed within the proposed right-of-way would be reseeded with native hydroseed mix. A special provision would be included in the construction contract that requires that after all construction is complete, all areas disturbed within the proposed right of way will be reseeded with a native hydroseed mix.

WL-7: Compensatory mitigation with a minimum of a 1 to 1 compensation ratio would be used to ensure there would be no net loss of aquatic resources.

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. Please see the Threatened and Endangered Species section 2.3.5 in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S.

Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

The 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. The regulatory requirements for 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 California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act found at California Public Resources Code, Sections 21000-21177.

Affected Environment

The following section is based on the Natural Environment Study, completed in May 2020, and included in Volume 3. Floristic surveys were conducted in May 2019. Within the project area, two special-status plant species were seen—California alkaligrass *(Puccinellia simplex)* and Parry's rough tarplant *(Centromadia parryi ssp. rudis).* A complete list of plant species seen during the biological and botanical surveys can be found in Appendix G of the Natural Environment Study.

California Alkaligrass

California alkaligrass *(Puccinellia simplex)* is a species found in saline flats, mineral springs, alkaline soils, and vernal pools throughout the Central Valley, Mojave Desert, and Utah. The grass grows in small tufts up to 9 inches with flower stalks blooming from March to May, reaching up to 8 inches. California alkaligrass is on the California Native Plant Society's rare and endangered species plant inventory. There is only one recorded occurrence of this grass in the Biological Study Area from 1942, near the San Joaquin River Flats, about 0.7 mile south of the project limits, which now consists of agricultural lands. Within the Biological Study Area, suitable habitat for California alkaligrass is located within the San Joaquin River National Wildlife Refuge, which is located just outside of the project footprint. Although alkali soils may be present within the disturbed shoulders of State Route 132, that runs adjacent to the refuge, the shoulders are routinely maintained with vegetation management practices. The likelihood that this species would survive the routine road maintenance activities is low due to exposure to weed control methods such as mowing or spraying. Focused surveys were not conducted for this species due to a lack of suitable or natural habitat within the project footprint and the lack of access to the suitable habitat within the San Joaquin River National Wildlife refuge's leased lands. California alkaligrass is not expected to occur within the project footprint.

Parry's Rough Tarplant

Parry's rough tarplant *(Centromadia parryi ssp. Rudis)* is an annual herb that lives exclusively in California. This species of plant can be up to 27 inches tall with yellow ray flowers that bloom from June to October. According to the California Native Plant Society, Parry's rough tarplant is moderately threatened in California. Although there are no recorded occurrences of this species in the Biological Study Area, potentially suitable habitat was identified within the shoulders of State Route 132, west of Gates

Road, within the project footprint of all build alternatives, as shown in Figure 2-33. These areas are routinely exposed to weed control methods but do contain the moisture-rich alkaline soils that this species prefers. The land is currently being used as agricultural fields for grazing and contains two small locations where Parry's rough tarplant could occur.

Environmental Consequences

The proposed project would have no permanent or temporary impacts to California alkaligrass because its suitable habitat is outside of the project footprint. However, there is potentially suitable habitat present for Parry's rough tarplant within the disturbed shoulders of State Route 132 for all Build Alternatives, west of Gates Avenue, where temporary impacts are expected at a total of 15 acres for each Build Alternative.

Figure 2-33 Potential Suitable Habitat for Parry's Rough Tarplant

Source: Natural Environment Study (May 2020)

Avoidance, Minimization, and/or Mitigation Measures

PS-1: 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, would be completed within suitable habitat in the project footprint. If Parry's rough tarplant is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, additional minimization measures will be implemented, such as duff collection, removal of the plant by hand, and replanted, reseeding with California Department of Fish and Wildlife-approved plant 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 the Threatened and Endangered Species Section 2.3.5 below. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration's National Marine 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

Affected Environment

The following section is based on the Natural Environment Study, completed in May 2020. The study can be found in Volume 3.

Migratory bird surveys expanded outside of the Biological Study Area's 200-foot buffer of the project footprint into areas that contained potential nesting habitat and were accessed either by public roads or by binocular surveys. These areas are not included in the Biological Study Area. Some of the common wildlife species seen during the

biological surveys include the following: California ground squirrel *(Otospermophilus beecheyi),* midvalley fairy shrimp *(Branchinecta mesovallensis),* red-tailed hawk (Buteo jamaicensis), Swainson's hawk *(Buteo swainsoni)*, turkey vulture *(Cathartes aura),* mourning dove *(Zenaida macroura)* common raven *(Corvus corax),* red-winged blackbird *(Agelaius phoeniceus),* yellow-billed magpie *(Pica nuttalli)*, European starling *(Sturnus vulgaris),* and merlin *(Falco columbarius).* A complete list of wildlife species seen during the biological surveys can be found in Appendix G.

The special-status species known to occur in the project area are the Modesto song sparrow (*Melospiza melodia mailliardi*), burrowing owls (Athene *cunicularia*), and merlin (*Falco columbarius*). These species are discussed below.

Modesto Song Sparrow

The Modesto song sparrow (*Melospiza melodia mailliardi*) is a regional subspecies of the song sparrow that lives in the northern Central Valley. It is a California Species of Special Concern and is also protected under the Migratory Bird Treaty Act. The Modesto song sparrow has an affinity for emergent freshwater marshes, which are dominated by tules (*Scirpus spp.)* and cattails (*Typha spp*.). They nest in riparian forests that provide sufficient understory of blackberry (*Rubus spp*.) for cover and will raise to three broods.

The Modesto song sparrow was not seen within the Biological Study Area during the bird surveys conducted in 2019. The closest occurrence, dated 1928, is about 2.5 miles to the south of the proposed location of Build Alternatives 3 and 4, near the confluence of the San Joaquin/Tuolumne River.

Burrowing Owls

Burrowing Owls *(Athene cunicularia)* are small owls with long legs and a short tail ranging from 7.5 to 10 inches in height and a wingspan of 21 to 24 inches. Their nesting habitat consists of open areas with mammal burrows and includes dry open rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub with gullies, washes, arroyos, and edges of human-disturbed lands. Burrowing owls typically inhabit urban vacant lots, airports, golf courses, and fairgrounds within urban areas, and will adopt the burrows of other burrowing animals in addition to digging their own. Burrowing owls are listed as a California Species of Special Concern and are protected under the Migratory Bird Treaty Act. Their main threat is habitat loss due to human encroachment and development or agricultural conversion, and the poisoning of ground squirrel populations.

A burrowing owl assessment was conducted from April 2019 to July 2019, where it was determined that there is potential habitat in the western portion of the Biological Study Area along existing State Route 132 (Maze Boulevard) within the San Joaquin River National Wildlife Refuge. Within the project footprint of all Build Alternatives, the agricultural lands that are next to the refuge could provide low-quality foraging habitat due to the lack of small mammals available as a result of routine agriculture practices. Due to regular crop rotations and pest management, the land provides little opportunity for foraging.

Environmental Consequences

Modesto Song Sparrow

No Modesto song sparrows or nests were seen within the Biological Study Area; therefore, no direct impacts on individual birds or suitable nesting habitat are expected to result from the project. However, there is a potentially suitable nesting habitat, but it is not expected to be impacted due to it being outside of the project footprint. No permanent or temporary impacts are expected for Modesto song sparrows or their nesting habitat in any of the four Build Alternatives. Although no permanent or temporary impacts are expected, there is a potential for Modesto song sparrows to nest next to active construction for all Build Alternatives.

Burrowing Owl

No direct impacts on burrowing owls are expected to result from the project; however, potential indirect impacts to the species would include the presence of active construction near suitable burrowing owl habitat under all Build Alternatives.

Merlin

Permanent and temporary impacts are not expected for the merlin nesting habitat because the species only lives in the Central Valley during the winter. Potential impacts from all Build Alternatives may occur to agricultural fields, which could be considered suitable foraging habitat.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following measures for all the Build Alternatives would reduce impacts on animal species:

AS-1: A pre-construction survey would be completed within suitable habitat to ensure no birds are nesting in or next to the project footprint. A total of four surveys may be conducted from February 15 to July 15 or December 1 to January 31, depending on the start of initial ground-breaking activities.

AS-2: If an active owl burrow is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, where possible. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction.

AS-3: If a merlin is seen within the project footprint during construction activities, a no-work buffer would be implemented until the individual leaves of its own accord.

AS-4: If an active Modesto song sparrow nest is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, Caltrans would propose additional minimization measures in coordination with the U.S. Fish and Wildlife Service. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

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

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

Affected Environment

The following section is based on the Natural Environment Study, completed in May 2020, and included in Volume 3. A Letter of Concurrence from the U.S. Fish and Wildlife Service would be obtained after a preferred Build Alternative is selected.

The following section describes four special-status species that occur or have the potential to occur within the Biological Study Area. The Biological Study Area is an area where both direct and indirect effects from the proposed project are expected to occur. The Biological Study Area is made up of an approximate 200-foot average width buffer that has been added to the outer edge of the project footprint for all four Build Alternatives. The project footprint is the area where direct effects associated with construction activities would occur. Migratory bird surveys expanded outside of the 200-foot buffer in areas that contained potential nesting habitat and were accessed either by public roads or by binocular surveys. These areas are not included in the Biological Study Area. A complete list of wildlife species seen in the biological surveys can be found in Appendix G of the Natural Environment Study.

The proposed project area was surveyed and evaluated for the potential to support threatened and endangered plant and wildlife species. Table 2.39 shows the status and general habitat requirements of the threatened or endangered animal species identified to be present in the survey area. After analysis of the threatened and endangered species' habitat requirements and completion of floristic and wildlife field reconnaissance surveys, it was determined that vernal pool fairy shrimp *(Branchinecta lynchi),* Swainson's hawks *(Buteo swainsoni),* tricolored blackbirds (*Agelaius tricolor*), and California tiger salamanders *(Ambystoma californiense)* have the potential to occur in the project area.

Table 2.39 Threatened or Endangered Animal Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Status	Habitat	Rationale
Vernal Pool Fairy Shrimp	Branchinecta lynchi	Federally Threatened	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Although there are no vernal pools present, there are roadside puddles within the Biological Study Area that could provide low quality habitat for vernal pool fairy shrimp.
Tricolored Blackbird	Agelaius tricolor	State Threatened	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony. Freshwater marsh and swamp wetland.	Freshwater marsh is present within the Biological Study Area, however not within the project footprint.
Swainson's Hawk	Buteo swainsoni	State Endangered	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires nearby suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Observations of active nest and foraging occurred during general biological and nest surveys. Alfalfa fields and trees suitable for nesting are within the project footprint of each Build Alternative.
California Tiger Salamander	Ambystoma californiense	Federally Threatened, State Endangered ,Watch List	Need underground refuges, especially ground squirrel burrows, and vernal pools, or other seasonal water sources for breeding. Cismontane woodland meadow and seep riparian woodland valley and foothill grassland vernal pool.	There are underground refuges/ground squirrel burrows with access to seasonal water sources within the San Joaquin River National Wildlife Refuge, which is nearby, however not within the project footprint.

Source: Natural Environment Study (May 2020)

Vernal Pool Fairy Shrimp

The federally threatened vernal pool fairy shrimp *(Branchinecta lynchi)* is a freshwater crustacean found in vernal pools or vernal pool-like habitats within California and southern Oregon. Vernal pools are depressions in the ground that flood with water during the winter and are dry by the summer, resulting in a short life cycle. A portion of the Biological Study Area is within the critical habitat of Stanislaus County for vernal pool fairy shrimp; however, it is not within the project footprint. Three occurrences of vernal pool fairy shrimp within 5 miles of the Biological Study Area were documented in 1998. In April 2019, surveys were conducted, and a total of eight puddles/pools were seen to contain fairy shrimp, which were identified as non-listed midvalley fairy

shrimp *(Branchinecta mesovallensis).* None of the puddles/pools had water during the time of the biological survey. A seasonal wetland was identified within the project footprint, near all Build Alternatives that may have the potential to contain the Branchinecta species.

Tricolored Blackbirds

Tricolored blackbirds *(Agelaius tricolor)* are found in western North America. The common name is taken from the male bird's distinctive white stripes on the bottom of their red shoulder patches, which are visible when the bird is flying or displaying. Females are grey with a lighter throat than males and have brown plumage. They are about 9 inches long with a 14-inch wingspan. Tricolored blackbirds are always found near water. Their habitat requires foraging grounds (typically grasslands or agricultural pastures) and materials to build their nests, such as tall aquatic plants. Since they are highly colonial birds, they also require enough room to forage for at least 50 mating pairs. Tricolored blackbirds are omnivores, which will eat grasshoppers, beetles, moths, fly larvae, grains, seeds, rice, and other crops as availability and seasons change.

No tricolored blackbirds or nests were seen within the Biological Study Area during the biological surveys in 2018 or 2019; however, there is potentially suitable habitat for nesting and foraging in an irrigation ditch next to a flooded pasture off of Maze Boulevard near the proposed location of Build Alternatives 3 and 4. The species was found within 0.5 mile of the Biological Study Area in 1972, and two colonies were documented in 2005 along the east side of the San Joaquin River.

Swainson's Hawk

Swainson's hawks (*Buteo swainsoni*) are listed as state threatened and are protected under the Migratory Bird Treaty Act. Swainson's hawks migrate between North America and the Las Pampas region of Argentina annually in areas of open grasslands and shrublands where trees are widely scattered or near riparian corridors. Swainson's hawks are more abundant in areas of moderate agricultural development with crops that closely resemble their natural habitats, such as irrigated pastures, row crops, and alfalfa fields, which provide foraging habitat. Their main nesting trees are Joshua trees and Fremont cottonwoods; however, they have also been found nesting in eucalyptus and willow trees. Swainson's hawks are usually monogamous, and breeding pairs are likely to return to previously used nesting sites. Bird surveys were conducted within the Biological Study Area and a 0.5-mile buffer of the Biological Study Area from April 2019 to July 2019. Two Swainson's hawks were seen foraging within the Biological Study Area, and two active nests were seen outside of the Biological Study Area, but within the buffer. The Biological Study Area contains limited nesting habitat for Swainson's hawks in all of the Build Alternatives because most of the trees are orchards, which is not a compatible crop for nesting due to the close proximity of orchard trees and not widely scattered. Some areas near large fields that contain nearby trees are potentially marginal suitable nesting habitat due to routine agricultural activities (crop rotation and pest management) nearby. Marginally suitable foraging habitat consists of parcels of annual grassland, hayfields, irrigation pastures,

and ruderal areas, which are scattered throughout the Biological Study Area. There is abundant suitable foraging habitat west of the project within the San Joaquin River National Wildlife Refuge and the grasslands west of the San Joaquin River.

California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is on the California Department of Fish and Wildlife watch list and is listed as a federally threatened, and state threatened species. They are typically 6 to 9.5 inches in length with a broad, rounded snout. Their coloration consists of random white or yellowish circle markings on a black body, while the larvae are commonly pale but have been seen with spotted grey coloration.

The diet of the California tiger salamander varies depending on the life stage currently exhibited. Larvae typically eat small aquatic insects, but as they grow, their diet switches to larger prey that include tadpoles, spiders, earthworms, and moths. California tiger salamanders inhabit annual grasslands and open woodlands with burrows created by California ground squirrels and pocket gophers. California tiger salamanders use these burrow systems year-round but mainly during the dry months when they are in their dormant state. During the rainy months, the California tiger salamander leaves its summer burrow to migrate to nearby pools or ponds to breed. The amount of time needed for hatching is related to the water temperature and their success rate is relatively low. The California tiger salamander is on the California Department of Fish and Wildlife's watch list and is listed as federally threatened and state threatened.

There are two documented occurrences of the species within the Biological Study Area, dated 1973 and 1992. The occurrence in 1973 was at a ranch house, but the surrounding area has since been converted to agricultural fields and is not expected to have California tiger salamander. Suitable breeding habitat is likely to occur near all four Build Alternatives in the vernal pools that are within the San Joaquin River National Wildlife Refuge lands. However, areas within the Biological Study Area have been converted to agricultural lands, which are not likely to have small mammal burrows due to flood irrigation techniques.

Environmental Consequences

Vernal Pool Fairy Shrimp

Although critical habitat for the vernal pool fairy shrimp is present within the Biological Study Area, the habitat is not within the project footprint where direct and indirect impacts are expected. All four Build Alternatives have been designed to avoid all impacts to the designated critical habitat for vernal pool fairy shrimp, the San Joaquin River National Wildlife Refuge, and the seasonal wetland. All work, including soil disturbance or modifications, would remain on pavement and existing shoulders in the areas next to the critical habitat. Impacts as a result of the proposed project are not expected for the vernal pool fairy shrimp or its habitat. Tricolored Blackbird

No direct impacts on tricolored blackbirds are expected to result from the project because no tricolored blackbirds or nests were seen within the Biological Study Area. However, there is suitable nesting habitat close to the project area (not within the project footprint) where there is the potential for a tricolored blackbird to be nesting next to active construction near Build Alternatives 3 and 4. With the implementation of avoidance and minimization measures, impact are not anticipate to the tricolored blackbird.

Swainson's Hawk

Although no active Swainson's hawk nests were seen within the project footprint, the presence of suitable nesting and foraging habitat is present throughout. Two active Swainson's hawk nests were seen outside of the Biological Study Area, and two Swainson's hawks were seen foraging within the Biological Study Area. Therefore, there is a likelihood that active nests may be detected within or near the project footprint during construction, and no-work buffers would be required during the nesting season (February 1 to September 30). The proposed project would remove marginally suitable foraging habitat for Swainson's hawk for all Build Alternatives. Build Alternative 2 would have the most permanent impacts (94.35 acres) and Build Alternative 1 would have the least permanent impacts (24.08 acres), as shown in Table 2.40 below. Additionally, the proposed project would have some temporary impacts on Swainson's hawk foraging habitat. Build Alternative 4 (15.44 acres) would have the largest impacts and Build Alternative 2 would have the least temporary impacts, as shown in Table 2.41. With the implementation of avoidance and minimization measures, impacts are not anticipated to the Swainson's hawk.

Table 2.40 Permanent Impacts on Raptor Foraging Habitat by Build Alternative

Land Cover Type	Build Alternative 1 (Acres)	Build Alternative 2 (Acres)	Build Alternative 3 (Acres)	Build Alternative 4 (Acres)
Annual Grassland	0.00	0.00	0.60	0.60
Ruderal	6.25	6.40	7.78	8.28
Hayfield	14.00	84.24	33.59	50.41
Irrigated Pasture	3.83	3.71	14.21	5.24
Total Permanent Impacts	24.08	94.35	56.18	64.53

Source: Natural Environment Study (May 2020)

Table 2.41 Temporary Impacts on Raptor Foraging Habitat by Build Alternative

Land Cover Type	Build Alternative 1 (Acres)	Build Alternative 2 (Acres)	Build Alternative 3 (Acres)	Build Alternative 4 (Acres)
Ruderal	0.00	0.00	0.57	0.60
Grass/Hay Crop	2.09	0.00	3.73	14.48
Irrigated Pasture	0.00	0.00	3.43	0.14
Total Temporary Impacts	2.09	0.00	7.73	15.22

Source: Natural Environment Study (May 2020)

California Tiger Salamander

No suitable habitat is present that would be impacted by the project. The proposed project has been designed to avoid all work within the San Joaquin River National Wildlife Refuge, and minimization measures would be implemented; therefore, no direct or indirect impacts on the individual species, their breeding, or habitats are expected. Consequently, no compensatory mitigation is proposed. The project may affect but is not likely to adversely affect the California tiger salamander under all our Build Alternatives.

Avoidance, Minimization, and/or Mitigation Measures

A Letter of Concurrence for a may affect, not likely to adversely affect finding would be obtained from the U.S. Fish and Wildlife Service, and avoidance and minimization measures would be implemented during construction to reduce potential effects to the federally threatened California tiger salamander and vernal pool fairy shrimp as a result of the proposed project:

TE-1: The seasonal wetland within the project footprint with the potential to contain vernal pool fairy shrimp would be designated as an environmentally sensitive area in the construction contract and protected by the installation of high-visibility fencing and silt fencing to exclude any disturbance to the feature.

TE-2: Before construction activities, exclusion fencing would be installed in areas that are next to suitable habitat for California tiger salamanders to avoid any individuals from entering the proposed project area.

TE-3: If a 70 percent chance or greater of rainfall is predicted within 24 hours of project activities, a qualified biologist shall survey the project footprint for the presence of migrating California tiger salamanders before the start of construction each day that rain is forecasted. No project work that could affect migrating California tiger salamanders shall occur during or within 48 hours following significant rain events, defined as 1/4 of an inch or more of rain in a 24-hour period.

TE-4: For work conducted during the California tiger salamander migration season (November 1 to March 31), a qualified biologist would survey active work areas (including access roads) in the morning following measurable precipitation that measures less than 1/4 of an inch. Construction may not start until the biologist has confirmed that no California tiger salamanders are in the work area.

TE-5: Basins or trenches greater than 6 inches deep would be covered or have an escape ramp present. These would be checked daily for trapped California tiger salamanders and other wildlife. Before the basins or trenches are filled, they would be thoroughly inspected for trapped wildlife. Any pipes or culverts stored onsite must be capped to prevent any 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 would be notified.

TE-6: Vehicle travel would 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 a 10-mile-per-hour nighttime speed limit.

Implementation of the following minimization measures would reduce project-related impacts to the state-endangered Swainson's hawk and the tricolored blackbird, both of which are listed as a California Species of Special Concern for all Build Alternatives:

TE-7: A pre-construction survey would be completed within a suitable habitat to ensure no birds are nesting in or next to the project footprint. A total of four surveys may be conducted from February 15 to July 15 or December 1 to January 31, depending on the start of initial ground-breaking activities.

TE-8: Pre-construction surveys would be completed within suitable habitat to ensure no birds are nesting in or next to the project footprint. If an active tricolored blackbird nest is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, Caltrans would propose additional minimization measures in coordination with the U.S. Fish and Wildlife Service. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction.

TE-9: A protocol-level survey would be conducted before construction starts and would follow the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. If Swainson's hawks are identified within the Biological Study Area, construction activities within permitted work areas shall occur between October 1 and January 31 to reduce potential impacts to Swainson's hawk's breeding/nesting season. If construction must occur during the period from February 1 to September 30, a qualified wildlife biologist shall conduct pre-construction surveys for nesting or foraging Swainson's hawks. The timeline of the pre-construction surveys would be determined in coordination with the California Department of Fish and Wildlife for review and approval. California Department of Fish and Wildlife shall be consulted to establish protection measures, such as buffers until the young have fledged. Disturbance of active nests shall be avoided until it is determined that nesting is complete, and the young have fledged.

TE-10: A special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction, which may include, but 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.

2.3.6 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the U.S. 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 following information is based on the Natural Environment Study completed in May 2020.

The Biological Study Area is primarily made up of agriculture and is limited in biological diversity and consists of little natural habitats. Botanical surveys and field studies from 2018 to 2020 identified several non-native species. Of the species identified, 35 of them were listed as invasive by the California Invasive Plant Council. The invasive species are rated as high, moderate, or limited by the California Invasive Plant Council. The species rated as high include cheatgrass *(Bromus tectorum)*, yellow starthistle *(Centaurea solstitialis),* and perennial pepperweed *(Lepidium latifolium).* The high rating means it is a species with severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Appendix G of the Natural Environment Study provides a complete list of the species seen in the Biological Study Area and can be found in the technical studies bound separately.

Environmental Consequences

Build Alternatives

There are small segments of natural lands within the Biological Study Area, but the area where the proposed Build Alternatives are located is primarily made up of agriculture and is limited in biological diversity and consists of little natural habitats. Ruderal land found along roadsides does contain invasive non-native annual species, such as yellow star-thistle. However, all four Build Alternatives have the potential to positively impact the existing cover of weeds by reducing their spread through the elimination of invasive plant species and their seed by converting the unmanaged land to the paved roadway. Each Build Alternative would also convert some land into areas where routine weed removal practices would be implemented, resulting in less spread of invasive plant species.

Construction-related activities and soil disturbance from all Build Alternatives could result in the introduction and spread of noxious weeds and other invasive plants. Invasive plant species could also be spread through inappropriate erosion control

measures. Erosion control measures, such as the use of straw bales and seed, could result in the inadvertent introduction of invasive plant species into the project area. In compliance with Executive Order 13112, Invasive Species, and subsequent guidance from the Federal Highway Administration, landscaping and erosion control elements of the proposed project would not use plant species listed in the California Invasive Species List as noxious weeds.

In areas of 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 invasive species be found. With the incorporation of the avoidance, minimization, and/or mitigation measures listed below, no adverse direct impacts would occur regarding the spread of invasive weeds under any Build Alternative.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in the construction of any of the proposed improvements, and the project study area would remain undeveloped and in its current state relative to the presence of invasive plant species. Therefore, the project study area would continue to have large areas that allow unrestricted growth and spread of invasive weeds.

Avoidance, Minimization, and/or Mitigation Measures

The measures described below are proposed to reduce construction-related impacts from the project regarding the introduction and spread of noxious weeds and other invasive plants.

IS-1: All areas disturbed by project construction would be reseeded with native species suitable for the project location.

IS-2: All nonstandard special provisions would be included in the construction contract that requires construction equipment and vehicles to be cleaned before entering and exiting the project.

2.3.7 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with 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 time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development. These land use activities can degrade habitat and populations, alteration of hydrology, contamination, erosion, sedimentation, disruptions 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 Guideline 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 CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations Section 1508.7.

Affected Environment

The long-range analysis (year 2046) assumptions for traffic, air quality, and noise (in Sections 2.1.8, 2.2.5, and 2.2.6, respectively) all reflect the growth projections approved by Stanislaus County and the city of Modesto. Therefore, from a land use and circulation perspective, the approved long-range growth projects include cumulative impacts of the projects identified in Table 2.41. As a result, the project's long-range analysis for traffic, air quality, and noise also generally reflect these impacts and would not be evaluated here.

Resources Not Substantially Impacted by Cumulative Impacts

A cumulative impact analysis for the following is not evaluated because this project would have no direct or indirect impacts on existing and future land use, consistency with State, Regional and Local Plans and Programs, coastal resources, wild and scenic rivers, parks and recreation facilities, and wetlands and timberlands.

The following resources would be cumulatively affected by the proposed project and are evaluated here:

- Relocation and Real Property Acquisition
- Farmland
- Environmental Justice
- Historic Architectural Resources—Modesto Irrigation District
- Threatened and Endangered Species
- Noise
- Visual

The cumulative impact analysis is based on known projects that are currently proposed, approved, or under construction with Caltrans, Stanislaus County, and the city of Modesto. Table 2.42 presents a current list of projects included in the cumulative analysis.

Table 2.42 Past, Present, and Foreseeable Future Projects

Project Name	Jurisdiction	Project Location	Project Uses	Status
Woodglen Specific Plan	City of Modesto	City of Modesto	Allows for the development of 180 multi-family residential units and 353 low-density residential units.	Draft environmental impact report approved May 2012.
Tivoli Specific Plan	City of Modesto	City of Modesto	Allows for the development of between 1,900 and 3,200 housing units and 1,025,000 square feet of nonresidential land uses on about 345 acres. It includes mix-density housing.	Pending Implementation
North County Corridor	Stanislaus County/Caltrans	Oakdale / Riverbank	Build a new State Route 108 from existing State Route 108/Tully Road to the State Route108/120, just west of Oakdale.	Final environmental document completed on March 20, 2020.
Golden State Boulevard/Golf Road/Berkeley Avenue Intersection	City of Modesto	City of Modesto	Build operational improvements at the Golden State Boulevard/Golf Road/Berkeley Avenue Intersection.	Notice of Determination was submitted to the State Clearinghouse on November 6, 2018.
7th Street Bridge Project	Caltrans/Stanislaus County/City of Modesto	City of Modesto	Build a bridge crossing over the Tuolumne River along the 7th Street corridor.	Final environmental document completed in March 2017.
State Route 99/Service Road/Mitchell Road Interchange Project	Caltrans/City of Ceres/County of Stanislaus	City of Ceres	The project would involve the construction of a new interchange at Service Road.	Final environmental document finalized in September 2018.
State Route 132 West	Caltrans/Stanislaus County/City of Modesto	City of Modesto	Build a four-lane freeway from Dakota Avenue to just east of State Route 99 at the Needham Street Bridge Overcrossing.	Phase one in construction. Phase two scheduled for construction in 2026.

Environmental Consequences

This section is the baseline evaluation of the cumulative analysis, with identification of resource study areas, resource health or status, and project contribution to cumulative effects, based on the individual evaluations provided and summarized in Table 2.42.

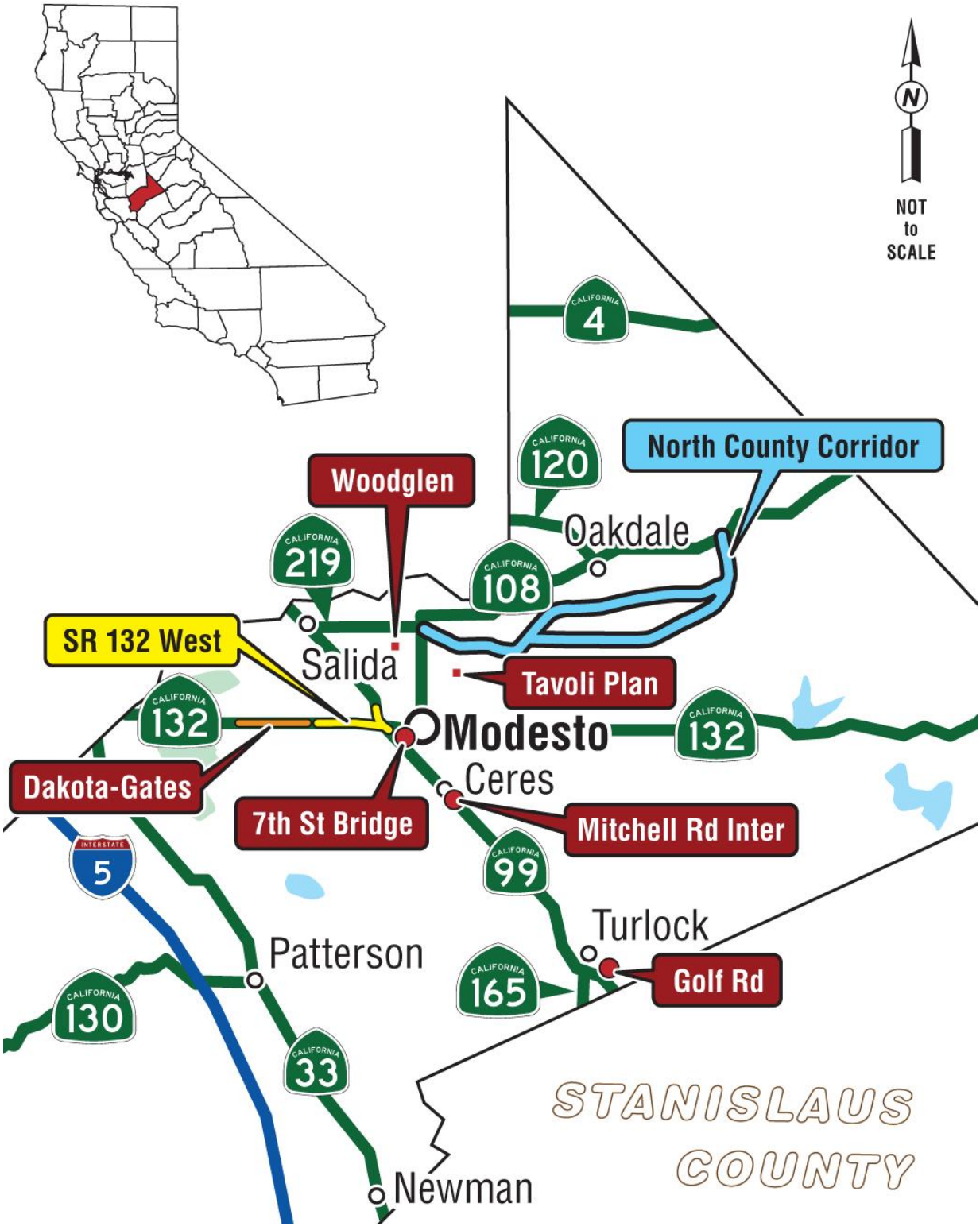
Resource study areas are generally on the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope (or area within which projects may contribute to a specific cumulative effect) of the cumulative impact analysis varies depending on the specific environmental issue area being analyzed.

Farmland

Resource Study Area

The resource study area for evaluating cumulative effects on farmland is Stanislaus County (see Figure 2-34). The Natural Resources Conservation Service, the federal agency responsible for farmland protection, organizes and administers farmland protection at the county level. Farmland data that are produced by the California Department of Conservation is reported on a county level.

Figure 2-34 Farmland Resouce Study Area



Current Health of Resource

As development in the area continues, agricultural lands continue to be converted to nonagricultural uses. According to data from the California Department of Conservation, from 2004 to 2018, about 14,600 acres of nearly 840,000 acres of agricultural land in Stanislaus County were removed from agricultural use (1.7 percent). Over that time frame, there have been increases in farmlands categorized as important by the California Department of Conservation. This includes prime and unique farmland, important farmland, and farmland of local importance. From 2004 to 2018, the acres of important farmland increased from 396,428 acres to 428,450 acres. That is a net increase of 31,471 acres. While there has been an overall loss of farmland, the preservation and expansion of important farmland has added 8 percent to its total acreage. This is primarily due to the increase in unique farmland due to the expansion of high yield crops, such as vineyards.

Williamson Act properties are properties that have entered contracts to restrict specific parcels to open space or agricultural use. These contracts last a minimum of 10 years, after which they can be renewed or terminated. Projects that condemn or acquire only a portion of a Williamson Act parcel would not affect the contract on the remaining parcel unless there is an adverse effect on the remaining parcel. In that case, the contract on the remaining parcel could be canceled. This resource is stable.

Direct and Indirect Impacts by the Project

The project would convert the following amount of prime and unique farmland into roadway:

Table 2.43 Stanislaus County Farmland Land Conversion Table by Build Alternative

Land Use	Build Alternative 1 (Acres)	Build Alternative 2 (Acres)	Build Alternative 3 (Acres)	Build Alternative 4 (Acres)
Agriculture	300	446	306	282
Prime and Unique	222	371	237	234
Statewide and Local Importance	12	22	3	0
Williamson Act Property	172	172	170	175

Source: Community Impact Assessment (August 2020).

Of the farmland being directly or indirectly impacted, 97 acres to 154 acres are currently under a Williamson Act contract. These are partial acquisitions of these properties. However, the remaining parcel would not be adversely affected and could remain under a Williamson Act contract.

Foreseeable Future Projects

All the projects listed in Table 2.42 are within this resource study area for farmland. Of those, the Service/Mitchell Interchange, State Route 132 West, North County Corridor, the Woodglen Specific Plan, and the Tivoli Specific Plan have impacts on prime and unique farmland.

Potential Cumulative Impacts

Of the projects from Table 2.42, five are within the resource study area and have impacts on farmland. These are the expected impacts:

North County Corridor:

- 351 Acres of Prime and Unique Farmland
- 351 Acres Under Williamson Act Contract

Woodglen Specific Plan:

- 79 Acres of Prime and Unique Farmland
- 79 Acres Under Williamson Act Contact

Tivoli Specific Plan:

- 200 Acres of Prime and Unique Farmland
- 286 Acres Under Williamson Act Contract

Service/Mitchell Interchange:

- 3 Acres of Prime and Unique Farmland
- None Under Williamson Act Contracts

State Route 132 West:

- 64.8 Acres of Prime and Unique Farmland
- Williamson Act unknown.

When added to the conversions expected for the State Route 132 Dakota Avenue to Gates Road project, the total prime and unique farmland conversion is 1,070 acres. According to the California Department of Conservation, there are 372,350 acres of prime and unique farmland in Stanislaus County. Therefore, the cumulative impacts for all foreseeable future projects are about 0.3 percent of the prime and unique farmland for Stanislaus County. While it is possible to protect existing farmland from development with the purchase of agricultural easements, once converted to other uses it is very difficult to convert property back to farmland. Because of that, there is a cumulative impact on farmland. This project would convert the most amount of farmland of all the projects. Because of this, this project would have a significant contribution to the cumulative impact.

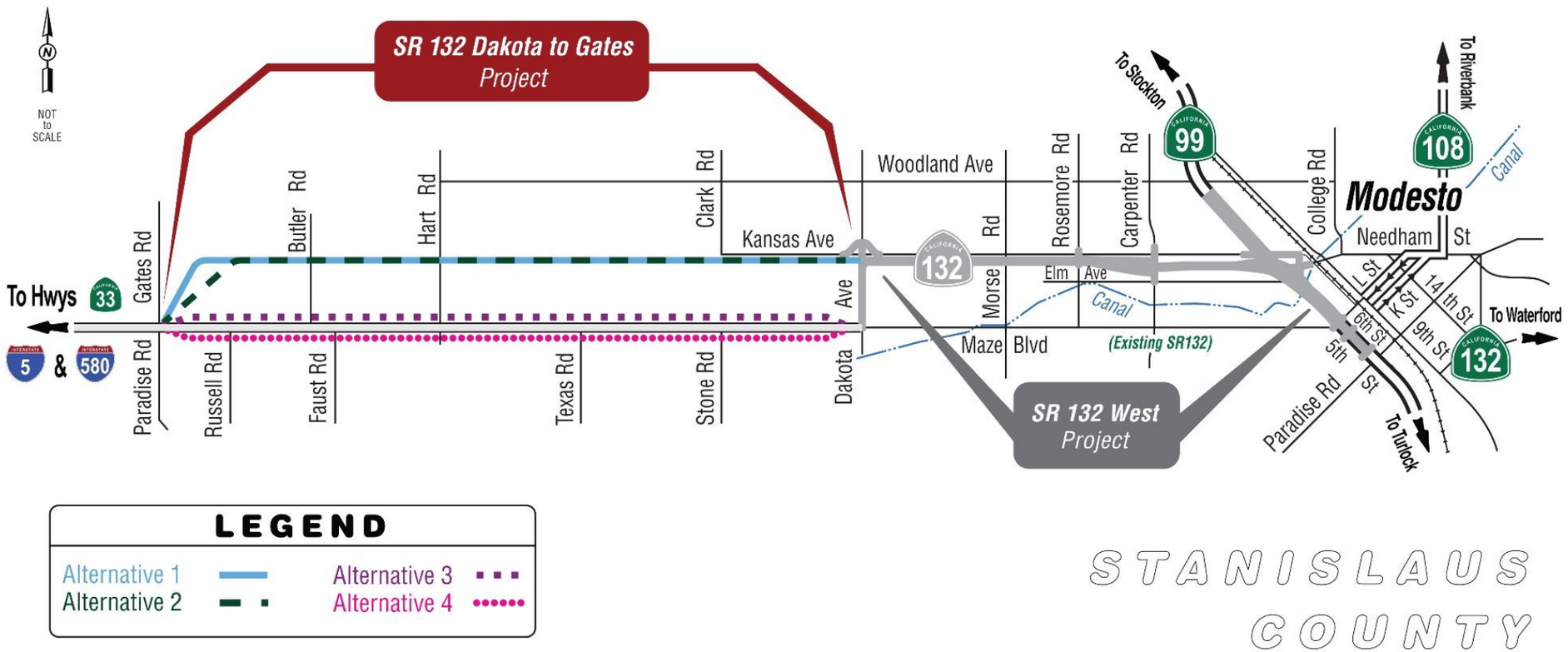
Together, the projects would remove 961 acres of farmland out of Williamson Act properties. The North County Corridor project determined that there would be a potentially significant impact on Williamson Act properties because it would remove more than 100 acres from one property owner. This type of impact does not occur on the proposed project. None of the other projects identified a similar type of impact. It is not expected that any of the other projects would take more than 100 acres from one property owner.

Visual

Resource Study Area

The resource study area used in the assessment of visual impacts includes the proposed State Route 132 Dakota Avenue to Gates Road project area, the State Route 132 West Freeway/Expressway project area, and those areas surrounding these projects that would have direct visual access to the respective project sites. The limits of these projects extend from State Route 99 in the city of Modesto to the east to about 1 mile west of the realigned Gates Road/Paradise Road intersection to the west. Additionally, construction areas of both State Route 132 projects overlap at and near North Dakota Avenue and Maze Boulevard and along Kansas Avenue, north of these proposed alignments.

Figure 2-35 Visual Impacts on the Resource Study Area



Current Health of Resource

The resource study area is positioned within the agricultural region of "The Great Central Valley" of California. The regional landscape is characterized by large homogeneous open expanses of low-lying landforms, well suited for the existing agribusiness operations that dominate the area. This rural agricultural landscape is considered a highly valued heritage and visual resource by Stanislaus County.

The current visual health of the immediate project area is generally stable, with a moderately high degree of health. However, trends are continuing to push development west, which is expected to result in a progressive decline in the health of the region (also see Table 2.41). Degradation of prime agricultural resources, and in particular, the removal of existing fruit and nut orchards to make way for development has caused and will continue to cause visual impacts to the agricultural landscape. So far, there has been a 1.7 percent loss of farmland in Stanislaus County within the last 25 years.

Visual impacts for the proposed project have been assessed and documented in the associated Visual Impact Assessment document.

Direct and Indirect Impacts by the Project

The Visual Impact Assessment evaluated visual impacts for each of the four Build Alternatives. Visual impacts were assessed by two factors—resource change and viewer response to the expected resource change. Resource change is assessed by evaluating the visual character and visual quality of the resources that make up the project corridor before and after construction. Viewer response is a measure or prediction of the viewer's reaction to expected changes in the visual environment. Visual analysis was evaluated for this project, and the following determinations are presented below (see Table 2.44). For more information, see the Visual Impact Assessment.

Table 2.44 Summary Overview of Visual Impacts by Build Alternative

Build Alternatives	Resource Change	Viewer Response	Visual Impact
Build Alternative 1	Moderately High	Moderate	Moderate
Build Alternative 2	High	Moderately High	High
Build Alternative 3	Low	Moderate	Moderately Low
Build Alternative 4	Low	Moderate	Moderately Low

Foreseeable Future Project

As mentioned, two highway projects within the resource study area must be considered collectively. The first is the proposed State Route 132 Dakota Avenue to Gates Road project that begins in and near North Dakota Avenue and ends about 1 mile west of the realigned Gates Road/Paradise Road intersection. The second is the locally funded State Route 132 West Freeway/Expressway that extends west from State Route 99 in the city of Modesto to North Dakota Avenue. The State Route 132 West Freeway/Expressway is immediately next to and east of the proposed State

Route 132 Dakota Avenue to Gates Road project and is currently under construction. The State Route 132 West Freeway/Expressway interfaces with the State Route 132 Dakota Avenue to Gates Road project at and near the intersections of North Dakota Avenue and Maze Boulevard and North Dakota Avenue and Kansas Avenue.

Potential Cumulative Impacts

The visual concern with these two consecutive highway construction projects (State Route 12 Dakota Avenue to Gates Road/State Route 132 West Freeway/Expressway) is the encroachment of urbanization into a moderately high to highly intact rural agricultural landscape. Urban elements in the form of expansive roadway right-of-way, footprints and hardscape areas, large-scale interchanges and bridge structures, retaining walls and soundwalls, and the like would be built along portions of the corridor. As a result, both projects are expected to incrementally reduce existing prime agricultural land while simultaneously adversely impacting the existing visual character and quality of the region.

Visual studies for each project have determined adverse visual impacts associated with each of the project alternatives, along with mitigation strategies to reduce impacts and maximize the preservation of existing visual resources. However, mitigation measures for State Route 132 Dakota Avenue to Gates Road—Build Alternative 2 would require extraordinary efforts to achieve an impact reduction to existing visual resources.

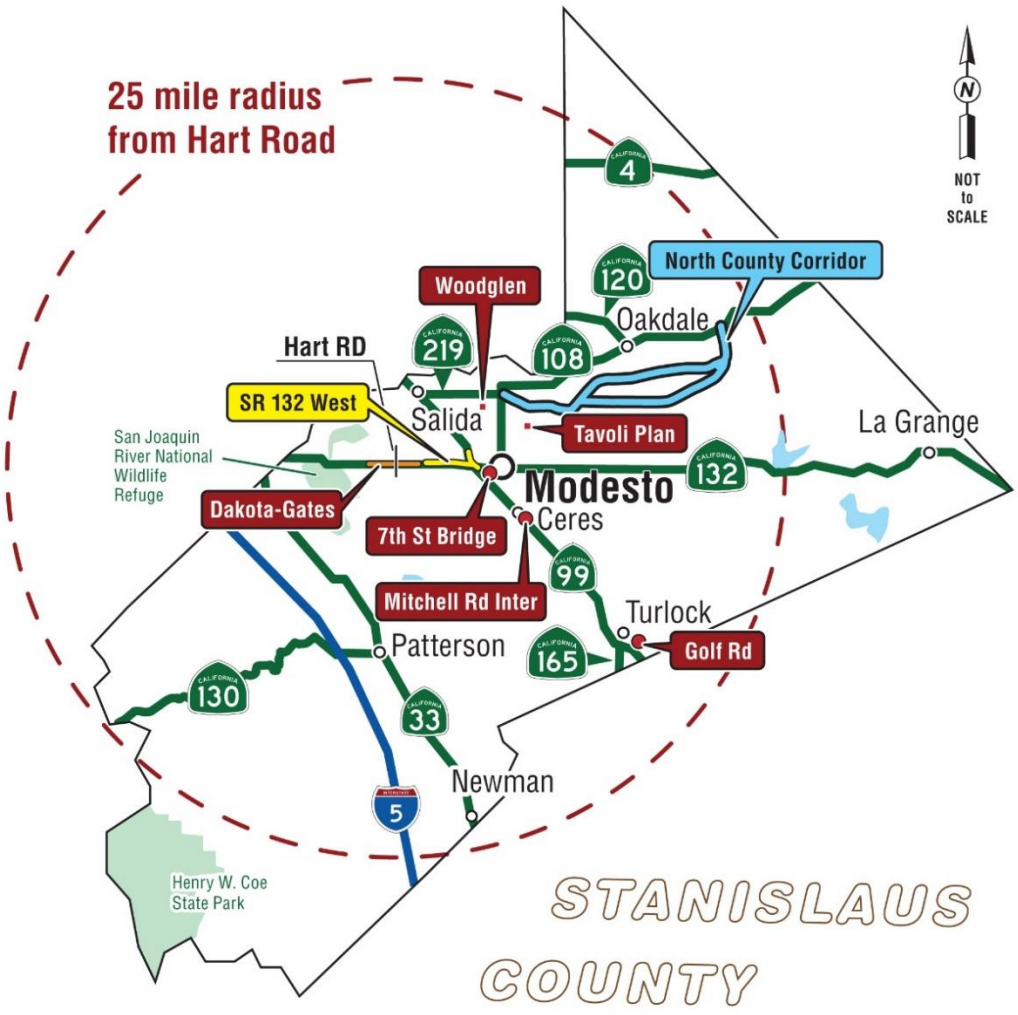
The proposed State Route 132 Dakota Avenue to Gates Road project has determined adverse visual impacts ranging from moderately low to high, depending on the selected Build Alternative. The State Route 132 West Freeway/Expressway that is currently under construction has also identified adverse visual impacts associated with the built project. When combined, it is expected that incremental visual changes would occur, causing a reduction to the existing visual resource of the regional agricultural character. Therefore, due to the likelihood of these visual changes, cumulative impacts are expected.

Relocation and Real Property Acquisition (Housing)

Resource Study Area

As reported in the Relocation Impact Report, for purposes of relocation, a 25-mile radius from Hart Road and State Route 132 was considered for replacement area for homes and business is affected by the project. This includes almost all of Stanislaus County, including all of Modesto, Turlock, and Waterford, as well as the southern portion of San Joaquin County, including Ripon, Manteca, Tracy, and the portion Stockton south of Harding Way.

Figure 2-36 Relocation Impacts Resource Study Area



Current Health of Resource

There are over 180,000 housing units available within the resource study area. The current vacancy of housing is at 3.9 percent. Additionally, two of the foreseeable future projects (see Table 2.41) would add 1,900 to 3,200 additional housing units. The current health of the housing stock is stable because there is enough housing stock near the project area. There is currently adequate business stock in the resource study area.

Direct and Indirect Impacts by the Project

The project expects the relocation of the following:

- Build Alternative 1: Four Single-Family Homes
- Build Alternative 2: Seven Single-Family Homes
- Build Alternative 3: 34 Single Family Homes
- Build Alternative 4: 25 Single Family Homes

The maximum number of expected relocations is 34. This is easily handled by the currently available properties within the resource study area.

The project would require the full acquisition of up to four commercial businesses, dependent on the Build Alternative selected.

Foreseeable Future Projects

All the projects listed above in Table 2.42 are in the resource study area for relocations. Of those, the State Route 132 West, North County Corridor, and 7th Avenue have expected residential relocation.

Potential Cumulative Impacts

Between the projects listed in Table 2.42, about 182 residential relocations are expected. With the addition of the relocations from the State Route 132 Dakota Avenue to Gates Road project, this would bring the total up to about 216.

Because of the 3.9 percent vacancy rate and several thousand additional properties being built by the Tivoli and Woodglen Specific Plans, there is enough housing to handle the relocations for all the proposed projects, including State Route 132 Dakota Avenue to Gates Road project. There is not a significant cumulative effect caused by the relocations.

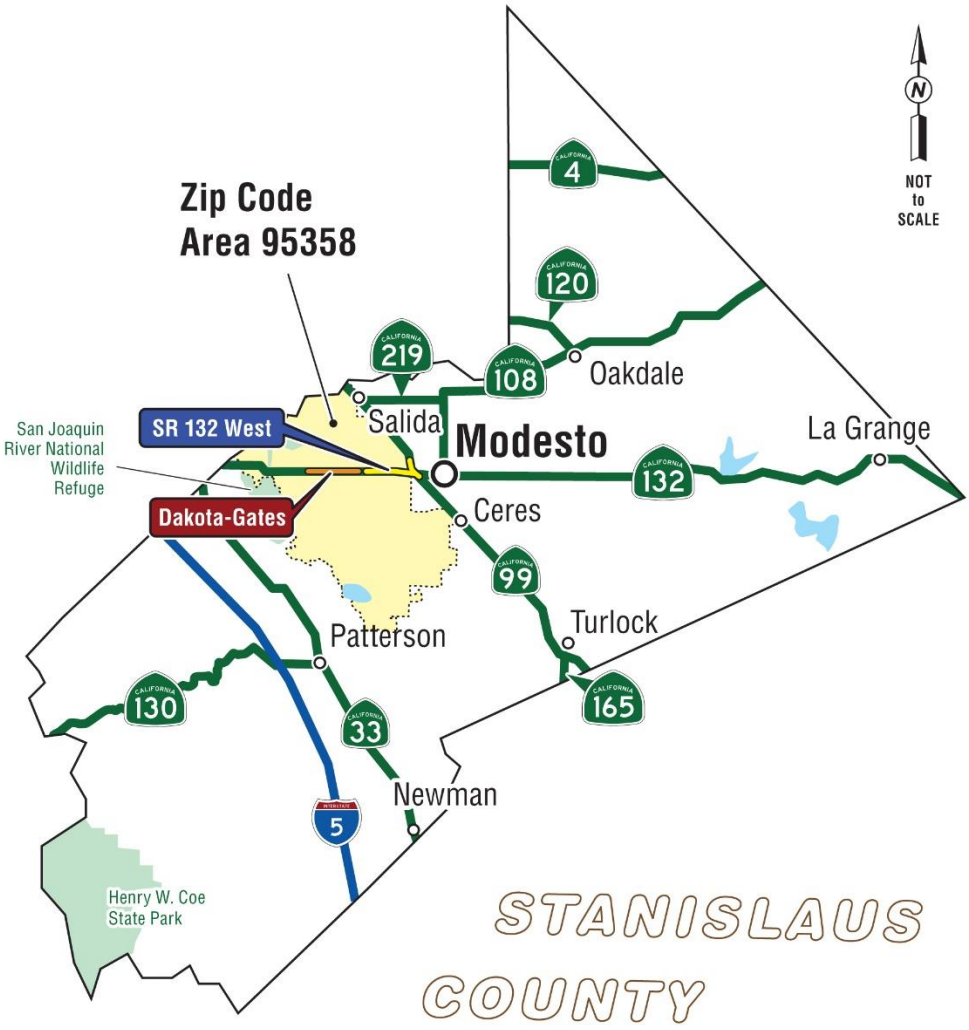
The total amount of business relocations expected for all the foreseeable future project is about 66. It is expected that there are sufficient opportunities for these businesses to relocate. Thus, there is no cumulative impact due to business relocation.

Environmental Justice

Resource Study Area

The resource study area for Environmental Justice has been defined as Zip Code 95358. This a census-designated area that includes the entire project area and its surrounding communities. It bordered on the west by the San Joaquin River Wildlife Refuge, West Modesto on the east, Fulkerth Road in the South, and Salida in the north.

Figure 2-37 Environmental Justice Impacts Resource Study Area



Current Health of Resource

Environmental justice was first identified as a national policy in 1994 when President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Project Study area residents that belong to an ethnic minority were identified in the 2013 to 2017 American Community Survey 5-Year Estimates. The following ethnic minorities are protected under Executive Order 12898: American Indian or Alaskan Native, Asian or Pacific Islander, Black, Not of Hispanic origin, or Latino (Hispanic). Protection also extends to the households within the project study area living below the low-income threshold established by the U.S. Census Bureau and Health and Human Services.

In 2012, the U.S. Department of Transportation published Order 5610.2(a) that describes how the objectives of environmental justice will be integrated into planning and programming, rulemaking, and policy formulation. The order sets forth steps to prevent disproportionately high and adverse effects on minority or low-income populations through Title VI analyses and environmental justice analyses conducted as part of federal transportation planning and NEPA provisions. It also describes the specific measures to be taken in addressing instances of disproportionately high and adverse effects and sets forth relevant definitions. A disproportionate impact defined by the Federal Highway Administration is:

- Predominantly borne by a minority and/or low-income population,
- Or suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority/non-low-income population.

In 2011, Stanislaus County issued a report that indicated that impacts of the proposed transportation projects planned would not disproportionately fall on environmental justice communities. The issues evaluated were congestion and air quality. The current health of the resource is stable.

Direct and Indirect Impacts by the Project

The State Route 132 Dakota Avenue to Gates Road project identified one environmental justice community within the project area. The project identified a mobile home park on Maze Boulevard, about 0.5 mile from the existing State Route 132 (Maze Boulevard)/Paradise Road/North Gates Road Interchange. This mobile home park is presumed to be a low-income community. Build Alternative 4 would acquire 14 mobile homes within that community. It would effectively remove the entire mobile home park. Because it would completely remove this low-income community, Build Alternative 4 would have a disproportionate impact on a low-income community. None of the other Build Alternatives would impact a low income or minority community.

Foreseeable Future Project

One other foreseeable future project in the resource study area for environmental justice is the State Route 132 Project. This project is immediately east of the State Route 132 Dakota Avenue to Gates Road project.

Potential Cumulative Impacts

The State Route 132 West Freeway/Expressway identified most of the project area as either low-income or minority, based on the population numbers in the census blocks. The project identified disproportionate visual, noise, relocation, and construction impacts. There are no cumulative environmental justice impacts based on noise, relocation, or construction because the State Route 132 Dakota Avenue to Gates Road project does not have disproportionate impacts to the same environmental justice communities.

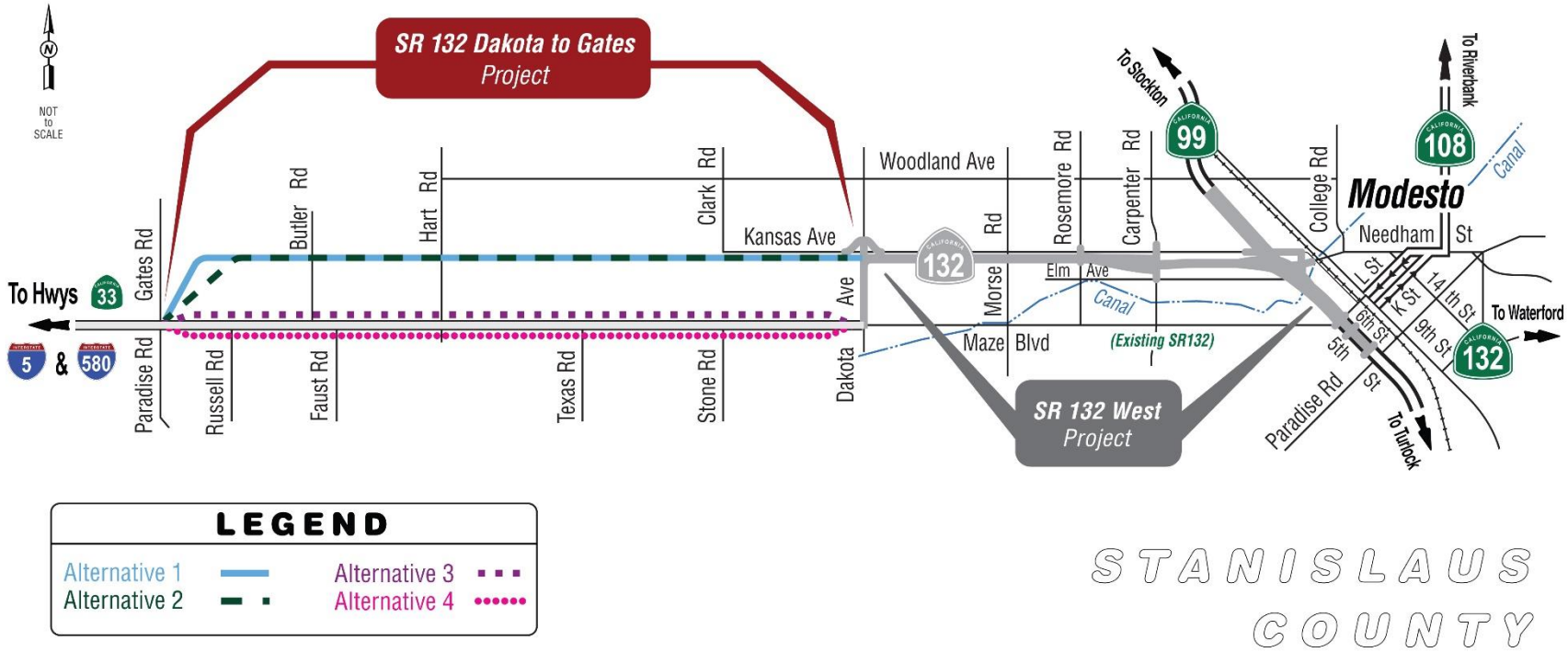
Both projects have relocation impacts. The State Route 132 West Freeway/Expressway would require the relocation of up to 30 homes in low-income and/or minority communities. The total number of potential relocations in environmental justice communities is 44 homes. This is not a cumulative impact for two reasons. The first is that the environmental justice community affected by the State Route 132 Dakota Avenue to Gates Road project is over 5 miles away from the communities affected by the State Route 132 West project. These projects are affecting separate communities and thus a cumulative impact to any specific community would not occur. While both projects have disproportionate impacts, they do not have a cumulative effect to the same community.

Noise

Resource Study Area

The noise resource study area has been identified as the areas around State Route 132 Maze Boulevard from State Route 99 to Interstate 5. This would encompass a significant section of a major route through Stanislaus County.

Figure 2-38 Noise Impacts Resource Study Area



Current Health of Resource

The current noise levels in this area range from 45 A-weighted decibels to 76.5 A-weighted decibels. The noise level varies by level of development and traffic. Projects with Federal Highway Administration involvement use established noise levels to determine whether a noise impact has occurred. For the specific criteria see Section 2.2.6, Noise, above. Due to development, more property within the resource study area is expected to increase. The health of this resource is declining.

Direct and Indirect Impacts by the Project

The Federal Highway Administration determines whether noise abatement needs to be considered based on:

- The noise levels approach or exceed the noise abatement criteria in the design year (20 from the new facility open to the public date) or
- There is a substantial increase in noise between the Build Alternative and the No-Build (No-Action) Alternative in the design year.

The noise abatement criteria is based on type of land use (see Noise Section for further information). For example, the most common land use evaluated for this project is homes. The noise abatement criteria for homes is 67 A-weighted decibels. Caltrans protocol defines a substantial noise increase as 12 A-weighted decibels.

When either condition is met, noise abatement measures are considered. The standard measure Caltrans uses is a soundwall. However, proposed soundwalls are evaluated for their feasibility and cost effectiveness. (See Noise Section).

Build Alternative 1

Under Build Alternative 1, five properties would see a substantial increase in noise levels. Noise abatement in the form of a soundwall was considered, but none of the proposed soundwalls met the feasibility and reasonability requirements.

Build Alternative 2

Under Build Alternative 2, the noise levels for five properties would see a substantial increase in noise levels. Soundwalls were evaluated, but none met the feasibility and reasonability requirements.

Build Alternatives 3 and 4

Under Build Alternatives 3 and 4, there would be no properties that approach or exceed the Federal Highway Administration’s noise abatement criteria. While the noise levels will reach the criteria for some residences, the majority will be purchased by the State. Following the land acquisition, some farmland would be left behind; however, it has no established noise abatement criteria.

Foreseeable Future Project

State Route 132 West Freeway/Expressway is another foreseeable future project in the resource study area for noise. This project is immediately east of the State Route 132 Dakota Avenue to Gates Road project.

Potential Cumulative Impacts

The State Route 132 West Freeway/Expressway determined that 276 homes would either meet the noise abatement criteria, have a substantial increase in noise levels, or both. One soundwall was approved, which brought some noise reduction to 171 homes. This leaves 105 homes still affected by the project.

Both projects would have 110 properties that meet the noise abatement criteria, have a substantial increase in noise levels, or both. This is a significant number of homes that would be affected. Thus, there is a cumulative impact on noise within the resource study area. However, because this proposed project only accounts for three to five of those, it is not a significant contributor to this impact.

Historic Architectural Resources: The Butler Ditch from the Modesto Irrigation District

Resource Study Area

The resource study area for cultural resources has been defined as the Modesto Irrigation District. The Modesto Irrigation District irrigation system is an irrigation system that runs across the county. The State Route 132 Dakota to Gates project would cross the Butler Ditch at two locations. The Butler Ditch is a contributing feature of the Modesto Irrigation District.

Current Health of Resource

The Modesto Irrigation District is one of the earliest canal systems in Stanislaus County and the San Joaquin Valley and was established under the Wright Act in 1887. This allowed for the formation of an irrigation district and allowed taxes to be levied to fund construction. The Modesto Irrigation District is one of the last remaining systems to survive from this period to the present day. It is assumed eligible for the National Register of Historic Places and the California Register of Historic Places. Its current status is stable.

Direct and Indirect Impacts by the Proposed Project

Build Alternative 1

Build Alternative 1 would involve the construction of an expressway over the Butler Ditch at two locations (see Figure 1-5). Butler creek would either be culverted or piped for the distance of crossing the new expressway at two locations. The western location about 300 feet of open canal would be converted to a pipe or an underground culvert under the proposed State Route 132. At the eastern location, about 250 feet of open canal would be

converted into a pipe or underground culvert. The essential function of Butler Ditch and the Merced Irrigation District would be maintained.

Build Alternative 2

Build Alternative 2 would involve the construction of a freeway across Butler Ditch at two locations (see Figure 1-6). An interchange would be built at the western location. This would require 2,300 feet of open canal to be converted into a pipe or underground culvert, under the proposed State Route 132 freeway. At the eastern location, about 300 feet of open canal would be converted into piping or underground culverts. The essential function of Butler Ditch and the Merced Irrigation District would be maintained.

Build Alternative 3

This alternative would have no effect on Butler Ditch.

Build Alternative 4

This alternative would have no effect on Butler Ditch.

The State Historic Preservation Office concurred on June 30, 2020, that this proposed project would not affect the function of eligibility of Butler Creek or the Merced Irrigation District. The State Historic Preservation Office also concurred that there is no adverse effect to the Butler Ditch or to the Merced Irrigation District.

Foreseeable Future Project

Of the projects listed in Table 2.42, only the North County Corridor project is within the resource study area for this resource. The North County Corridor project will require four crossings of Merced Irrigation Lateral Number 6, which is a separate contributing feature of the Merced Irrigation District.

Potential Cumulative Impacts

The North County Corridor project has four at-grade crossings of the Merced Irrigation Lateral Number 6. The State Historic Preservation Officer concurred with Caltrans' determination that the North County Corridor project would not affect the function or the eligibility for the National Register of the Merced Irrigation District.

The State Historic Preservation Office determined that the State Route 132 Dakota Avenue to Gates Road project would not affect the function or the eligibility for the National Register of the Modesto Irrigation District on June 30, 2020. This determination would be made with the awareness of the proposed impacts of North County Corridor. Thus, cumulative impacts to the Modesto Irrigation District are not expected.

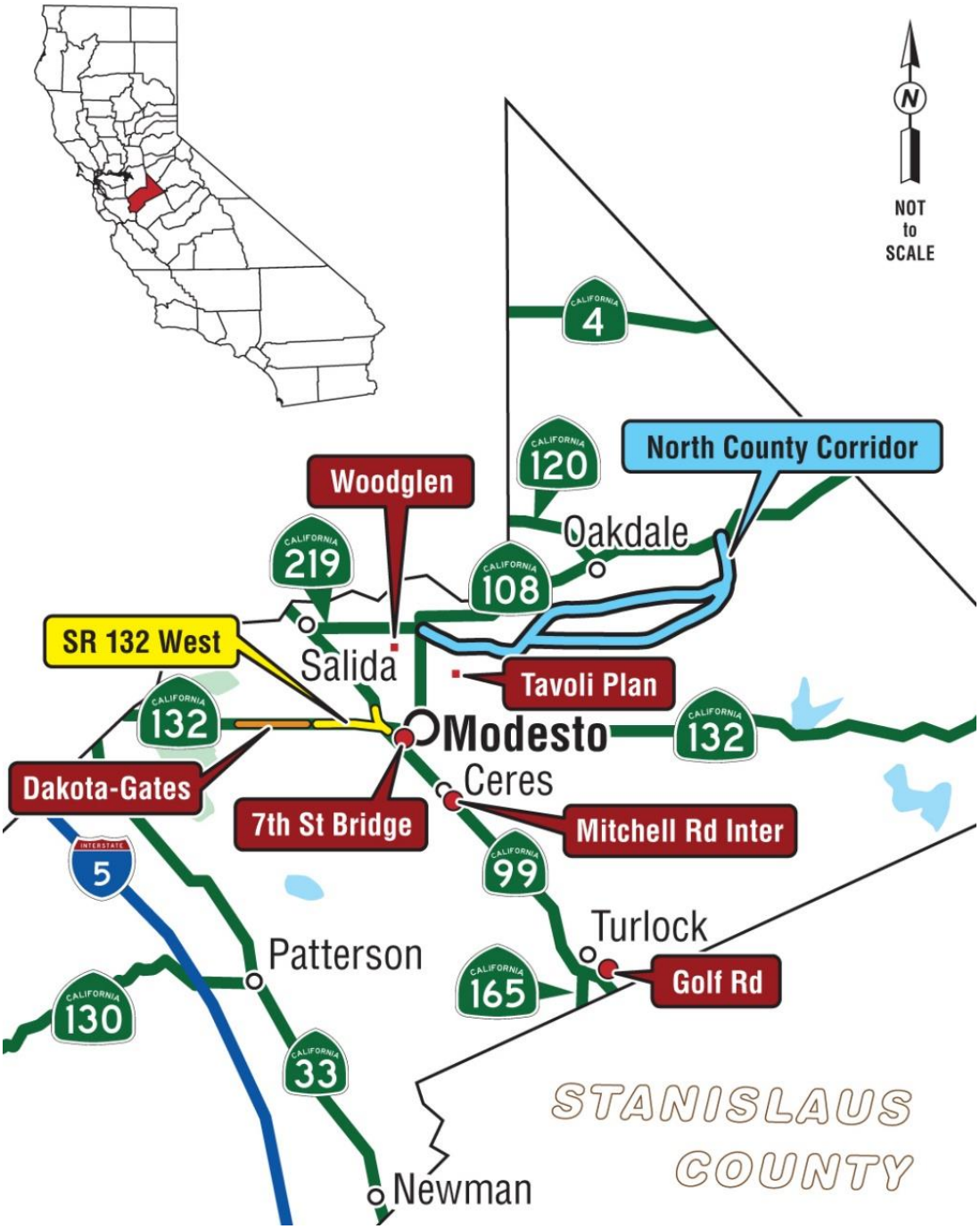
Threatened and Endangered Species

Swainson's hawks (Buteo swainsoni)

Resource Study Area

This proposed project would acquire Swainson's hawk foraging habitat. A major component of Swainson's hawk foraging habitat is the types of farmland. Therefore, the resources area for Swainson's hawk would be the same as the resource area for farmland, which is Stanislaus County.

Figure 2-39 Threatened and Endangered Species' Resource Study Area



Current Health of Resource

Swainson's hawks are listed as state threatened. Swainson's hawks suffered a decline due to pesticides during the 70s and 80s. However, the use of these pesticides has been reduced. They have also taken to grazing land and pastureland. Their current status is stable.

Direct and Indirect Impacts by the Proposed Project

The proposed project would have the following impacts to Swainson's hawk foraging habitat as shown in Table 2.45 below.

Table 2-45 Impacts to Raptor Foraging Habitat by Build Alternatives

Land Cover Type	Build Alternative 1 (Acres)	Build Alternative 2 (Acres)	Build Alternative 3 (Acres)	Build Alternative 4 (Acres)
Permanent Impact—Annual Grassland	0.00	0.00	0.60	0.60
Permanent Impact—Ruderal	6.25	6.40	7.78	8.28
Permanent Impact—Hayfield	14.00	84.24	33.59	50.41
Permanent Impact—Irrigated Pasture	3.83	3.71	14.21	5.24
Permanent Impacts Total	24.08	94.35	56.18	64.53
Temporary Impact—Ruderal	0.00	0.00	0.57	0.60
Temporary Impact—Grass/Hay Crop	2.09	0.00	3.73	14.48
Temporary Impact—Irrigated Pasture	0.00	0.00	3.43	0.14
Temporary Impacts Total	2.09	0.00	7.73	15.22

Foreseeable Future Project Potential Cumulative Impacts

The proposed project would have the following impacts within the resource study area for Swainson's hawk:

- Woodglen: 44.1 Acres
- Tivoli: 298 Acres
- North County Corridor: 397 Acres
- Service/Mitchell Interchange: 9.84 Acres
- State Route 132 West: 9.83 Acres

In addition to the acreage from State Route 132 Dakota Avenue to Gates Road project, these impacts would result in a total loss of 834 acres of foraging habitat for all six projects. There is no known inventory of Swainson's hawk foraging habitat in Stanislaus County. However, there is an inventory of the number of hayfields and irrigated pastureland within the County**.** Hay and irrigated pastureland are two of the types of land that serve as hawk foraging habitat, and there are over 68,000 acres of hayfields and irrigated pastureland within the county. If you were to include rural lands and annual grassland, this would make that estimate significantly higher. Thus, the 834 acres of foraging habitat by this proposed project and the other foreseeable future projects is less than 0.1 percent.

Higher quality habitat is within the San Joaquin River National Wildlife Refuge and the grasslands west of the San Joaquin River. The combination of the habitat and avoidance and minimization measures result in no expected cumulative impact to hawk foraging habitat.

Avoidance, Minimization, and/or Mitigation Measures

Farmland

Unavoidable impacts to farmland would be minimized by the measures below.

FARM 1: Conversion of prime and unique farmland to non-farmland uses will be mitigated by preserving an equal amount of agricultural land within the County. This would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural land within Stanislaus County. This will be negotiated during the Design phase of the project.

FARM 2: Where parcels are bisected by a segment of the proposed project, but enough usable land remains on either side of the highway to be cultivated, then access for livestock, machinery, and/or drainage shall be built where reasonable and feasible to provide access to both portions of the property so that the land is still viable for farming operations.

FARM 3: During the project's final design phase, Caltrans would coordinate with property owners and agricultural operators to incorporate design features to maintain access and operation.

FARM 4: The contractor would reconstruct irrigation ditches and install irrigation pipelines damaged during construction.

FARM 5: The contractor would reimburse any damage from construction-related activities that result in the loss of crops.

Visual

Specific mitigation measures for visual impacts are outlined in Section 2.1.9.

Relocation and Real Property Acquisition

ROW-1: For any person(s) whose real property interests may be impacted by the proposed project, the acquisition of those property interests would comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federally or federally assisted programs or projects. It was created to provide for and ensure the fair equitable treatment of all such persons.

Cultural Resources

Implementation of the following measures would reduce any adverse impacts caused by construction to the Butler Ditch:

CR-1: A Principal Architectural Historian will review construction plans as developed and monitor construction activities associated with the Modesto Irrigation District.

CR-2: The State Historic Preservation Officer would be notified immediately if any significant changes are made to the construction plans or during construction activities that have the potential to adversely impact (the Modesto Irrigation Historic District) or any of its contributing features.

Environmental Justice

The acquisition of real property interests would comply fully with the Title VI of the Civil Rights Act of 1964 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Threatened and Endangered Species

Implementation of the following minimization measures would reduce project-related impacts to the state-endangered Swainson's hawk and the tricolored blackbird, which is a California Species of Special Concern for all Build Alternatives:

TE-7: A pre-construction survey would be completed within suitable habitat to ensure no birds are nesting in or next to the project footprint. A total of four surveys may be conducted from February 15 to July 15 or December 1 to January 31, depending on the start of initial ground-breaking activities.

TE-8: If an active tricolored blackbird nest is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, Caltrans would propose additional minimization measures in coordination with the U.S. Fish and Wildlife Service.

TE-9: A protocol-level survey would be conducted before the start of construction and would follow the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. If Swainson's hawks are identified within the Biological Study Area, construction activities within permitted work areas shall occur between October 1 and January 31 to reduce potential impacts to Swainson's hawk breeding/nesting season. If construction must occur during the period from February 1 to September 30, a qualified wildlife biologist shall conduct pre-construction surveys for nesting or foraging Swainson's hawks. The timeline of the pre-construction surveys would be determined in coordination with the California Department of Fish and Wildlife for review and approval. California Department of Fish and Wildlife shall be consulted to establish protection measures, such as buffers until the young have fledged. Disturbance of active

nests shall be avoided until it's determined that nesting is complete, and the young have fledged.

TE-10: A special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction.

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance Under CEQA

The proposed project is a joint project by the California Department of the Transportation 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 California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 and the Memorandum of Understanding dated December 23, 2016, and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between CEQA and NEPA is the way significance is determined. CEQA requires 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. Each and every significant effect on the environment must be disclosed in the environmental impact report and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an environmental impact report. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance

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

3.2 CEQA Environmental Checklist

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

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see 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.

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

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

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

No Impact—The proposed project would not have an adverse effect on a scenic vista because there are no official scenic vistas or scenic resources within the project area.

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

No Impact—The proposed project is not on a state scenic highway. Existing State Route 132 (Maze Boulevard) west of Modesto in the project limits is not an officially designated Scenic Highway or listed as eligible to become a Scenic Highway. According to Chapter 2 Circulation Element of the Stanislaus County General Plan, Interstate 5 is the only officially designated State Scenic Highway in Stanislaus County.

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?

Significant and Unavoidable Impact—The project would create a new highway with thousands of vehicles traveling along it and its associated local roads each day through a largely rural and undeveloped area. The existing local roads in the area combine with the rural setting to create a disjointed visual setting of both the natural and build environment. The visual impacts by alternative are nearly identical due to the similar nature of each proposed alternative.

No-Build (No-Action) Alternative

While roadway systems tend to degrade over time, associated visual impacts are not expected if the No-Build (No-Action) Alternative is selected. The No-Build (No-Action) Alternative would result in no change to the project corridor. The No-Build (No-Action) Alternative would allow for all the existing mature trees and vegetation along the project site to remain, as well as all the existing agricultural lands. However, the No-Build (No-Action) Alternative would also result in more traffic congestion because the population would continue to grow, and the associated amount of highway travelers would continue to increase, which would reduce the visual character and quality of the area.

Build Alternatives 1 and 2

Build Alternative 1 and 2 are within the New Alternative Visual Assessment Unit. Both alternatives propose a new east/west expressway on the south side of Kansas Avenue, extending from North Dakota Avenue to the west and connecting to the existing State Route 132 (Maze Boulevard) roadway alignment past the realigned Gates Road/Paradise Road intersection to the west. This new roadway would be built on and through existing prime agricultural lands. The proposed State Route 132 (Maze Boulevard) roadway alignments of Alternatives 1 and 2 are expected to cause a high level of disruption to the existing visual character of the region, which is considered a high visual resource for Stanislaus County. Additionally, the proposed roadway alignments would add an urban quality to this intact agricultural farmland.

Build Alternative 1 would have a moderately high level of impact on existing visual resources because views are expected to degrade. Key Views 1A and 1B, found in Section 2.1.9, have the highest levels of impact due to viewer proximity and their direct visual access to the proposed project facilities. The existing orchard viewshed would be replaced with views to a new 25-foot-high

North Dakota Avenue bridge overcrossing and new 180-foot-wide, four-lane expressway. Visual resource impacts for Key Views 1C and 1D are considerably lower because surrounding neighbors would be visually screened from the new facilities by existing orchards or as a result of greater viewing distances.

Build Alternative 2 would have a high level of impact on existing visual resources because views are expected to degrade. Key Views 2A and 2B, which are identical to key views 1A and 1B, would have a high level of impact due to viewer proximity and their direct visual access to the proposed project facilities. Views would degrade because the existing orchard viewshed would be replaced with views to a new 25-foot-high North Dakota Avenue bridge overcrossing and new 180-foot-wide, four-lane freeway.

Visual resource impacts are greater for Key Views 2C and 2D along with 2E and 2F, which reflect the implementation of a spread diamond interchange with roundabouts at Hart Road and realigned Gates Road. The construction area expected for these large-scale structures is immense, stretching nearly a mile long and a third of a mile wide for each. The interchange at Hart Road would have a bridge height of 22 feet and 27 feet at Gates Road. The height and size of these nontypical facilities would visually intrude into this existing region and would be highly noticeable.

Build Alternatives 3 and 4

Build Alternatives 3 and 4 are within the existing State Route 132 alignment Visual Assessment Unit. Build Alternative 3 proposes a new east/west, access-controlled expressway alignment on the north side of the existing State Route 132 (Maze Boulevard) roadway. Build Alternatives 3 and 4 would connect to the existing State Route 132/Maze Boulevard on the west end of the project and the new State Route 132 West freeway/expressway on the east end. Signalized intersections are proposed at North Dakota Avenue/State Route 132 West freeway/expressway, Maze Boulevard/South Dakota Avenue, Hart Road, and the realigned Gates Road/Paradise Road intersection. For Build Alternative 3, the existing State Route 132 (Maze Boulevard) roadway would become a frontage road to the south. For Build Alternative 4, the existing State Route 132 (Maze Boulevard) roadway would become a frontage road to the north with the new alignment being constructed on the south side of the existing State Route 132 (Maze Boulevard) roadway.

Build Alternatives 3 and 4 would have a moderately low level of impact on existing visual resources because views would slightly degrade. These Build Alternatives, while common to this region, add an increased urban component to this specific location by means of a larger roadway footprint and additional roadway accessories. Some farmland would be removed to make way for the expanded roadway but not to the extent of visual detriment.

Impact

As discussed in the Visual/Aesthetics section in Chapter 2, Section 2.1.9 and as discussed above, the proposed project would degrade the existing visual character or quality of public views of the project site and its surroundings with urban structures and facilities such as overcrossings and roundabouts. These are urban elements and are not typical to the rural agricultural region. Overall, Build Alternatives 1 and 2 would have moderately high to high impact as they substantially change the visual character and quality of public views and Build Alternatives 3 and 4 would have a moderately low level of impact on existing visual resources because the view would only slightly degrade.

Avoidance, minimization and mitigation measures have been proposed in Section 2.1.9. These will be designed and implemented with concurrence of the District Landscape Architect but will not fully mitigate the impacts associated with the new alignments proposed on the rural landscape. The inclusion of aesthetic features in the project design can help generate public acceptance of the project, however, they can never fully mask the presence of the new structures and new alignments throughout the rural landscape.

Therefore, the impacts discussed here are significant and unavoidable because they cannot be alleviated without imposing an alternative design. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in the county. Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. In response to the region's increasing traffic volumes and worsening traffic congestion, the inefficiencies related to the movement of goods and services, and the increasingly constrained interregional circulation on existing State Route 132, Caltrans and partners propose the construction of the State Route 132 Dakota Avenue to Gates Road project.

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

Less Than Significant with Mitigation Incorporated—The project occurs west of the City of Modesto. The landscape is characterized by flat land dominated by ranches and agricultural lands. The land use within the proposed corridor is mostly rural agricultural, but also includes areas of suburban residences and commercial properties. The area is generally flat and altered only with small changes including canals and drainage features to

accommodate agriculture. The existing land cover is highly altered due to the heavy agricultural use. Views from the road are generally limited to directly adjacent agricultural land and residences. The existing sources of light and glare within the project limits come from residences and commercial establishments along existing Route 132 (Maze Boulevard).

No-Build Alternative

Under the No-Build Alternative, because no construction activities would occur, new sources of light or glare would not be introduced into the project area.

Build Alternatives

The four Build Alternatives consist of a new expressway alignment (Build Alternative 1) and new freeway alignment (Build Alternative 2) through existing farmland south of Kansas Avenue. Build Alternative 3 is proposed to be positioned on the north of the existing State Route 132 (Maze Boulevard) corridor alignment. Build Alternative 4 is proposed to be positioned south of the existing State Route 132 (Maze Boulevard) corridor alignment. Each of these east/west alternatives are proposed with two travel lanes in each direct.

New roadway lighting is expected for each Build Alternative. As discussed in Section 2.1.9, the project's Build Alternatives would bring in new highway lighting elements at proposed bridge overcrossings, roundabout facilities, freeway ramps, new signalized intersections and signals at frontage road intersections. Lighting would include but would not be limited to streetlights, signal lights, traffic beacons, and flashing stop lights. This lighting is expected to produce nighttime glare and reduce night sky visibility for nearby highway neighbors.

Several highway neighbors would have direct foreground views to these facilities and some with direct middle-distance views.

Temporary lighting during construction could affect sensitive receptors due to excessive brightness and additional light pollution.

Therefore, the impacts for all Build Alternatives is significant here.

Mitigation Measures

Implementation of mitigation measures VR-1, VR-3 and VR-12 as defined in Section 2.1.9 would reduce the lighting impacts to Less Than Significant by shielding new light and glare from adjacent neighbors and providing a similar level of light intrusion as seen currently along existing State Route 132 (Maze Boulevard). Use of lights with shields and landscape planting can also help minimize glare from lighting. Trees would screen views to the roadway facility,

reducing or eliminating direct visual impairment while restoring the rural nature of the project area.

The potential for temporary impacts due to construction lighting will be minimized with implementation of the proposed mitigation measures VR-1, VR-3 and VR-12, which would require the review of construction lighting types, plans, and placement to minimize light and glare impacts to surrounding sensitive receptors during construction.

Impact

Although the Build Alternatives result in significant impacts, such impacts would be reduced to less than significant with the mitigation measures discussed above.

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for Agriculture and Forest Resources

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

Would the project:

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

Significant and Unavoidable Impact—

No-Build Alternative

Under the No-Build Alternative, no farmland acquisition or conversion would occur; however, the No-Build Alternative does not meet the purpose and need of the project.

Build Alternatives

Implementation of the proposed project alternatives would result in the conversion of Prime and Unique Farmland, Farmland of Statewide and Local Importance, ag conservation easements, and parcels enrolled in the Williamson Act Program.

As discussed in Section 2.1.3, the project area includes prime farmland and farmland of statewide importance. Construction of all four Build Alternatives would directly affect between 282 to 446 acres of designated farmland, resulting in an incremental loss of this resource by covering it permanently with highway pavement and converting ag land to State highway right of way.

Due to the conversion of between 282 to 446 acres of designated farmland, the project Build Alternatives would result in significant impacts to agricultural resources.

Mitigation Measures

The project has been designed to be consistent with state, regional, and local plans and programs to the extent feasible. During final design, effort would be made to further avoid, minimize and/or mitigate construction and operational impacts to existing farmland and be consistent with Stanislaus County policies.

Measures have been proposed to offset and/or decrease the project's permanent and temporary effects on agricultural resources and are discussed in the Cumulative Impact Section 2.4. Implementing measures FARM-1, FARM-2, and FARM-3 (Section 2.1.3 Farmland) would reduce farmland impacts and compensate for damage to crops resulting from construction activities.

Proposed minimization measures to be implemented by Stanislaus County:

FARM 1: Conversion of prime and unique farmland to non-farmland uses will be mitigated by preserving an equal amount of agricultural land within the County. This would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural land within Stanislaus County. This will be negotiated during the Design phase of the project.

FARM 2: Where parcels are bisected by a segment of the proposed project, but enough usable land remains on either side of the highway to be cultivated, then access for livestock, machinery, and/or drainage shall be built where reasonable and feasible to provide access to both portions of the property so that the land is still viable for farming operations.

FARM 3: During the project's final design phase, Caltrans would coordinate with property owners and agricultural operators to incorporate design features to maintain access and operation.

FARM 4: The contractor would reconstruct irrigation ditches and install irrigation pipelines damaged during construction.

FARM 5: The contractor would reimburse any damage from construction-related activities that result in the loss of crops.

Impacts

While the project will mitigate to the extent feasible for impacts to farmland, the project will still be removing large quantities of farmland from the existing community, including potentially unavoidable impacts to Williamson Act farmlands. Therefore, even with mitigation measures, there would be a significant and unavoidable impact to farmland. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in the county. Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. In response to the region's increasing traffic volumes and worsening traffic congestion, the inefficiencies related to the movement of goods and services, and the increasingly constrained interregional circulation on existing State Route 132, Caltrans and partners propose the construction of the State Route 132 Dakota Avenue to Gates Road project.

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

Significant and Unavoidable Impact—

No-Build Alternative

Under the No-Build Alternative conditions, no farmland acquisition or conversion would occur; however, the No-Build Alternative does not meet the purpose and need of the project.

Build Alternatives

All four project Build Alternatives would convert currently zoned agricultural land use into land use for transportation, including Williamson Act properties.

Build Alternative 1 will impact 32 parcels. Of those, 29 of the 32 are Williamson Act properties. This Build Alternative will require acquisition of 97 acres of Williamson Act land.

Build Alternative 2 will impact 33 parcels. Of those, 27 of the 33 parcels are Williamson Act properties. This Build Alternative will require acquisition of 154 acres of Williamson Act land.

Build Alternative 3 will impact 52 parcels. Of those, 31 of the 52 parcels are Williamson Act properties. This Build Alternative will require acquisition of 136 acres of Williamson Act land.

Build Alternative 4 will impact 23 parcels. This Build Alternative will require acquisition of 145 acres of Williamson Act land.

Therefore, this project—under all Build Alternatives—will result in significant impacts due to the cancelation of multiple Williamson Act contracts.

Mitigation Measures

Mitigation measures would be used to offset and/or decrease the project's permanent and temporary effects on agricultural resources, as discussed in Chapter 2, Section 2.1.3 Farmland.

While some impacted Williamson Act properties may stay enrolled in the Williamson Act program, there are no feasible avoidance, minimization, mitigation, or design measures that would diminish potential impacts on Williamson Act-enrolled lands to less than significant. The project will still remove large quantities of farmland (including those enrolled in the Williamson Act program) from the existing community. Once acquired for the project, most Williamson Act properties will be permanently removed from the program.

Impacts

Therefore, even with mitigation, there would be a significant and unavoidable impact to farmland. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in the county. Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. In response to the region's increasing traffic volumes and worsening traffic congestion, the inefficiencies

related to the movement of goods and services, and the increasingly constrained interregional circulation on existing State Route 132, Caltrans and partners propose the construction of the State Route 132 Dakota Avenue to Gates Road project.

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

No Impact—There are no forest or timberlands within the project limits.

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

No Impact—There are no forest land within the project limits.

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?

Significant and Unavoidable Impact—

No-Build Alternative

The No-Build Alternative would not include any roadway improvements; therefore, the proposed project benefits of traffic alleviation and enhancement of the local circulation network would not occur. However, the No-Build Alternative would not fulfill the project's purpose or need.

Build Alternatives

As discussed above in this section, the Build Alternatives will all have an impact on Farmland. Also, the Project study area does contain several agricultural conservation easements, as demonstrated in Figure 2-1 from the Caltrans Division of Environmental Geographic Information System Library. The National Conservation Easement Database defines a conservation easement as a voluntary, legal agreement that permanently limits uses of the land to protect its conservation values.

The San Joaquin River National Wildlife Refuge is also located adjacent to the western boundary of the project limits and is bordered to the east by Gates Road. The proposed Build Alternatives would not impact the San Joaquin River National Wildlife Refuge because project improvements are confined to the state right-of-way west of Gates Road. The San Joaquin River National Wildlife Refuge does not extend east of Gates Road, and therefore will not be impacted by project alternatives proposed on new highway right of way east of Gates Road.

There are two California Farmland Trust agricultural easements within the project limits that will be impacted by all Build Alternatives. First, the Menghetti Farm encumbered by an agricultural conservation easement (as recorded in 2009 with the Stanislaus County Recorder's Office) (hereinafter, the "Menghetti Conservation Easement"). It is located on the north side of Maze Boulevard, at the northwest corner of Maze Boulevard and Stone Avenue. The property encumbered by the Menghetti Conservation Easement totals about 156 acres.

Second, the Ulm Farm is encumbered by an agricultural conservation easement (as recorded in 2011 with the Stanislaus County Recorder's Office) (hereinafter, the "Ulm Conservation Easement").It is located on the south side of Maze Boulevard, at the southeast corner of Maze Boulevard and Texas Road. The property encumbered by the Ulm Conservation Easement totals about 151 acres.

In addition to the Farmland impacts discussed earlier in this section, all Build Alternatives will also result in conversion of portions of land encumbered by the Ulm Conservation Easement and/or the Menghetti Conservation Easement to public highway right of way.

Build Alternatives 1 and 2

Build Alternatives 1 and 2 run alongside Kansas Avenue as shown in Figure 1-5. The proposed Build Alternatives would involve the construction of a four-lane divided expressway/freeway on a new alignment north of existing State Route 132 (Maze Boulevard). Portions of local roads would be realigned, and/or intersections would be improved to accommodate the new alignment.

Alternative 1 and 2 will permanently impact approximately 20.33 acres (13 percent) of the property encumbered by the Menghetti Conservation Easement. Alternatives 1 and 2 will avoid the Ulm property. Temporary impacts in the form of temporary construction easements needed for construction would total 2.61 acres on the Menghetti property.

Build Alternatives 3 and 4

Build Alternatives 3 and 4 would involve the construction of a four-lane controlled access expressway along the existing State Route 132 (Maze Boulevard) alignment. Build Alternative 3 would be shifted to the north of existing State Route 132 (Maze Boulevard), while Build Alternative 4 would be shifted to the south of existing State Route 132 (Maze Boulevard). Build Alternatives 3 and 4 would convert existing State Route 132 (Maze Boulevard) to a county frontage road.

Build Alternative 3 will permanently impact approximately 16.63 acres (11 percent) of the property encumbered by the Menghetti Conservation Easement. Build Alternative 3 will avoid impacting the Ulm property.

Temporary impacts in the form of temporary construction easements would total 1.96 acres for Alternative 3 on the Menghetti property.

Build Alternative 4 will permanently impact approximately 14.91 acres (10 percent) of the property encumbered by the Ulm Conservation Easement. Build Alternative 4 will avoid impacting the Menghetti parcel. Temporary impacts in the form of temporary construction easements would total 0.31 acres for Alternative 4 on the Ulm property.

Based on the previously discussed impacts for Farmland as well as the impacts to the Ulm and Menghetti Conservation Easements, all Build Alternatives will result in significant impacts to Farmland.

Mitigation Measures

In addition to the Farmland mitigation measures identified in prior sections, the impacts to the Ulm and Menghetti Conservation Easements will be mitigated in kind at a 1:1 ratio with the establishment of replacement conservation easements within Stanislaus County.

Impacts

Therefore, even with mitigation, there will be a significant and unavoidable impact to farmland. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in the county. Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. In response to the region's increasing traffic volumes and worsening traffic congestion, the inefficiencies related to the movement of goods and services, and the increasingly constrained interregional circulation on existing State Route 132, Caltrans and partners propose the construction of the State Route 132 Dakota Avenue to Gates Road project.

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

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

Would the project:

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

No Impact—The proposed project does not conflict with or obstruct implementation of the applicable air quality plan. Therefore, there is no impact.

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

Less Than Significant Impact—

The U.S. Environmental Protection Agency designates Stanislaus County as a nonattainment area for the federal fine particulate matter 2.5 standards. Because the project is in a designated nonattainment area for the federal fine particulate matter 2.5 standards, a determination was made as to whether the project qualified as a project of air quality concern.

The project has undergone interagency consultation with the U.S. Environmental Protection Agency and Federal Highway Administration. This consultation was initiated on July 10, 2019. Concurrence was received from the U.S. Environmental Protection Agency on September 6, 2019, and the Federal Highway Administration on September 16, 2019. These consultations concluded that the project is not a project of air quality concern.

The project was included in the regional emissions analysis conducted by StanCOG for the conforming 2018 Regional Transportation Plan. The plan is in conformity, and therefore the individual projects contained in the plan are conforming projects and will have air quality impacts consistent with those identified in the State Implementation Plans (SIPs) for achieving the National Ambient Air Quality Standards (NAAQS).

The design concept and scope of the proposed project are consistent with the project description in the 2018 Regional Transportation Plan, 2019 Federal Transportation Improvement Program, and the “open to traffic” assumptions of the StanCOG 2018 Air Quality Conformity Analysis.

The project was included in the regional emissions analysis conducted by StanCOG for the conforming 2018 Regional Transportation Plan. The plan is in conformity, and therefore the individual projects contained in the plan are conforming projects and will have air quality impacts consistent with those identified in the State Implementation Plans for achieving the National Ambient Air Quality Standards. The project would result in a less than significant increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact—No sensitive receptors have been identified within the proposed project location.

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

Less Than Significant Impact—

No-Build Alternative

Under the No-Build Alternative, since no construction activities would occur, no impacts would occur to air quality in the project area beyond those due to the existing facility and surrounding agricultural practices.

Build Alternatives

Under all Build Alternatives, there will be air quality impacts due to construction.

Short-Term Effects (Construction Emissions)

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth-moving activities are sources of construction dust emissions, but traffic and general disturbances of soil surfaces, as seen with agricultural practices, also generate substantial dust emissions. Also, dust generation depends on soil type and soil moisture. Construction induced dust would be minimized through compliance with Caltrans' Standard Specifications Section 14-9.03 Dust Control, Section 7-1.02 Emissions Reduction and Section 18 Dust Palliative by the construction contractor. Temporary construction activities will generate fugitive dust and air pollutants from the operation of construction equipment.

Construction activities would not last more than 5 years at any particular location. During construction, the project would generate short-term air pollutants. Emissions from construction equipment are expected and would contain carbon monoxide, nitrogen oxides, volatile organic compounds, directly emitted particulate matter, and toxic air contaminants such as diesel exhaust particulate matter. However, 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.

Project construction is expected to generate about 5,098 tons of carbon dioxide during the 300 working days (less than the 264 working days per 1 year) duration.

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term impacts. These impacts will be less than significant.

Standard Minimization Measures

For all Build Alternatives, Caltrans will implement the minimization measures discussed in section 2.2.5.

Also, 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 to less than significant when compared to surround agricultural practices.

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 air pollution control rules, ordinances, and regulations and statutes that apply to work performed under the contract, including those provided in Government Code Section11017.

The amount of respirable particulate matter and Oxides of Nitrogen emissions are likely to exceed the San Joaquin Valley Air Pollution Control District’s Rule 9510/Indirect Source Review Rule. The construction contractor selected for this project will be required to comply with this rule and to submit an Air Impact Analysis to San Joaquin Valley Air Pollution Control District and pay any fees if required.

As a result, no substantial increases to air quality effects are expected as a result of the construction and operation of the project.

Impacts

With implementation of the listed standardized minimization measures identified above, project emissions impacts will be less than significant.

3.2.4 Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

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

Less Than Significant—

No-Build Alternative

Under the No-Build Alternative, since no construction activities would occur, no impacts of any kind would occur to animal species in the project area.

Build Alternatives, Threatened and Endangered Species

The proposed project area was surveyed and evaluated for the potential to support threatened and endangered plant and wildlife species. After analysis of the threatened and endangered species' habitat requirements and completion of floristic and wildlife field reconnaissance surveys within the project limits, it was determined that vernal pool fairy shrimp *(Branchinecta lynchi),* Swainson's hawks *(Buteo swainsoni),* tricolored blackbirds (*Agelaius tricolor*), and California tiger salamanders *(Ambystoma californiense)* have the potential to occur near or in the project area.

Build Alternatives, Vernal Pool Fairy Shrimp

Although critical habitat for the vernal pool fairy shrimp is present within the Biological Study Area, the habitat is not within the project footprint where direct and indirect impacts are expected. Critical Habitat is not present within the project footprint; therefore, no avoidance and minimization measures are proposed for this species Thus, there will be no impacts to vernal pool fairy shrimp or Critical Habitat as a result of the Build Alternatives.

Build Alternatives, Tricolored Blackbird

No direct impacts on tricolored blackbirds are expected to result from the project because no tricolored blackbirds or nests were seen within the Biological Study Area.

However, there is suitable nesting habitat close to the project area (not within the project footprint) where there is the potential for a tricolored blackbird to be nesting in the future next to active construction near Build Alternatives 3 and 4.

With the implementation of avoidance and minimization measures stated in Section 2.3, no impacts are anticipated effect the tricolored blackbird.

Build Alternatives, Swanson's Hawk

Although no active Swainson's hawk nests were seen within the project footprint, the presence of suitable nesting and foraging habitat is present throughout the project limits. Two active Swainson's hawk nests were seen outside of the Biological Study Area, and two Swainson's hawks were seen foraging within the Biological Study Area.

Therefore, there is a likelihood that active nests may be detected within or near the project footprint during construction. Thus, Caltrans will implement no-work buffers during the Swainson's Hawk nesting season (February 1 to September 30).

Also, the proposed project would remove marginally suitable foraging habitat for Swainson's hawk under all Build Alternatives. (See Table 2.40). The following describes such impacts under each Build Alternative:

- Build Alternative 1 would permanently impact 24.08 acres.
- Build Alternative 2 would permanently impact 94.35 acres,
- Build Alternative 3 would permanently impact 56.18 acres,
- Build Alternative 4 would permanently impact 64.53 acres,

Additionally, the proposed project would have temporary impacts on Swainson's hawk foraging habitat (see Table 2:41) as follows:

- Build Alternative 1 would temporarily impact 2.09 acres,
- Build Alternative 2 would temporarily impact 0 acres,
- Build Alternative 3 would temporarily impact 7.73 acres,
- Build Alternative 4 would temporarily impact 15.22 acres.

Implementation of minimization measures TE-7 through TE-10 as specified in Section 2.3.5 would reduce project-related impacts to the state-endangered Swainson's hawk to less than significant.

Build Alternatives, California Tiger Salamander

No suitable habitat is present within the project study area that would be impacted by the project alternatives. However, the project may affect, but is not likely to adversely affect, the California tiger salamander under all four Build Alternatives.

No direct or indirect impacts on the California Tiger Salamander, their breeding, or their habitats are anticipated with implementation of minimization measures TE-2 through TE-6 as specified in Section 2.3.5.

Consequently, no compensatory mitigation is proposed. Implementation of these avoidance and minimization measures prior to and during construction would reduce potential effects to the federally threatened California tiger salamander to less than significant

Build Alternatives, Special Status Species

Special-status species known to occur in the project area are the Modesto song sparrow (*Melospiza melodia mailliardi*), and burrowing owls (Athene *cunicularia*).

Build Alternatives, Modesto Song Sparrow

No Modesto song sparrows or nests were identified within the Biological Study Area; therefore, no direct impacts on individual birds or suitable nesting habitat are anticipated during construction of the project.

There is potentially suitable nesting habitat present nearby. However, it is not expected to be impacted by the project due to it being outside of the project footprint.

No permanent or temporary impacts are expected for Modesto song sparrows or their nesting habitat from any of the four proposed Build Alternatives.

Although permanent or temporary impacts are not anticipated, there is a potential for Modesto song sparrows to nest next to active construction of the project.

As specified in avoidance and minimization measure AS-4, described in Section 2.3.4, if an active Modesto song sparrow nest is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing. If avoidance is not possible, Caltrans would propose additional minimization measures in coordination with the U.S. Fish and Wildlife Service. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction of the project as specified in measure TE-10, summarized in Section 2.3.5. Implementation of these avoidance and minimization measures prior to and during construction would reduce any potential effects to the Modesto song sparrow to less than significant.

Build Alternatives, Burrowing Owl

A burrowing owl assessment was conducted from April 2019 to July 2019. These assessments determined there is potential habitat in the western portion of the Biological Study Area along existing State Route 132 (Maze Boulevard) within the San Joaquin River National Wildlife Refuge.

Within the project footprint of all Build Alternatives, the agricultural lands adjacent to the San Joaquin River National Wildlife Refuge provide foraging habitat. as This foraging habitat is low quality because, due to routine agricultural practices, it lacks small mammals and, due to regular crop

rotations and pest management, the land provides little opportunity for foraging.

No direct impacts on burrowing owls are anticipated as a result of the project; however, potential indirect impacts to the species could result from the presence of active construction near suitable burrowing owl habitat under all Build Alternatives.

Implementation of avoidance and minimization measures AS-1 and AS-2 as specified in Section 2.3.4 would reduce potential effects to the Burrowing Owl to less than significant.

Miminimization Measures

For all Build Alternatives, Caltrans will implement the minimization measures as identified above in the discussion of each species and in Section 2.3.

Impacts

With implementation of the minimization measures identified above, project impacts to these species will be less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant—

No-Build Alternative

Under the No-Build Alternative, no impact to natural communities are expected because no construction would occur.

Build Alternatives

The following natural communities were identified within the Biological Study Area: annual grassland and upland riparian.

Build Alternatives, Annual Grassland

Annual grasslands occur sporadically throughout the survey area. Non-native annual grasses dominate them, such as soft chess *(Bromus hordeaceus)*, common wild oat *(Avena fatua),* and Mediterranean barley *(Hordeum marinum ssp. gussoneanum).* Annual herbaceous flowers occur within the grasslands and include weedy species such as cutleaf geranium *(Geranium dissectum),* hairy leaved sunflower *(Helianthus hirsutus),* and annual yellow sweetclover *(Melilotus indicus).*

Depending on the alternative, there will be some areas of annual grassland removed. As shown in Section 2.3.1, Build Alternatives 3 and 4 would permanently impact 0.60 acre of annual grassland, while Build Alternatives 1 and 2 would have no impacts. The permanent impacts of Build Alternatives 3 and 4 would occur at the intersection of State Route 132 (Maze Boulevard) and Hart Road, as shown in Figure 2-31. There would not be any temporary impacts to annual grassland under any Build Alternative.

Such impacts would be less than significant due to the size and context of the potential impact in relation to the entire project limits.

Build Alternatives, Upland Riparian

Upland riparian habitat usually occurs along the banks of seasonal ditches and is considered upland because it lacks the hydrological characteristics of a wetland.

Upland riparian habitat was found along the banks of one ditch on the northern side of existing State Route 132 (Maze Boulevard) in the westernmost portion of the Biological Study Area. This natural community is composed of riparian plants such as willows *(Salix spp.)* and California blackberries *(Rubus ursinus).*

For all Build Alternatives, impacts to upland riparian habitat are not anticipated. However, if such impacts occur, they can be avoided. Best Management Practices will be in place under all Build Alternatives to establish a spill prevention plan with measures to minimize the risk of fluids or other materials used during construction such as oils, transmission and hydraulic fluids, cement, and fuel from entering upland habitat.

Impacts

Implementation of avoidance and minimization measures WL-1 through WL-2, as depicted in Section 2.3.2, would protect natural communities for all Build Alternatives and reduce impacts to annual grassland and upland riparian communities to less than significant.

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

Less Than Significant with Mitigation Incorporated—

No-Build Alternative

Under the No-Build Alternative, no impacts to waters of the U.S. or State are expected because no construction would occur and the existing condition of water features in the project area would remain unchanged.

Build Alternatives, Seasonal Wetland

There were two seasonal wetlands identified within the Biological Study Area which total about 0.17 acre. All Build Alternatives would have a permanent impact to a seasonal wetland within the bed and bank of a ditch. Additionally, Build Alternatives 3 and 4 would impact the seasonal wetland that is behind a business near the intersection of Hart Road and existing State Route 132 (Maze Boulevard), as shown in Figure 2-32. The impacts are as follows (see also Section 2.3.2):

- Alternatives 1 and 2 would permanently impact 0.053 acre of seasonal wetland.
- Alternatives 3 and 4 would permanently impact 0.166 acre of seasonal wetland.

The project's impacts to seasonal wetlands are minuscule when compared to the available wetland resources to the west of the project limits. Even though minor in size, any permanent impact to wetlands are considered significant and must be mitigated accordingly.

Mitigation Measures

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 U.S. Code 1344), is the primary law regulating wetlands and surface waters. At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife. Caltrans will obtain the following permits for impacts to wetlands and other waters of the U.S. prior to the start of construction:

- An individual 404 permit from the Army Corps of Engineers
- A 401 permit from the Regional Water Quality Control Board
- A 1602 permit from California fish and Wildlife

In addition to the conditions specified in the listed permits minimizing wetland impacts, Caltrans will implement avoidance and minimization measures WL-1 through WL-6 and mitigation measure WL-7 as summarized in Section 2.3.2 to reduce the project's impact to wetland resources to less than significant. WL-7 calls for the replacement of wetlands resources at a minimum 1:1 ratio, thus replacing the total impacted wetland resource in kind.

Impacts

With implementation of the avoidance, minimization, and mitigation measures identified above, project impacts are reduced to less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact—A special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction. There are no fish passages within the Biological Study Area, therefore, there would be no impact to fish passages. The proposed project has been designed to avoid all work within the San Joaquin River National Wildlife Refuge, therefore, no direct or indirect impacts to the individual species, their breeding, or habitats are expected.

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

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

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

No Impact—This project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

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

Less than Significant Impact—

No-Build Alternative

Under the No-Build Alternative, because no construction activities would occur, no effects of any kind would occur to historic resources within the project area.

Build Alternatives, Historic Architectural Resources within the Project Study Area

There are historic properties protected by Section 4(f) of the Department of Transportation Act of 1966 within the project vicinity which are summarized in Section 3.2.5. However, this project will not “use” those properties as defined

by Section 4(f). Please see Appendix A under the heading “Resources Evaluated Relative to the Requirements of Section 4(f)” for additional details.

The Butler Ditch is the only property within the proposed project study area that is a historic property protected by Section 4(f) of the Department of Transportation Act of 1966. The Butler Ditch was found eligible as a contributor to the Modesto Irrigation District at local significance for its involvement in agriculture in Stanislaus County.

The Build Alternatives would impact Butler Ditch as follows:

- Build Alternative 1 includes two new at-grade crossings at post miles R6.26 and R7.82. A pipeline or a box culvert would be built on both crossings. The crossing at post mile R6.26 would be about 250 feet long; the crossing at post mile R7.82 would be about 300 feet long. Less than 0.025 percent of Butler Ditch and less than 0.0005 percent of the Modesto Irrigation District would be enclosed within a culvert.
- Build Alternative 2 includes an elevated crossing on new alignment at post mile R6.74 and a new at-grade crossing on new alignment at post mile R7.82. A new pipeline or box culvert would be built on both crossings. About 2,300 feet of an open canal would be piped or placed through a box culvert at post mile R6.74. Another 300 feet of an open canal would be piped or placed through a box culvert at post mile R7.82. Exactly 0.11 percent of Butler Ditch and 0.0025 percent of the Modesto Irrigation District would be enclosed within a culvert.
- Build Alternatives 3 and 4 would have no impact on Butler Ditch because they do not have proposed crossings over the canal. The Modesto Irrigation District system and its contributing features would not be impacted by Alternatives 3 and 4.

The new crossings Build Alternatives 1 and 2 would physically change the Butler Ditch, which is a contributing feature of the Modesto Irrigation District. The new crossing over Butler Ditch would also diminish the integrity of the setting and feeling by introducing audible and visual elements.

However, despite these impacts, neither Alternative 1 nor 2 would diminish the historic property’s integrity of design, workmanship, materials, location, and association. Also, other segments of the waterways outside the project area would keep their integrity of setting and convey the agricultural feeling of the waterway during the period of significance.

Diminishing the integrity of the setting at the new crossings would not be enough to cause an adverse effect to the Modesto Irrigation District; the district would keep enough integrity necessary to convey its historic significance. Furthermore, the project is not expected to adversely affect the Modesto Irrigation District under Section 106 of the National Historic Preservation Act.

Implementation of the following minimization measures would reduce any impacts caused by construction to the Butler Ditch:

CR-1: A principal architectural historian would review construction plans as developed and monitor construction activities associated with the Modesto Irrigation District.

CR-2: The State Historic Preservation Officer would be notified immediately if any significant changes are made to the construction plans or during construction activities that have the potential to adversely impact the Modesto Irrigation District or any of its contributors

In May 2020, Caltrans requested concurrence from the State Historic Preservation Officer for a No Adverse Effect without Standard Conditions determination on the Modesto Irrigation District for both Build Alternatives 1 and 2. On June 26, 2020, Caltrans received a letter of concurrence from the State Historic Preservation Officer stating that the proposed project would not result in an Adverse Effect relative to the Modesto Irrigation District (Butler Ditch). Letter of concurrence from the State Historic Preservation Officer can be found in Appendix G.

Impact

Based on the analysis above, impacts to the Butler Ditch are less than significant.

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

No Impact—There are no previously known prehistoric or historic archaeological resources within the project area. The proposed project is not expected to cause a substantial adverse change in the significance of an archaeological resource.

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

No Impact—Human remains are not expected to be disturbed because of the proposed project. If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the county coroner should be contacted.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

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

No Impact—Per Caltrans' Best Management Practices, newer or well-maintained equipment that is more energy efficient would be used during construction. The amount of energy used by construction during the proposed project would be negligible.

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

No Impact—The proposed project does not conflict with any of the state or local plans for renewable energy or energy efficiency.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

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

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

No Impact—The project area is not in an earthquake fault zone, according to the most recent Alquist-Priolo Earthquake Fault Zoning Map.

ii) Strong seismic ground shaking?

No Impact—According to the Earthquake Shaking Potential for California Map from the California Department of Conservation, the project area is distant from known active faults and experiences lower levels of shaking less frequently. Therefore, Strong seismic ground shaking is not anticipated within the project limits.

iii) Seismic-related ground failure, including liquefaction?

No Impact—Seismic activity in Stanislaus County is low, therefore, seismic-related ground failure and liquefaction risk are also low.

iv) Landslides?

No impact—The topography of the project area is relatively flat, eliminating the risk of landslides.

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

No Impact—The proposed project is in an area predominantly composed of sandy soil that is susceptible to erosion. Land disturbance activities, such as grading and excavation during construction, will loosen the soil and may remove the protective cover of vegetation, reducing the natural soil resistance to rainfall impact erosion. The project design would include permanent erosion control elements to ensure that stormwater runoff does not cause soil erosion (see Section 2.2.2)

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

No Impact—The project is not on a geologic unit or soil that is unstable, nor would it become unstable as a result of the project.

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

No Impact—A fraction of the project area contains expansive soil; however, construction would occur in those areas with imported borrow of engineered fill material to build the project. Therefore, the project will not result in a risk to life or property.

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

No Impact—Most of the soils in the project area are capable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. A wastewater disposal system is not needed for this project.

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

Less Than Significant with Mitigation Incorporated—

No-Build Alternative

The No-Build Alternative will not result in the construction of any of the proposed improvements and, therefore, will not impact paleontological resources because no construction excavation or grading would occur.

Build Alternatives

The San Joaquin Valley is part of the Great Valley Geomorphic Province, which is bound on the east by the Sierra Nevada Mountains and to the west

by the Coast Ranges. The subsurface of the Great Valley Geomorphic Province is characterized by a thick sequence of unconsolidated to semi-consolidated sediments. Sediments underlying the proposed project area consist of older alluvium and dissected fan deposits attributed to the Pleistocene-age Modesto Formation. The fluvial and alluvial deposits underlying the project area consist of Pleistocene Age sediments, which have been documented to contain fossilized organisms that provide valuable information, such as the relative age of fossils, information on evolutionary trends, and evidence of changing paleoenvironments.

The Modesto Formation, which underlies all Build Alternatives, would be impacted due to ground disturbance during general construction activities such as excavation and construction of structural foundations and drainage basins for the proposed project. This work may result in the identification of or significant impact to highly sensitive paleontological resources.

Construction activities, including grading, excavation, and other subsurface ground disturbance, reaching and/or exceeding 3 feet in depth within the project area, have the potential to impact scientifically significant nonrenewable fossil resources.

The scope of work for each of the four Build Alternatives includes the construction of conveyance and ditch systems, which are estimated to require excavation up to 3 to 5 feet deep and large basins up to a maximum of 15 feet deep. Build Alternatives 1 and 2 would have more soil excavation, 250,000 cubic yards and 300,000 cubic yards respectively, than Build Alternatives 3 and 4 which estimates 140,000 cubic yards excavated individually. Because Build Alternatives 1 and 2 are on a new alignment, they are more likely to encroach into undisturbed portions of the Modesto Formation.

Mitigation Measures

Paleontological mitigation monitoring would be required during construction to ensure that potential significant impacts are reduced to a less than significant level. Any increased number of cubic yards of soil excavation would likely increase impacts on the Modesto Formation. Applicable excavations are defined as ground-disturbing activities that extend into previously undisturbed portions of the Modesto Formation.

Avoidance and minimization measures are not feasible due to the large areal extent of the Modesto Formation beneath the project limits. Based on this mitigation measures PR-1 and PR-1, as described in Section 2.2.3, would be implemented to reduce and mitigate impacts to sensitive paleontological resources discovered and reduce the impact to less than significant.

Impacts

Based on the analysis above, potential significant impacts are less than significant with mitigation incorporated.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

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

Significant and Unavoidable Impact—The proposed project would result in an increase in greenhouse gas emissions under all four Build Alternatives and during construction.

Caltrans Emission Factors version 2017 model and traffic data from Caltrans Traffic Forecasting and Operations Analysis Report 2019 were used to estimate annual carbon dioxide emissions for existing (2018) conditions, construction year (2026) conditions, and design year (2046) conditions.

Opening Year (2026), Carbon Dioxide Emissions

In the open-to-traffic year (2026), the No-Build carbon dioxide emissions would be 11,462.10 tons per year compared to 12,772.81 tons per year from the Existing/Baseline 2018, which is 1,310.71 tons per year less carbon dioxide emissions per year. However, without the project, operational efficiency would not improve and the potential for vehicular accidents in the project area may not be acceptable.

For Build Alternative 1 carbon dioxide emission in the construction year (2026) would be 11,440.20 tons per year which is 1,331.98 tons per year less than the Existing/Baseline.

For Build Alternatives 2, 3 and 4, the carbon dioxide emissions (2026) would be 14,881.41, 16,745.11, and 17,067.40 tons per year, respectively. Build Alternatives 2, 3, and 4 would respectively produce 2,108.6, 3,972.3, and 4,294.59 tons per year more carbon dioxide emissions per year than the Existing/Baseline.

Opening Year (2026), Vehicle Miles Traveled

In the open-to-traffic year (2026), the No-Build Vehicle Miles Traveled would be 188,882 compared to 155,233 for the Existing/Baseline in 2018, which is 33,649 more Vehicle Miles Traveled than existing baseline.

For Build Alternative 1 Vehicle Miles Traveled in the construction year of 2026 would average 154,542 per year which is 691 Vehicle Miles Traveled less than the existing/baseline.

For Build Alternatives 2, 3 and 4, the Vehicle Miles Traveled would average 192,393, 224,772, and 224,772 Vehicle Miles Traveled per year, respectively. Build Alternative 2, 3 and 4 would respectively produce 37,160, 69,539, and 69,539 more Vehicle Miles Traveled per year than the Existing/Baseline.

Design Year (2046), Carbon Dioxide Emissions

In the Design year (2046), the No-Build carbon dioxide emissions would be 12,425.33 tons per year compared to 12,772.82 tons per year for the Existing/Baseline, which is 347.49 tons per year less carbon dioxide emissions per year. For Build Alternative 1 carbon dioxide emission in the Design year (2046) would be 13,372.87 tons per year, which is 600.69 tons per year more than the Existing/Baseline.

For Build Alternatives 2, 3 and 4, the carbon dioxide emissions would be 15,925.32, 18,577.04, and 18,997.16 tons per year, respectively. These Build Alternatives would respectively produce 3,152.51, 5,804.86, and 6,224.98 tons per year more carbon dioxide emissions than the Existing/Baseline.

Design Year (2046), Vehicle Miles Traveled

In the Design year (2046), the No-Build Vehicle Miles Traveled would be 220,138 compared to 155,233 for the Existing/Baseline in 2018, which is 64,905 more Vehicle Miles Traveled than the existing baseline.

For Build Alternative 1 Vehicle Miles Traveled in the Design year of 2046 would average 188,102 per year which is 32,869 Vehicle Miles Traveled more than the existing/baseline.

For Build Alternatives 2, 3 and 4, the Vehicle Miles Traveled would average 246,065, 283,450, and 283,450 Vehicle Miles Traveled per year, respectively. Build Alternative 2, 3 and 4 would respectively produce 90,832, 128,217, and 128,217 more Vehicle Miles Traveled per year than the Existing/Baseline.

As shown in Table 3.2 above, under the design year (2046), all four Build Alternatives would result in a decrease in carbon dioxide emissions compared to both existing/baseline (2018) and the No-Build (No-Action) Alternative. The proposed project would increase greenhouse gas emissions due to projected increases in population and annual Vehicle Miles Traveled. Building the project would, however, improve traffic circulation and operational efficiency.

The proposed project would increase greenhouse gas emissions due to projected increases in population and annual Vehicle Miles Traveled. The traffic in the general project vicinity, however, will operate at a higher Level of Service and operate with more efficiency than currently possible. Under design year 2046, all Build Alternatives would reduce congestion by reducing vehicle hours of delay for both morning and evening peak hours. Average speed would improve to between 42 miles per hour to 52 miles per hour

within the project limits due to the more efficient operation of the new roadway.

Emission from design year for all Build Alternatives are higher than existing, therefore the proposed project alternatives have a significant impact to Climate Change as currently defined. Increases in population and motorists over time utilizing the roadway infrastructure within Stanislaus County is a reality that cannot be fully mitigated nor avoided resulting in a significant and unavoidable impact to Greenhouse Gas emissions.

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

- Limit idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment.
- Construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- 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.
- Provide Construction Environmental Training: Supplement existing training with information regarding methods to reduce greenhouse gas emissions related to construction.
- Maximize use of recycled materials (e.g., tire rubber).
- Balance earthwork: Reduce the need for transport of earthen materials by balancing cut and fill quantities.
- Reduce the need for electric lighting by using ultra-reflective sign materials that are illuminated by headlights.

Use measures that consider incorporation of Best Available Control Technology during design, construction and operation of projects to minimize greenhouse gas emissions, including but not limited to:

- Use energy- and fuel-efficient vehicles and equipment.
- Deploy zero and/or near-zero emission technologies as defined by the California Air Resources Board.
- Use lighting systems that are energy efficient, such as LED technology.
- Use cement blended with the maximum feasible amount of fly ash or other materials that reduce greenhouse gas emissions from cement production.

- Incorporate design measures to reduce greenhouse gas emissions from solid waste management through solid waste reduction, recycling and reuse.
- Protect and plant shade trees in or near construction projects.

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

No Impact—The proposed project is listed within the 2018 Regional Transportation Plan and does not conflict with applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

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

Less than Significant Impact—

No-Build Alternative

Construction will not take place under the No-Build Alternative and, therefore, there would be no hazard to the public or the environment through the routine transport use, or disposal of hazardous materials.

Build Alternatives 1 and 2

A 2020 Initial Site Assessment regulatory database search did not identify any past or existing documented hazardous waste sites. The area within the proposed alignments of Build Alternatives 1 and 2 is more rural compared to the areas around Build Alternatives 3 and 4.

These Build Alternatives are presumed to be free of aerially deposited lead because there is currently no roadway facility within the new alignments proposed.

According to the preliminary design, between Alternatives 1 and 2, about 11 single-family homes may require relocation. Although there is no record of release/spills of hazardous waste at these properties, the past and current land use of the project area is agricultural, and the soils in the area might contain pesticides and herbicides, including arsenic, as a result of past farm operations. Agriculture dominates the project area. Regular use of pesticides on crops within the Build Alternatives 1 and 2 corridors would not contribute to contamination of the soil or groundwater at high concentrations. However, an

additional study may be required in the design phase, after the preferred Build Alternative is selected.

Therefore, it is assumed that the properties along the alignments of Build Alternatives 1 and 2 will have a low risk of hazardous waste exposure based on the past and current agricultural land use.

Following avoidance and minimization measures HW-1 through HW-3 as summarized in Section 2.2.4, exposure to hazardous wastes and materials would be less than significant.

Build Alternative 3

Build Alternative 3 would be on the existing State Route 132 (Maze Boulevard) alignment but shifted to the north. Consequently, construction of Alternative 3 would displace everything within proximity of the north side of existing State Route 132.

The area is still rural, but it is more built-up than Build Alternatives 1 and 2. The existing State Route 132 (Maze Boulevard) alignment is the main route that transports commuters and commercial trucks from west to east of Modesto. From the preliminary design, the project may affect 34 single-family homes, three commercial businesses—Chevron service/gas station, truck weight scale, warehouse—and one industrial/manufacturing business. One of the four properties is on the Cortese List—313 North Gates Road—and is within the boundary of Build Alternative 3. This property is used as an airfield for crop dusters applying pesticides and herbicides. A review of My Flying Ranch Service indicates groundwater in the surrounding area may be impacted by pesticides, herbicides, and arsenic.

If construction dewatering is required, extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements. No property acquisition is planned for the parcels at 313 North Gates Road, so no impacts are expected at this location.

The metal concentrations for the soil samples taken along existing State Route 132 fall within the range of naturally occurring background levels. From the groundwater samples collected, arsenic was detected at concentrations ranging from 0.030 to 0.29 milligrams per liter. This amount of arsenic is above the Human Health Risk Assessment Note 3 Screening Levels and Regional Screening Levels. Petroleum hydrocarbons were not detected at concentrations exceeding their respective laboratory reporting limits. If construction dewatering is required during the proposed project, the extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements.

The soils were tested for Organochlorine pesticides and Organophosphates (insecticide compounds). Both compounds were found to be several orders of

magnitude less than their Human Health Risk Assessment Note 3 Screening Level and Regional Screening Level for residential and commercial/industrial land use. Based on the laboratory analysis, no special handling of excavated soil material with respect to these compounds is expected during construction. Chlorinated herbicide was detected in a soil sample; however, it was less than its Human Health Risk Assessment Note 3 Screening Level and Regional Screening Level for residential and commercial/industrial land use.

No special handling of excavated soil would be required during the construction of any Build Alternative.

Following avoidance and minimization measures HW-1 through HW-3 as summarized in Section 2.2.4, exposure to hazardous wastes and materials would be less than significant.

Build Alternative 4

Build Alternative 4 would be along the existing State Route 132 (Maze Boulevard) alignment but shifted to the south. Consequently, Build Alternative 4 would displace everything within proximity of the south side of State Route 132 (Maze Boulevard). Build Alternative 4 may impact 25 single-family homes, one duplex, 14 mobile homes, and four commercial businesses. The Chevron service/gas station and the Fisher Nut Company are within the footprint of Build Alternative 4.

According to the Draft Relocation Impact Report dated March 2020, the current use of some of these commercial businesses is unknown. According to the 2020 Initial Site Assessment, one of the four properties on the Cortese List is at 8700 Maze Boulevard, which contains 14 mobile homes. There was one permitted underground storage tank onsite with past records showing potential groundwater contaminants of concern such as gasoline and methyl tert-butyl ether.

The concentrations of hazardous materials in the soil samples evaluated fall within the range of naturally occurring background levels or did not exceed laboratory reporting limits. However, all Title 22 metals (except zinc) were detected in the groundwater samples from this location at concentrations greater than their Human Health Risk Assessment Note 3 Screening Level and Regional Screening Level. Gasoline Range Organics were detected in five of the six groundwater samples analyzed at concentrations up to 0.09 milligrams per liter. Volatile Organic Compounds were not detected in the groundwater sample collected. If construction dewatering is required during project construction, the extracted groundwater should be properly contained, treated where required, and discharged per regulatory requirements.

Following avoidance and minimization measures HW-1 through HW-3 as summarized in Section 2.2.4, exposure to hazardous wastes and materials would be less than significant.

Mitigation Measures

As discussed above, the minimization measures identified in Section 2.2.4 will be implemented.

Impacts

Based on the analysis above, with implementation of the minimization measures identified above, significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials will be less than significant.

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

Less than Significant Impact—

No-Build Alternative

The No-Build Alternative would not require any construction activities and would therefore have no chance of exposing hazardous materials into the environment. Existing hazardous materials, should they occur in the project area, would not be identified or remediated, and could cause environmental impacts in the future not related to the project.

Build Alternatives

The project area along existing roadways in all four Build Alternatives has the potential for hazardous materials in the form of aerially deposited lead. Soil generated during the construction of all four Build Alternatives would not be classified as hazardous waste under the Federal Resource Conservation and Recovery Act, since the Aerially Deposited Lead Study found that soluble lead concentrations in the soil do not exceed the regulatory threshold. On the shoulders of existing eastbound State Route 132 (Maze Boulevard), soil excavated from the surface to 3 feet deep or less would qualify as non-regulated material for unrestricted use. On the shoulders of existing westbound State Route 132 (Maze Boulevard), soil excavated from the surface to 1 foot deep or less would qualify for reuse within the Caltrans right-of-way without cover requirement or be disposed of at a Class 2 or Class 3 disposal facility.

Yellow traffic stripes are present at various locations throughout all Build Alternatives and may contain heavy metals such as lead and chromium at

concentrations above the hazardous waste thresholds established by the California Code of Regulations. Consequently, removal or disturbance of any yellow traffic striping within the project area would require the development and implementation of an appropriate Lead Compliance Plan to be implemented during construction.

Construction workers could be exposed to hazardous materials during ground-disturbing activities such as grading, demolition/replacement of structures, and/or roadbed resurfacing at any of the areas known to contain hazardous substances. Older commercial and residential structures in rural areas often have associated aboveground or belowground heating oil and/or motor vehicle fuel tanks. Septic tanks are also commonly associated with these types of structures in rural locations. If heating oil tanks, fuel tanks, or septic tanks are (or were previously) associated with the structures, there is also the potential for late discovery of unidentified conditions. Septic and fuel tanks would be addressed if discovered during property acquisition prior to construction.

Hazardous materials that may be encountered during project construction and maintenance include aerially deposited lead and pesticide residues in shallow soils and petroleum hydrocarbons in groundwater (see Section 2.2.4).

Mitigation Measures

Implementation of avoidance and minimization measures HW-1 to HW-3 would provide for investigation of potential hazardous materials in soil, groundwater, and building materials prior to construction, and for site-specific control measures to be incorporated into the final project design and construction.

Following avoidance and minimization measures HW-1 through HW-3 as summarized in Section 2.2.4 during construction would reduce the release of hazardous materials into the environment.

Impact

Based on the analysis above, with implementation of the minimization measures identified above, project impacts associated with the release of hazardous materials into the environment will be less than significant.

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

No Impact—There are no schools or proposed schools near the project area.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact—

No-Build Alternative

The No-Build Alternative would not require any construction activities and would therefore have no chance of exposing hazardous materials to the pubic or the environment.

Build Alternatives

An Initial Site Assessment conducted for the project included a review of regulatory agency records, which found one open case of a documented cleanup site. The site at 313 North Gates Road was identified as a site that might affect the project. Three closed case sites—8700 Maze Boulevard, case closed as of January 28, 2014; 8624 Maze Boulevard, case closed as of May 3, 2007; and 6943 Maze Boulevard, case closed as of August 15, 2013—were identified (see Table 2.21). These properties were identified as being on the Cortese List. Even if a site has a formal closure from the regulatory agency, contamination could still exist and would not constitute a no impact determination. One of the four properties from the Cortese List—313 North Gates Road—is within the boundary of Build Alternative 3. Another one of the four properties on the Cortese List is at 8700 Maze Boulevard, which contains 14 mobile homes and is associated with Alternative 4. Based on laboratory analysis results, no special handling of excavated soil material is required. Therefore, construction on these properties would not create a significant hazard to the public or environment and constitutes a less than significant impact.

Avoidance and Minimization

Caltrans will implement avoidance and minimization measures HW-1 through HW-3 as summarized in Section 2.2.4 and those would reduce exposure to hazardous wastes and materials for all four Build Alternatives to less than significant and would not create a significant hazard to the public or environment.

Impact

Based on the analysis above, construction on these properties would not create a significant hazard to the public or environment and constitutes a less than significant impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport,

would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact—The project area is outside the limits of the Stanislaus County airport land use compatibility planning area.

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

No Impact—The project would not interfere with an adopted emergency response plan or emergency evacuation plan. Build Alternatives 1 and 2 would be built along a new alignment not blocking use of existing State Route 132. Build Alternatives 3 and 4 would maintain access to existing State Route 132/Maze Boulevard during construction.

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

No Impact—The project is not in an area of high risk of wildland fires.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

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

No Impact—The project would not violate any water quality standards or waste discharge requirements. The surface water and groundwater quality would not be substantially degraded.

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

No Impact—New drainage inlets, ditches, and basins would be installed that would allow for groundwater conditions similar to current conditions (see Section 2.2.2).

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

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

No Impact—Land disturbance activities, such as grading and excavation during construction, would loosen the soil and could remove the protective

cover of vegetation, reducing the natural soil resistance to rainfall impact erosion. The project design would include permanent erosion control elements to ensure that stormwater runoff does not cause soil erosion or siltation to occur.

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

Less Than Significant Impact—

No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no changes to the existing drainage system. Consequently, there would be no improvements to the storm drainage system.

Build Alternatives

Within the project limits, stormwater typically drains off existing roadways, settles within shallow undefined roadside swales, and infiltrates the ground. In some isolated areas, runoff may drain into a series of rock wells under the roadway pavement. The proposed project would consist mostly of building a new highway on a new alignment, which would result in new impervious surfaces. Consequently, the additional paved areas would affect the existing flow pattern of the local watershed by increasing the amount of additional water runoff.

Build Alternatives 1 and 2 are proposed on a realignment of State Route 132, which is currently unpaved agricultural land with no drainage infrastructure.

Build Alternatives 3 and 4 are next to the existing State Route 132 (Maze Boulevard), which has existing drainage infrastructure.

Build Alternatives 1, 3, and 4 would increase the volume of impervious surfaces by adding 50 acres of surface area each, increasing from the 50 acres existing to 100 acres total for the project.

Build Alternative 2 would add about 70 acres of new impervious surface area, totaling 120 acres from the existing 50 acres of impervious surface area.

To prevent additional runoff from the proposed intersections, roundabouts, and interchanges onto nearby land, a series of proposed drainage ditches and retention basins would be built within the state right-of-way, which would retain nearly all surface water runoff. More details about the proposed basins and figures can be found in Section 2.2.1 Hydrology and Floodplain.

After construction is complete, the existing drainage pattern and increased stormwater volume would be maintained with new and existing pipes,

drainage inlets, and other storm facilities. Each basin within the state right-of-way would be designed to accommodate two 10-year, 24-hour storm events. Other conveyance ditches would be designed for lesser events to convey surface runoff to larger basins. Long-term impacts would include alterations to drainage patterns on overcrossings and roadways. The proposed drainage is expected to be similar to the existing drainage system, with culverts directing runoff to roadside ditches.

Impacts

Potential impacts associated with increased surface runoff for all four Build Alternatives would be less than significant as drainage facilities would be designed to handle all volumes originating from the new highway during extreme events mimicking existing drainage patterns and systems avoiding flooding onsite or offsite.

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

Less Than Significant Impact—

No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no changes to the existing drainage system. Consequently, there would be no improvements to the storm drainage system that would result in additional sources of polluted runoff.

Build Alternatives

The project area is within an area of minimal flood hazard; however, the new impervious surfaces constructed would carry polluted runoff from exhaust emissions, pavement and tire wear, petroleum product drips, and corrosion of metals off of the highway into proposed drainage systems. It is anticipated that the volume of runoff being channelized will also increase as the proposed highway consists of a larger footprint when compared to existing State Route 132 (Maze Boulevard) which is only a two-lane facility.

The proposed drainage for all build alternatives is expected to be similar to the existing drainage system, which consists of culverts directing runoff to roadside ditches and retention basins. To minimize increases in flow downstream of the project area, new retention basins are proposed to capture stormwater flows exiting the roadway with increased storage capacity for the additional runoff volume. This would contain the polluted runoff onsite.

After construction is complete, the existing drainage pattern and increased stormwater volume would be maintained with new and existing pipes,

drainage inlets, and other storm facilities. Each basin within the state right-of-way would be designed to accommodate two 10-year, 24-hour storm events. Other conveyance ditches would be designed for lesser events to convey surface runoff to larger basins. Long-term impacts would include alterations to drainage patterns on overcrossings and roadways.

To prevent additional runoff from the proposed intersections, roundabouts, and interchanges onto nearby land, the proposed drainage ditches and retention basins would be built within the state right-of-way, which would retain nearly all surface water runoff onsite. More details about the proposed basins and figures can be found in Section 2.2.1 Hydrology and Floodplain.

Impacts

With the construction of these drainage discussed above and in Section 2.2.1, project impacts contributing to runoff pollution would be less than significant for the project area and remain within the state right of way.

iv) Impede or redirect flood flows?

No Impact—The existing drainage pattern would be maintained, with new and existing pipes, drainage inlets, and other storm facilities.

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

Less Than Significant Impact—

Build Alternatives

The project area is within an area of minimal flood hazard as shown in Figure 2-22. However, new impervious highway surfaces would carry additional polluted surface runoff from exhaust emissions, pavement and tire wear, petroleum product drips, and corrosion of metals to a series of established retention basins large enough to handle extreme weather event volumes and keep pollutants onsite within state highway right of way.

Each basin within the state right-of-way will be designed to accommodate two 10-year, 24-hour storm events. Figures 2-23 through 2-26 in Section 2.2.1 depict the anticipated location and number of basins to be constructed for each alternative.

Alternative 1 proposes 15 new basins, Alternative 2 proposes 24 new basins, Alternative 3 proposes 13 new basins and Alternative 4 proposes 11 new basins.

Implementation of the project's drainage plan would not result in any runoff from the proposed new intersections, roundabouts, or interchanges to drain

into nearby land. Proposed drainage ditches and retention basins within a state right-of-way would retain all surface water runoff.

Impacts

With the construction of these drainage features, project impacts contributing to runoff pollution would be less than significant for the project area and remain within the state right of way.

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

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

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—Build Alternatives would not contribute to the isolation of any community or conflict with established community facilities.

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

No Impact—The Build Alternatives would be consistent with the General Plans and land use policies because the project is listed in the plans and supports the county's goals and plans for land use in the area.

3.2.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

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

No Impact—There are no known mineral resources of value within the project area.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact—The mineral resources delineated in the Stanislaus County General Plan are not within the project area and the project would not result in the loss of availability of that mineral resource.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

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

Significant and Unavoidable Impact—

Build Alternatives

The potential for noise impacts was studied for each Build Alternative. Because each of the Build Alternatives are new alignments, future noise levels approach or exceed the noise abatement criteria, as well as result in substantial noise increases over existing conditions. It is not uncommon for a build alternative to result in traffic noise increases of up to 30 dBA over existing noise levels. These types of increases occur in areas where receptors under existing conditions are not near roadways and are located in a serene noise environment.

Each Build Alternative would result in areas where traffic noise impacts due to the effect of new alignments bringing traffic closer to sensitive receptors.

During construction under all Build Alternatives, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Construction of the project is expected to involve pile drivers, excavators, and pavers. No substantial adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specification 14-8.02 and applicable local noise standards, which would avoid and minimize noise impacts during construction. Construction noise would be short term, intermittent, and overshadowed by local traffic noise. In addition, local county noise ordinances and municipal code are in place for minimizing noise impacts during construction.

Mitigation Measures

Noise abatement in the form of sound walls was considered but found to be not feasible for the limited number of receptors distributed throughout the project limits. Therefore, the noise increases associated with the new

alignments establishes new noise levels that are significant and unavoidable. Even though abatement was not considered feasible in the Noise Abatement Decision Report, the project team will explore options during final design like window modifications and earthen berms as noise abatement options.

As mentioned in Section 2.2.6, Noise, potential long-term noise impacts associated with project operations are solely from traffic noise. No substantial noise effects are expected as a result of the construction and operation of the proposed project. As such, no avoidance, minimization, and/or mitigation measures would be required during construction of the project.

Impacts

Based on the analysis above, the noise increases associated with the new alignments under all Build Alternatives establishes new noise level impacts that are significant and unavoidable. Therefore, the impacts discussed here are significant and unavoidable because they cannot be alleviated without imposing an alternative design. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 and State Route 99 in the county. Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. In response to the region's increasing traffic volumes and worsening traffic congestion, the inefficiencies related to the movement of goods and services, and the increasingly constrained interregional circulation on existing State Route 132, Caltrans and partners propose the construction of the State Route 132 Dakota Avenue to Gates Road project.

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

Less Than Significant Impact—

Build Alternatives

It is possible that certain construction activities could cause intermittent localized concern from vibration in the project area. During certain construction phases, processes such as earth moving with bulldozers, the use of vibratory compaction rollers, demolitions, or pavement breaking may cause construction related vibration impacts such as human annoyance or, in

some cases, building damage. There are cases where it may be necessary to use this type of equipment near residential buildings.

Standard Minimization Measures

The following are procedures that would be used to minimize the potential impacts from construction vibration:

- Restrict the hours of vibration-intensive equipment or activities such as vibratory rollers so that impacts to residents are minimal (e.g., weekdays during daytime hours only when as many residents as possible are away from home).
- The owner of a building close enough to a construction vibration source, that could possibly result in damage to their structure due to vibration, would be entitled to a pre-construction building inspection to document the pre-construction condition of that structure.
- Conduct vibration monitoring during vibration-intensive activities.

A combination of the techniques for equipment vibration control as well as administrative measures, when properly implemented, can be selected to provide the most effective means to minimize the effects from construction activity. Temporary increases in vibration would still likely occur at some locations.

Impacts

Based on the analysis above, generation of excessive groundborne vibration or groundborne noise levels would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact—

Build Alternatives

Yandell Ranch Airport is within the vicinity of the project area located on North Gates Road, west of the project limits. People living or working in the project area within 2 miles of the private agricultural airstrip would periodically experience an increased noise level. However, the noise increase would not be excessive in the project area as the airstrip is outside of the project limits and far enough from the proposed alignments as to not pose a significant noise impact to those working on the project or traveling on the new alignment.

Impact

Based on the analysis above, there would be less than significant impact.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact—The First-Cut Growth Analysis, as summarized in Section 2.1.4, concluded that the project would not influence future growth. Population density is low in the project area, and although there would be relocation and displacement of some parcels and residents, the four Build Alternatives would not induce substantial unplanned population growth. Therefore, there is no impact.

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

Less than Significant Impact—

No-Build Alternative

Under the No-Build Alternative, there would be no partial or full property acquisitions required. Residents or businesses will not require relocation advisory assistance.

Build Alternatives

The area within the proposed alignments of Alternatives 1 and 2 is more rural in comparison to Alternatives 3 and 4. However, there are several residential homes, both large and small, within the project footprint. The following impacts are anticipated for each Build Alternative:

- Build Alternative 1
  - May result in the displacement of four single-family residences.
- Build Alternative 2
  - May result in the displacement of seven single-family residences and one dairy.
- Build Alternative 3
  - May result in the displacement of 34 single-family residences, three commercial businesses, and one industrial/manufacturing business.

- Build Alternative 4
    - May result in the displacement of 25 single-family residences, one duplex, 14 mobile homes, and four commercial businesses.

Adequate relocation resources for homeowners and/or renters exist within Stanislaus County. All displaced will be contacted by a relocation agent, who will ensure that eligible displaces receive their full relocation benefits, including advisory assistance, and that all activities will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies of 1979, as amended.

The displacements identified above will not necessitate the construction of replacement housing as surrounding areas within Stanislaus County contain adequate number of replacement housing to accommodate the project's needs. The project will not require the construction of replacement housing.

Mitigation Measures

Application of the Uniform Relocation Assistance and Real Property Acquisition Policies Act would assist residents relocating and finding replacement housing resulting from project displacements.

Impact

Based on the analysis above, impacts to displaced residents and housing would be less than significant.

3.2.15 Public Services

CEQA Significance Determinations for Public Services

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

Fire protection?

No Impact—The project would not affect the public's access to fire protection within the project limits. All major roadways would remain open during construction of the project.

Police protection?

No Impact— The project would not affect the public's access to police protection within the project limits. All major roadways would remain open during construction of the project.

Schools?

No Impact—There are no schools within the project area.

Parks?

No Impact—There are no public parks within the project area.

Other public facilities?

No Impact—There are no public facilities within the project area.

3.2.16 Recreation

CEQA Significance Determinations for Recreation

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

No Impact—There are no public parks, public meeting areas, or community or activity centers in or near the project area that would experience an increase in use.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact—The project would not include the construction or expansion of any recreational facilities.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

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

No Impact— All four of the Build Alternatives meet the purpose of the project, which states, the project will improve mobility, improve circulation for regional movement of traffic and circulation of local routes." Therefore, the project would not conflict with any program plan, ordinance, or policy addressing the circulation system.

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

Less Than Significant Impact—

Build Alternatives

Although the project would be built with begin and end points along existing roadways on an established corridor, Build Alternatives 1 and 2 are expected to decrease vehicle miles traveled and would be consistent with Section 15064.3 (b). Build Alternatives 3 and 4 are expected to slightly increase vehicle miles traveled and would conflict with the intensions of Section 15064.3(b).

In 2026, it is anticipated that Build Alternative 1 would result in a 20 percent decrease in Vehicle Miles Traveled for the morning peak hours and 16.7 percent in the evening peak hours when compared to the No-Build (No-Action) Alternative. Build Alternative 2 would result in a 9.7 percent increase in vehicle miles traveled for the morning peak hours and a 4.2 percent decrease for the evening peak hours. Build Alternatives 3 and 4 would increase in the morning and evening peak hours, which means more traffic on the roadway and a potential increase in traffic congestion.

In 2046, it is anticipated that Build Alternative 1 would decrease in Vehicle Miles Traveled for both the morning (-11.4 percent) and evening (-17 percent) peak hours when compared to the No-Build (No-Action) Alternative. Build Alternative 2 would decrease in Vehicle Miles Traveled for the morning peak hour (20.2 percent) and (-9.9 percent) for the evening peak hour. Build Alternatives 3 and 4 would increase in the morning (31.9 percent) and evening (8.8 percent) peak hours for vehicle miles traveled, which means more traffic on the roadway, which would result in slow and potentially congested traffic.

For all Build Alternatives, vehicle hours of delay would decrease, and average speeds would increase when compared to future No-Project Conditions under both construction year (2026) and design year (2046). Therefore, most Build Alternatives would have a beneficial impact on travel times and average speed along existing State Route 132 (Maze Boulevard) which both ultimately contribute to reductions in Greenhouse Gas Emissions and would be consistent with the intension of Section 15064.3 (b)(2) and therefore have a less than significant impact. Build Alternative 2 would have the best speed and reduce congestion among all five Alternatives resulting in reduced Greenhouse Gas emissions.

Impact

Based on the analysis above, conflict with CEQA Guidelines section 15064.3, subdivision (b) would be less than significant.

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

No Impact—The project will be constructed with standard design features and will not increase hazards due to a geometric design feature or incompatible uses imposed on the traveling public. The proposed alignments will be access controlled eliminating conflict with incompatible uses.

d) Result in inadequate emergency access?

No Impact—The project would not result in inadequate emergency access because Build Alternatives 1 and 2 would be built along a new alignment not blocking existing access to existing State Route 132. Build Alternatives 3 and 4 would maintain current access to existing State Route 132/Maze Boulevard during construction.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

No Impact— As summarized in Section 2.1.10, The Native American Heritage Commission was contacted in July 2018. The commission consulted the Sacred Lands File they maintain but did not identify any Native American cultural resources near the project area. The Native American Heritage Commission responded to Caltrans on July 17, 2018, stating that their sacred land files failed to indicate the presence of Native American cultural resources in the immediate project area.

Project notification letters were sent to Native American groups and individuals identified on lists provided by the Native American Heritage Commission. The Tribal Historic Preservation Officer for the Buena Vista Rancheria of Me-Wuk Indians responded via email on August 10, 2018. Mr. James Sarmento stated that there may be concerns regarding the project and requested the latest copy of the Archaeological Survey Report for the proposed project. A copy of the document was provided.

After coordination with the Tribal Historic Preservation Officer and the Natural Resource Director, there were no issues regarding the project.

Additionally, a topographic and historical map review and a California Cultural Resource Database search were conducted. The records search showed that numerous studies were conducted within the project locations. However, in

those studies, no previously recorded prehistoric Native American resources were found within the Area of Potential Effects (see Section 2.1.10).

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.

No Impact—Per Section 2.1.10 of this document, there were no cultural tribal resources present within the immediate project area.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

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

Less Than Significant Impact—The proposed drainage installations for all of the project alternatives are expected to be similar to the existing drainage system, with culverts directing runoff to roadside ditches and retention basins. To minimize increases in flow downstream of the project area, new retention basins are proposed that will reduce stormwater flows exiting the roadway and increase the storage capacity for the additional runoff volume onsite. Proposed drainage facilities will be constructed within the state right-of-way of the project and would not cause significant environmental effects.

Impacts

Based on the analysis above, impacts associated with the construction of new storm water drainage facilities would be less than significant.

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

No Impact—The highway project lies within an agricultural region with limited residential properties scattered throughout the limits. Water supplies are expected to be sufficient to serve the project during construction and provide sufficient water supplies for future developments.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the

project's projected demand in addition to the provider's existing commitments?

No Impact—The project would have no impact on wastewater treatment needs.

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

No Impact—The project would not generate an excess of solid waste and would not impair the attainment of solid waste reduction goals.

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

No Impact—The project would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

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

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

No Impact—The proposed project is not in or near state responsibility areas or land classified as very high fire hazard severity zone.

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

No Impact—The proposed project is not in or near state responsibility areas or land classified as very high fire hazard severity zone.

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

No Impact—The proposed project is not in or near state responsibility areas or land classified as very high fire hazard severity zone.

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

No Impact—The proposed project is not in or near state responsibility areas or land classified as very high fire hazard severity zone.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant—

After analysis of the threatened and endangered species' habitat requirements and completion of floristic and wildlife field reconnaissance surveys, it was determined that vernal pool fairy shrimp *(Branchinecta lynchi),* Swainson's hawks *(Buteo swainsoni),* tricolored blackbirds (*Agelaius tricolor*), and California tiger salamanders *(Ambystoma californiense)* have the potential to occur in the project area. Impacts to these species have been summarized in Section 3.2.4.

Implementation of avoidance and minimization measures discussed in Sections 2.3.4 and 2.3.5 prior to and during construction would reduce potential effects to these species to less than significant.

The proposed measures include those for resources such as special-status plant species—California alkaligrass (*Puccinellia simplex*) and Parry's rough tarplant (*Centromadia parryi ssp. Rudis*)—threatened or endangered animal species—vernal pool fairy shrimp (*Branchinecta lynchi)*, Swainson's hawks (*Buteo swainsoni*), and California tiger salamander (*Ambystoma californiense*)—and their habitats.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant with Mitigation Incorporated—The project has been evaluated for cumulative impacts as described in Section 2.3.7. The project would result in incremental effects to farmlands/agricultural land and visual resources that would be cumulatively considerable but were found to be less than significant with mitigation incorporated.

Farmland, Direct and Indirect Impacts by the Project

The project would convert the following amount of prime and unique farmland into roadway:

Table 2.43 Stanislaus County Farmland Land Conversion Table by Build Alternative

Land Use	Build Alternative 1 (Acres)	Build Alternative 2 (Acres)	Build Alternative 3 (Acres)	Build Alternative 4 (Acres)
Agriculture	300	446	306	282
Prime and Unique	222	371	237	234
Statewide and Local Importance	12	22	3	0
Williamson Act Property	172	172	170	175

Source: Community Impact Assessment (August 2020).

Of the farmland being directly or indirectly impacted, 97 acres to 154 acres are currently under a Williamson Act contract. These are partial acquisitions of these properties. However, the remaining parcel would not be adversely affected and could remain under a Williamson Act contract.

Farmland, Foreseeable Future Projects

All the projects listed in Table 2.42 (Section 2.3.7) are within this resource study area for farmland. Of those, the Service/Mitchell Interchange, State Route 132 West, North County Corridor, the Woodglen Specific Plan, and the Tivoli Specific Plan have impacts on prime and unique farmland.

Farmland, Potential Cumulative Impacts

Of the projects from Table 2.42, five are within the resource study area and have impacts on farmland. These are the expected impacts:

North County Corridor:

- 351 Acres of Prime and Unique Farmland
- 351 Acres Under Williamson Act Contract

Woodglen Specific Plan:

- 79 Acres of Prime and Unique Farmland

- 79 Acres Under Williamson Act Contact

Tivoli Specific Plan:

- 200 Acres of Prime and Unique Farmland
- 286 Acres Under Williamson Act Contract

Service/Mitchell Interchange:

- 3 Acres of Prime and Unique Farmland
- None Under Williamson Act Contracts

State Route 132 West:

- 64.8 Acres of Prime and Unique Farmland
- Williamson Act unknown.

When added to the conversions expected for the State Route 132 Dakota Avenue to Gates Road project, the total prime and unique farmland conversion is 1,070 acres. According to the California Department of Conservation, there are 372,350 acres of prime and unique farmland in Stanislaus County. Therefore, the cumulative impacts for all foreseeable future projects are about 0.3 percent of the prime and unique farmland for Stanislaus County. While it is possible to protect existing farmland from development with the purchase of agricultural easements, once converted to other uses it is very difficult to convert property back to farmland. Because of that, there is a cumulative impact on farmland. This project would convert the most amount of farmland of all the projects. Because of this, this project would have a significant contribution to the cumulative impact.

Together, the projects would remove 961 acres of farmland out of Williamson Act properties. Cumulative impacts to farmland would be minimized by the following mitigation measures:

FARM 1: Conversion of prime and unique farmland to non-farmland uses will be mitigated by preserving an equal amount of agricultural land within the County. This would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural land within Stanislaus County. This will be negotiated during the Design phase of the project.

FARM 2: Where parcels are bisected by a segment of the proposed project, but enough usable land remains on either side of the highway to be cultivated, then access for livestock, machinery, and/or drainage shall be built

where reasonable and feasible to provide access to both portions of the property so that the land is still viable for farming operations.

FARM 3: During the project's final design phase, Caltrans would coordinate with property owners and agricultural operators to incorporate design features to maintain access and operation.

FARM 4: The contractor would reconstruct irrigation ditches and install irrigation pipelines damaged during construction.

FARM 5: The contractor would reimburse any damage from construction-related activities that result in the loss of crops.

Visual, Direct and Indirect Impacts by the Project

The Visual Impact Assessment evaluated visual impacts for each of the four Build Alternatives. Visual analysis was evaluated for this project, and the following determinations are presented below (see Table 2.44). For more information, see the Visual Impact Assessment.

Table 2.44 Summary Overview of Visual Impacts by Build Alternative

Build Alternatives	Resource Change	Viewer Response	Visual Impact
Build Alternative 1	Moderately High	Moderate	Moderate
Build Alternative 2	High	Moderately High	High
Build Alternative 3	Low	Moderate	Moderately Low
Build Alternative 4	Low	Moderate	Moderately Low

Visual, Foreseeable Future Project

As mentioned, two highway projects within the resource study area must be considered collectively. The first is the proposed State Route 132 Dakota Avenue to Gates Road project that begins in and near North Dakota Avenue and ends about 1 mile west of the realigned Gates Road/Paradise Road intersection. The second is the locally funded State Route 132 West Freeway/Expressway that extends west from State Route 99 in the city of Modesto to North Dakota Avenue. The State Route 132 West Freeway/Expressway is immediately next to and east of the proposed State Route 132 Dakota Avenue to Gates Road project and is currently under construction. The State Route 132 West Freeway/Expressway interfaces with the State Route 132 Dakota Avenue to Gates Road project at and near the intersections of North Dakota Avenue and Maze Boulevard and North Dakota Avenue and Kansas Avenue.

Visual, Potential Cumulative Impacts

The visual concern with these two consecutive highway construction projects (State Route 12 Dakota Avenue to Gates Road/State Route 132 West Freeway/Expressway) is the encroachment of urbanization into a moderately

high to highly intact rural agricultural landscape. Urban elements in the form of expansive roadway right-of-way, footprints and hardscape areas, large-scale interchanges and bridge structures, retaining walls and soundwalls, and the like would be built along portions of the corridor. As a result, both projects are expected to incrementally reduce existing prime agricultural land while simultaneously adversely impacting the existing visual character and quality of the region.

Visual studies for each project have determined adverse visual impacts associated with each of the project alternatives, along with mitigation strategies to reduce impacts and maximize the preservation of existing visual resources. However, mitigation measures for State Route 132 Dakota Avenue to Gates Road—Build Alternative 2 would require extraordinary efforts to achieve an impact reduction to existing visual resources.

The proposed State Route 132 Dakota Avenue to Gates Road project has determined adverse visual impacts ranging from moderately low to high, depending on the selected Build Alternative. The State Route 132 West Freeway/Expressway that is currently under construction has also identified adverse visual impacts associated with the built project. When combined, it is expected that incremental visual changes would occur, causing a reduction to the existing visual resource of the regional agricultural character. Therefore, due to the likelihood of these visual changes, cumulative impacts are expected.

Specific mitigation measures for visual impacts are outlined in Section 2.1.9. Implementation of minimization and mitigation measures VR-1 through VR-18 would reduce the cumulative impacts to visual resources to Less Than Significant.

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

Significant and Unavoidable Impact—As described in Chapter 2, even with mitigation, the project would have unavoidable impacts to the following resources: Farmland, Climate Change, Noise, Williamson Act Contracts, and Visual resources. Impacts to these resources would indirectly and/or directly affect human beings within the project limits. Therefore, these impacts are significant and cannot be fully mitigated.

Measures have been proposed to avoid, minimize, and partially mitigate the identified impacts to the fullest extent possible (see Appendix D). However, these impacts to these resources will remain significant and unavoidable despite these measures (See Section 2.1.3, Section 3.4, Section 2.2.6, Section 2.1.3, Section 2.1.9).

Therefore, the impacts discussed are significant and unavoidable because they cannot be alleviated without imposing an alternative design. State Route 132 is essential to mobility in western Stanislaus County because it is the only highway that connects Interstate 5 to State Route 99 in the county. Over the last 30 years, the strain on local roads has grown because Modesto area communities have grown in population, and commuter traffic has increased. Commuter traffic to the Bay Area has increased due to the availability of affordable housing in the Central Valley. The State Route 132 Dakota Avenue to Gates Road project would connect to the State Route 132 West Freeway/Expressway, which started Phase 1 construction in 2019 and is expected to be completed in 2020. Together, both projects would improve the transportation corridor of State Route 132 within and west of the city of Modesto. In response to the region's increasing traffic volumes and worsening traffic congestion, the inefficiencies related to the movement of goods and services, and the increasingly constrained interregional circulation on existing State Route 132, Caltrans and partners propose the construction of the State Route 132 Dakota Avenue to Gates Road project.

3.3 Wildfire

3.3.1 Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection to develop amendments to the "CEQA Checklist" for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects "near" these very high fire hazard severity zones.

3.3.2 Affected Environment

The project limits on State Route 132 are within the western portion of Stanislaus County. This area falls under the jurisdiction of the Woodland Fire Prevention District. The proposed project is not in or near state responsibility areas or land classified as very high fire hazard severity zone as listed in the Fire Hazard Severity Zone maps. Brush fires from dry vegetation, along with high temperatures, low humidity and strong winds, are major factors for wildfires from May to October.

3.3.3 Environmental Consequences

Wildland fires are generally limited to the foothills on both the eastern and western sides of Stanislaus County. Grasslands and other wild plant life are the major sources of fire fuel. There are few homes or structures within the project limits. The ability to put out such wildfires is more achievable because of the accessibility from county roads and existing State Route 132 (Maze Boulevard).

Avoidance, Minimization, and/or Mitigation Measures

Caltrans 2018 revised Standard Specification 7-1.02M (2) mandates fire prevention procedures, including a fire prevention plan. The following Construction Site Best Management Practices to prevent wildfire would also be implemented:

- Onsite vehicle and equipment fueling would only be used where it's impractical to send vehicles and equipment offsite for fueling.
- Vehicles and equipment would be inspected on each day of use for leaks. Leaks would be repaired immediately, or problem vehicles or equipment would be removed from the project site.
- Entry and exit areas to construction work areas would be kept clear, with no construction debris, to prevent any spills or accidental human-made sparks.
- Construction materials, equipment storage, and parking areas would be located where they would not cause damage to vegetation, especially during the dry weather when hot exhaust systems can kindle fire in dry grass.
- Local California Department of Forestry and Fire Protection and West Point Fire departments would be consulted throughout the construction window. Other agencies that may need to be advised include, but are not limited to, the Stanislaus County Sheriff, the California Highway Patrol, and the Stanislaus Public Works Department.
- Temporary storage sheds would need to meet building and fire code requirements and would be located away from vehicle traffic.
- Fires would not be permitted within 100 feet of the drip line of any retained trees.
- Portable fuel canisters would be kept in a nonflammable cabinet when not in use.
- Consideration would be given to installing more utility features underground.

Metal power poles instead of wooden poles would be used.

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 primarily concerned with the emissions of greenhouse gases generated by human activity, including carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. Carbon dioxide is the most abundant greenhouse gas; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated carbon dioxide.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing greenhouse gas emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.4.1 Regulatory Setting

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

Federal

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

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

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

safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

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

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

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

State

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

Executive Order S-3-05 (June 1, 2005): The goal of this Executive Order is to reduce California's greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 greenhouse gas emissions reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used

to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (Health and Safety Code Section 38551(b)) The law requires the California Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The California Air Resources Board re-adopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 greenhouse gas reduction goals.

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

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

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

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

assessed as multiples of carbon dioxide. Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

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

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

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

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

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

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

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

Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

3.4.2 Environmental Setting

The proposed project is in a rural area, in a mostly agricultural setting. State Route 132 (Maze Boulevard) is an important commuter route for Central Valley residents going to Bay Area employment centers. State Route 132 (Maze Boulevard) provides an interregional connection between Interstate 5 near the city of Tracy to the west and State Route 99 in Modesto to the east. Both passenger vehicles and commercial vehicles use the route. The nearest alternate route is State Route 120 about 17 miles to the north central of the proposed project area. The current daily traffic volumes within the project area range between 12,800 and 13,100 vehicles. A traffic analysis of the existing segment of State Route 132 (Maze Boulevard) has projected an increase in congestion along the route because of deficiencies of the existing highway and future increases in regional traffic and interregional commuter and truck traffic.

The Stanislaus Council of Governments' Regional Transportation Plan/Sustainable Communities Strategies guides transportation development in the project area. The Stanislaus County General Plan addresses greenhouse gases in the project area.

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

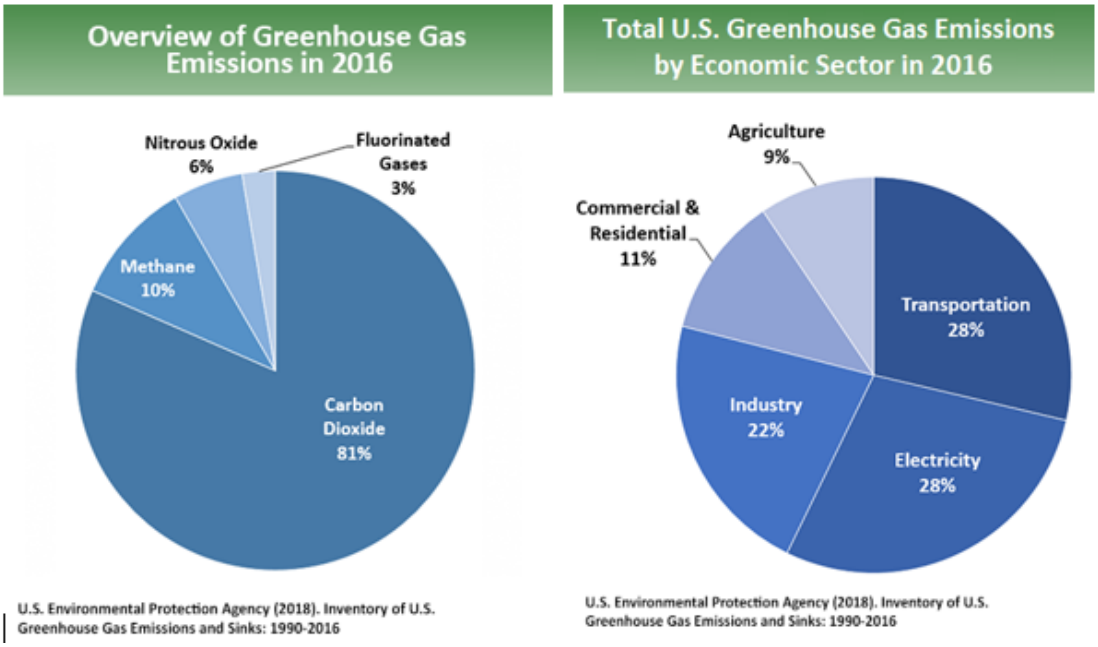
National Greenhouse Gas Inventory

The U.S. Environmental Protection Agency prepares a national greenhouse gas inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of greenhouse gases in the United States, reporting emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. It also accounts for emissions of carbon dioxide that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store carbon dioxide (carbon sequestration).

The 1990–2016 inventory found that of 6,511 million metric tons of carbon dioxide equivalent greenhouse gas emissions in 2016, 81 percent consist of

carbon dioxide, 10 percent are methane, and six percent are nitrous oxide; the balance consists of fluorinated gases. (Environmental Protection Agency 2018a) In 2016, greenhouse gas emissions from the transportation sector accounted for nearly 28.5 percent of U.S. greenhouse gas emissions. See Figure 3-1.

Figure 3-1 U.S. 2016 Greenhouse Gas Emissions



State Greenhouse Gas Inventory

The California Air Resources Board collects greenhouse gas emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its greenhouse gas reduction goals. The 2019 edition of the greenhouse gas emissions inventory found total California emissions of 424.1 million metric tons of carbon dioxide equivalent for 2017, with the transportation sector responsible for 41 percent of total greenhouse gases. It also found that overall statewide greenhouse gas emissions declined from 2000 to 2017 despite growth in population and state economic output. (California Air Resources Board 2019a) See Figures 3-2 and 3-3.

Figure 3-2 California 2016 Greenhouse Gas Emissions

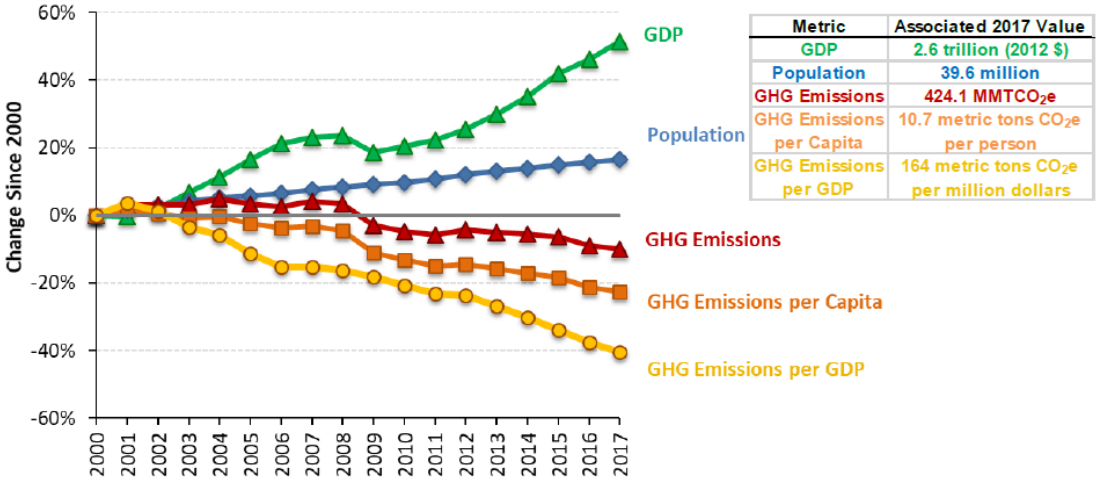
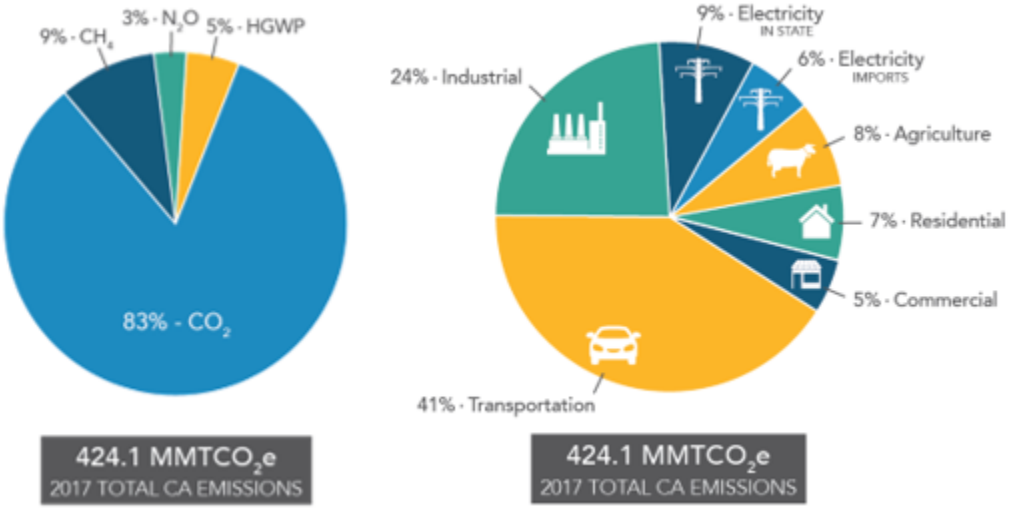


Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000 (Source: ARB 2019b)



Source: California Air Resources Board, 2019

Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every 5 years. The California Air Resources Board adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in Executive Order B-30-15 and Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions.

Regional Plans

The California Air Resources Board sets regional targets for California's 18 Metropolitan Planning Organizations to use in their Regional Transportation Plan/Sustainable Communities Strategy to plan future projects that will cumulatively achieve greenhouse gas reduction goals. Targets are set at a percent reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. The proposed project is included in the Regional Transportation Plan/Sustainable Communities Strategy for Stanislaus Council of Governments' 2018 (Project ID Number SC01c). The regional reduction target for Stanislaus Council of Governments is 12 percent by 2020 and 16 percent by 2035. (California Air Resources Board 2019c)

The proposed project is within the jurisdiction of the Stanislaus Council of Governments Regional Transportation Planning Agency. The 2018 Regional Transportation Plan identifies ten overarching goals for coordinated land use and transportation planning that are intended to support the State's broader climate goals of reducing greenhouse gas emissions from passenger vehicle use.

Table 3.1 Regional and Local Greenhouse Gas Reduction Strategies

Title	Greenhouse Reduction Policies or Strategies
Stanislaus Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy (adopted Per Resolution 18-03 August 2018)	Achieve Senate Bill 375 Greenhouse Gas reduction goals Preserve transportation infrastructure Improve mobility and accessibility Reduce Greenhouse Gas and improve air quality Improve public health Conserve land and natural resources Encourage sustainable land use patterns Increase supply of affordable housing Improve jobs and housing balance Improve mobility and accessibility for low-income and disadvantaged communities Support economic development Increase safety and security of the transportation system for motorized and non-motorized users
Stanislaus County 2015 General Plan	Goal One: Provide and maintain a transportation system throughout the County for the movement of people and goods that also meets land use and safety needs for all modes of transportation. Policy Six: The County shall strive to reduce motor vehicle emissions and vehicle miles traveled by encouraging the use of alternatives to single occupant vehicles. The County will continue to work with the Stanislaus Council of Governments and the San Joaquin Valley Air Pollution Control District to develop and implement transportation control measures to improve air quality through reduction in vehicle trips and Vehicle Miles Traveled. Goal 7: System Preservation Maintain the transportation system in a state of good repair and protect the region's transportation investments by maximizing the use of existing facilities." Plan to purchase a number of new diesel-powered buses. This approach appears counterproductive given that an objective is to improve the air quality attainment record. It would be more genuine to purchase clean air buses which would be compressed natural gas powered.

3.4.3 Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the state highway system and those produced during construction. The primary greenhouse gases produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. In addition, a small amount of hydrofluorocarbon emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change. (Public Resources Code, Section 21083(b)(2)) As the California Supreme Court explained, “because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation *v.* San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable.” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

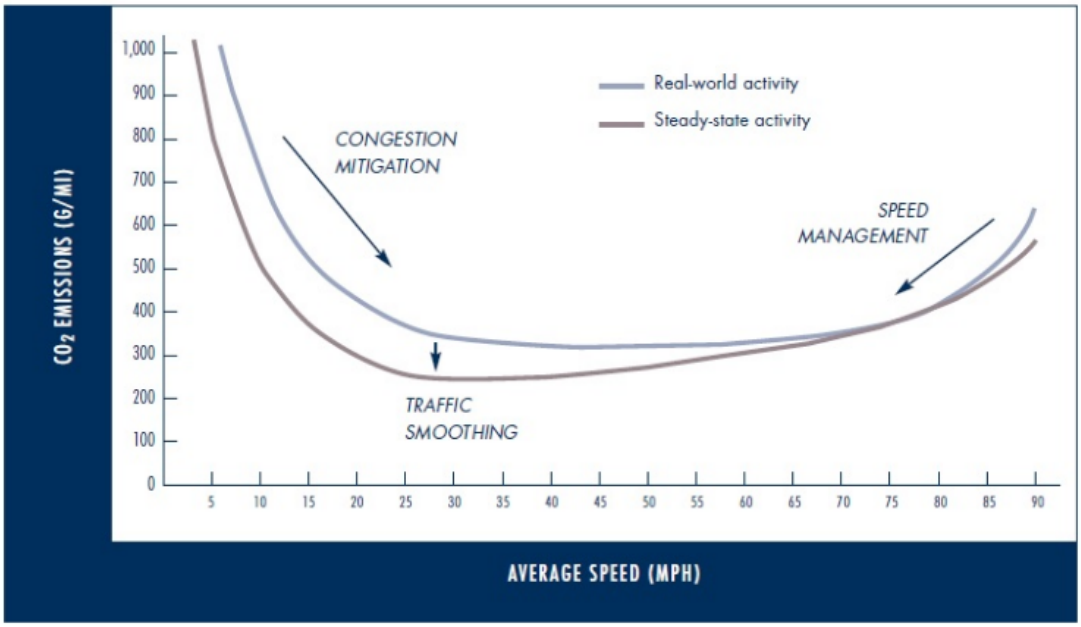
Carbon dioxide accounts for 95 percent of transportation greenhouse gas emissions in the U.S. The largest sources of transportation-related greenhouse gas emissions are passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over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

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

corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

Four primary strategies can reduce greenhouse gas emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower greenhouse gas-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

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



Source: Barth and Boriboonsomsin 2010)

The 2018 Stanislaus Council of Governments' Regional Transportation Plan Sustainable Communities Strategy includes a number of new projects. All projects listed in the 2018 Regional Transportation Plan Sustainable Communities Strategy are defined as Tier one improvements. The Tier one list contains short- and long-range projects that are fully fundable from anticipated revenue sources and would likely be programmed during the life of the Regional Transportation Plan (by 2042).

"The recommended Tier one improvements for each transportation mode type, including roadways, transit, bicycle and pedestrian and aviation, are intended to implement a balanced multimodal circulation system, improve air quality by reducing vehicle miles traveled and greenhouse gas emissions while accommodating anticipated travel demand. In addition to the typical transportation system improvements such as widening roadways and adding traffic signals to improve congestion and mobility, Stanislaus Council of

Governments is committed to analyzing alternative strategies such as Transportation Systems Management Transportation Demand Management and Intelligent Transportation Systems to increase system efficiencies. The alternative strategies will provide increased opportunities for non-auto travel; thus, reducing vehicle miles traveled and improving overall air quality." (http://www.stancog.org/pdf/rtp2018/draft-2018-rtp-scs-peir.pdf)

The State Route 132 Dakota Avenue to Gates Road project is listed in the fiscally constrained Tier One Investment Plan, according to Stanislaus Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy-Chapter 10 Action Plan.

In addition to the Tier one projects, Stanislaus Council of Governments identified $900,000 in investment funds to do three studies related to traffic operations, transportation technology, and electric infrastructure implementation to increase alternative mode share and system improvements. These additional studies would emphasize various travel modes to decrease vehicle miles traveled and improve air quality for Stanislaus County residents.

Alternate travel modes, such as bicycle/pedestrian and bus/rail services, were studied as part of early project planning. For this proposed project, alternative modes such as bicycle and pedestrian modes were considered at intersections to accommodate bicycles and pedestrians crossing the expressway and traveling along nearby local roads. Further design would be available for discussion in later phases of this project.

The State Route 132 Dakota Avenue to Gates Road project would improve regional and interregional circulation, relieve traffic congestion along existing State Route132 (Maze Boulevard), and improve operations by creating a four-lane freeway/expressway on a new alignment. The project's Build Alternative features would include but would not be limited to interchanges with roundabout ramp intersections, access-controlled signalized intersections, and elimination of left- and right-turn lanes at some intersections. The roadway improvements would make travel more efficient for local commuters as well as regional travelers.

Roundabouts

The proposed Build Alternatives 1 and 2 include the construction of roundabouts on the new alignment. According various research conducted by Nevada and New York State Department of Transportation, roundabouts can effectively improve traffic flow and reduce vehicle emissions by reducing vehicle idle time at intersections. Standard traffic signals would stop multiple directions of traffic at one time. In contrast, roundabouts would have all directions of traffic open and flowing, which would reduce vehicle emission, noise pollution, and fuel consumption. In one study, replacing traffic signals and signs with roundabouts reduced carbon monoxide emissions by 32

percent, nitrous oxide emissions by 34 percent, carbon dioxide emissions by 37 percent and hydrocarbon emissions by 42 percent. Gasoline use is also reduced as traffic moves more efficiently through roundabouts, without the start and stop found at traditional intersections. Studies have shown that fuel savings can be up to 30 percent in roundabouts. At 10 intersections studied in Virginia, this savings amounted to more than 200,000 gallons of fuel per year.

The mass transit alternative would not accommodate the projected volumes of truck traffic (21 percent of total traffic volumes) and regional commuters who are traveling to points outside of the project study area along existing State Route 132 (Maze Boulevard). Regarding truck volumes, the transportation system management and transportation demand management alternative would not enhance the ability to transport goods and services. Because there are no direct connections, auxiliary lanes, or improved on- and off-ramps between the existing highway and State Route 99, the mass transit alternative would not improve system connectivity. The alternative, by itself, is not consistent with local and regional land use goals.

Quantitative Analysis

Caltrans Emission Factors version 2017 model and traffic data from Caltrans Traffic Forecasting and Operations Analysis Report 2019 were used to estimate annual carbon dioxide emissions for existing (2018) conditions, construction year (2026) conditions, and design year (2046) conditions.

Table 3-2 shows projected carbon dioxide emissions and Vehicle Miles Traveled for the existing condition in 2018, and no-build and Build Alternatives in 2026 and in 2046, respectively.

Opening Year (2026), Carbon Dioxide Emissions

In the open-to-traffic year (2026), the No-Build carbon dioxide emissions would be 11,462.10 tons per year compared to 12,772.81 tons per year from the Existing/Baseline 2018, which is 1,310.71 tons per year less carbon dioxide emissions per year. However, without the project, operational efficiency would not improve and the potential for vehicular accidents in the project area may not be acceptable.

For Build Alternative 1 carbon dioxide emission in the construction year (2026) would be 11,440.20 tons per year which is 1,331.98 tons per year less than the Existing/Baseline.

For Build Alternatives 2, 3 and 4, the carbon dioxide emissions (2026) would be 14,881.41, 16,745.11, and 17,067.40 tons per year, respectively. Build Alternatives 2, 3, and 4 would respectively produce 2,108.6, 3,972.3, and 4,294.59 tons per year more carbon dioxide emissions per year than the Existing/Baseline.

Opening Year (2026), Vehicle Miles Traveled

In the open-to-traffic year (2026), the No-Build Vehicle Miles Traveled would be 188,882 compared to 155,233 for the Existing/Baseline in 2018, which is 33,649 more Vehicle Miles Traveled than existing baseline.

For Build Alternative 1 Vehicle Miles Traveled in the construction year of 2026 would average 154,542 per year which is 691 Vehicle Miles Traveled less than the existing/baseline.

For Build Alternatives 2, 3 and 4, the Vehicle Miles Traveled would average 192,393, 224,772, and 224,772 Vehicle Miles Traveled per year, respectively. Build Alternative 2, 3 and 4 would respectively produce 37,160, 69,539, and 69,539 more Vehicle Miles Traveled per year than the Existing/Baseline.

Design Year (2046), Carbon Dioxide Emissions

In the Design year (2046), the No-Build carbon dioxide emissions would be 12,425.33 tons per year compared to 12,772.82 tons per year for the Existing/Baseline, which is 347.49 tons per year less carbon dioxide emissions per year. For Build Alternative 1 carbon dioxide emission in the Design year (2046) would be 13,372.87 tons per year, which is 600.69 tons per year more than the Existing/Baseline.

For Build Alternatives 2, 3 and 4, the carbon dioxide emissions would be 15,925.32, 18,577.04, and 18,997.16 tons per year, respectively. These Build Alternatives would respectively produce 3,152.51, 5,804.86, and 6,224.98 tons per year more carbon dioxide emissions than the Existing/Baseline.

Table 3.2 Estimated Annual Carbon Dioxide Emissions from the Proposed Build Alternatives

Build Alternatives	Carbon Dioxide Emissions (Tons per Year)	Vehicle Miles Traveled Annual Average
Existing/Baseline 2018	12,772.81	155,233
2026 No-Build	11,462.10	188,882
2026 Build Alternative 1	11,440.20	154,542
2026 Build Alternative 2	14,881.42	192,393
2026 Build Alternative 3	16,745.11	224,773
2026 Build Alternative 4	17,067.40	224,773
2046 No-Build	12,425.33	220,138
2046 Build Alternative 1	13,372.87	188,102
2046 Build Alternative 2	15,925.32	246,065
2046 Build Alternative 3	18,577.04	283,450
2046 Build Alternative 4	18,997.16	283,450

Source: Caltrans Emission Factors 2017 and Final Traffic Operations Analysis Report 2019

Design Year (2046), Vehicle Miles Traveled

In the Design year (2046), the No-Build Vehicle Miles Traveled would be 220,138 compared to 155,233 for the Existing/Baseline in 2018, which is 64,905 more Vehicle Miles Traveled than the existing baseline.

For Build Alternative 1 Vehicle Miles Traveled in the Design year of 2046 would average 188,102 per year which is 32,869 Vehicle Miles Traveled more than the existing/baseline.

For Build Alternatives 2, 3 and 4, the Vehicle Miles Traveled would average 246,065, 283,450, and 283,450 Vehicle Miles Traveled per year, respectively. Build Alternative 2, 3 and 4 would respectively produce 90,832, 128,217, and 128,217 more Vehicle Miles Traveled per year than the Existing/Baseline.

As shown in Table 3.2 above, under the design year (2046), all four Build Alternatives would result in a decrease in carbon dioxide emissions compared to both existing/baseline (2018) and the No-Build (No-Action) Alternative. The proposed project would increase greenhouse gas emissions due to projected increases in population and annual Vehicle Miles Traveled. Building the project would, however, improve traffic circulation and operational efficiency.

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

Construction Emissions

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

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

Construction greenhouse gas emissions for the proposed project were calculated using Caltrans' Construction Emissions Tool version 1.1. The analysis focused on vehicle-emitted greenhouse gas emissions—carbon dioxide, methane and nitrous oxide. Project construction is expected to generate about 5,098 tons of carbon dioxide during the 300 working days of project work. Construction Carbon Dioxide emissions from the proposed project are expected to be the same for all Build Alternatives when Opening Year starts in 2026.

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

CEQA Conclusion

The proposed project would result in an increase in greenhouse gas emissions under all four Build Alternatives and during construction. In the design year (2046) carbon dioxide emissions under all Build Alternatives would be less than existing (2018) carbon dioxide emissions; Build Alternative 4 would have the highest emissions.

The proposed project would increase greenhouse gas emissions due to projected increases in population and annual Vehicle Miles Traveled. The traffic in the general project vicinity, however, will operate at a higher Level of Service and operate with more efficiency than currently. Under design year 2046, all Build Alternatives would reduce congestion by reducing vehicle hours of delay for both morning and evening peak hours. Average speed would improve to between 42 miles per hour to 52 miles per hour within the project limits.

Nevertheless, the impact of greenhouse gases would be significant and unavoidable because the project would not contribute to statewide greenhouse gas reduction goals.

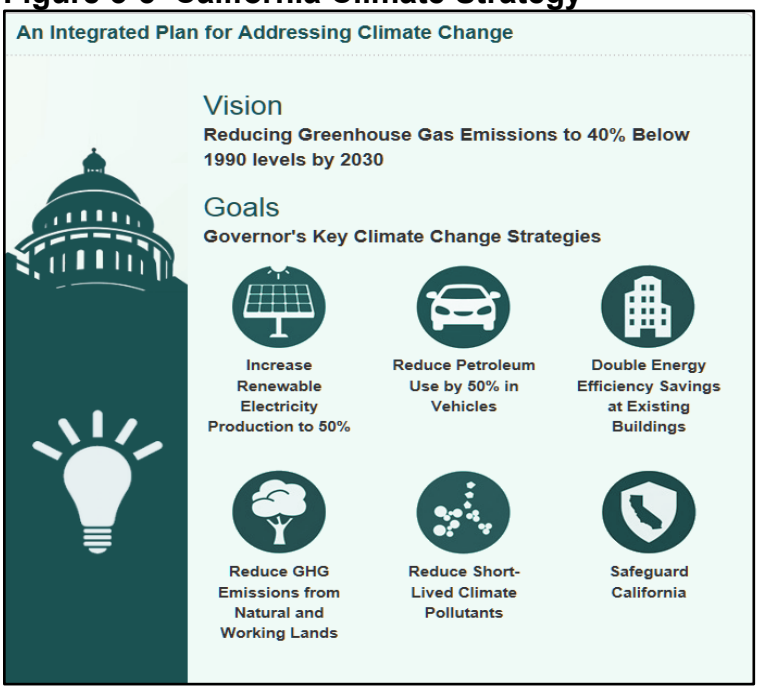
Caltrans is firmly committed to implementing measures to help reduce Greenhouse Gas emissions. These measures are outlined in the following section.

3.4.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. Former Governor Edmund G. Brown promoted greenhouse gas reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, Safeguarding California. See Figure 3-5.

Figure 3-5 California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve greenhouse gas emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030. (State of California 2019)

In addition, Senate Bill 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and

vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above-ground and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Executive Order B-30-15, issued in April 2015, and Senate Bill 32 (2016), set an interim target to cut greenhouse gas emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with carbon dioxide reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

Senate Bill 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under Assembly Bill 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation Plan 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce greenhouse gas emissions, among other goals. Specific performance targets in the plan that will help to reduce greenhouse gas emissions include:

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

- Reducing Caltrans' internal operational (buildings, facilities, and fuel) greenhouse gas emissions.

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

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

- Limit idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment.
- Construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- 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.
- Provide Construction Environmental Training: Supplement existing training with information regarding methods to reduce greenhouse gas emissions related to construction.
- Maximize use of recycled materials (e.g., tire rubber).
- Balance earthwork: Reduce the need for transport of earthen materials by balancing cut and fill quantities.

- Reduce the need for electric lighting by using ultra-reflective sign materials that are illuminated by headlights.

Use measures that consider incorporation of Best Available Control Technology during design, construction and operation of projects to minimize greenhouse gas emissions, including but not limited to:

- Use energy- and fuel-efficient vehicles and equipment.
- Deploy zero and/or near-zero emission technologies as defined by the California Air Resources Board.
- Use lighting systems that are energy efficient, such as LED technology.
- Use cement blended with the maximum feasible amount of fly ash or other materials that reduce greenhouse gas emissions from cement production.
- Incorporate design measures to reduce greenhouse gas emissions from solid waste management through solid waste reduction, recycling and reuse.
- Protect and plant shade trees in or near construction projects.

3.4.5 Adaptation

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

Federal Efforts

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

The U.S. Global Change Research Program delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990. (15 U.S. Code Chapter 56A Section 2921 et seq.). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental

elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime." (USGCRP 2018)

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

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

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- Adaptive capacity is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."
- Exposure is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.

- Resilience is the "capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience." Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- Sensitivity is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

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

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

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

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This Executive Order recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of Executive Order B-30-15, the Office of Planning and Research published Planning and Investing for a Resilient California: A Guidebook for State Agencies in 2017, to encourage a uniform and systematic approach. Representatives of

Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

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

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

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

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

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

Project Adaptation Analysis

Sea Level Rise

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

Floodplains Analysis

Based on the Federal Emergency Management Agency, the proposed project area is within an Area of Minimal Flood Hazard (unshaded Zone X), which is determined to be outside the 0.2 percent annual chance floodplain (500-year frequency). The unshaded Zone X represents the majority of the four Build Alternatives' proposed areas. The remaining project area on the western end of the proposed project is within the shaded Zone A where all four Build Alternatives are within a 1 percent annual chance (100-year frequency) floodplain (More details about the floodplain and figures can be found in Section 2.2.1 Hydraulic and Floodplain).

To date, local Caltrans maintenance crews have never experienced flooding or drainage issues within the project limits. To accommodate additional roadway runoff from increased impervious surfaces, the proposed project would involve the construction of a series of retention basins and drainage ditches within a Caltrans right-of-way. There are eight proposed basins for Build Alternatives 1, 3, and 4. There are 16 proposed basins for Build Alternative 2. All retention basins would be at least 5 feet deep with 2 feet freeboard, while drainage ditches would be 3 feet deep. The Caltrans District 10 Climate Change Vulnerability Assessment mapping for precipitation change indicates a less than 5 percent increase in 100-year storm precipitation through 2085. Given these project features, the proposed project would accommodate precipitation changes due to climate change.

Wildfire

The project is within the western portion of Stanislaus County. This area falls under the jurisdiction of the Woodland Fire Prevention District. The proposed project is not in or near state responsibility areas or land classified as very high fire hazard severity zone as listed in the Fire Hazard Severity Zone maps.

There are few homes or structures within the project limits. Brush fires from dry vegetation, along with high temperatures, low humidity, and strong winds are major factors for wildfires from May to October.

Wildland fires are generally limited to the foothills on both the eastern and western sides of the county. Grasslands and other wild plant life are the major sources of fire fuel. Putting out such wildfires is achievable because of the accessibility from county roads and existing State Route 132 (Maze Boulevard).

Caltrans' 2018 revised Standard Specification 7-1.02M (2) mandates fire prevention procedures, including a fire prevention plan. The following Construction Site Best Management Practices to prevent wildfire would also be implemented:

- Onsite vehicle and equipment fueling will only be used where it's impractical to send vehicles and equipment offsite for fueling.
- Vehicles and equipment would be inspected on each day of use for leaks. Leaks will be repaired immediately, or problem vehicles or equipment will be removed from the project site.
- Entry and exit areas to construction work areas would be kept clear, with no construction debris, to prevent any spills or accidental human-made sparks.
- Construction materials, equipment storage, and parking areas will be located where they will not cause damage to vegetation, especially during the dry weather when hot exhaust systems can kindle fire in dry grass.
- Local California Department of Forestry and Fire Protection and West Point Fire departments would be consulted throughout the construction window. Other agencies that may need to be advised include, but are not limited to, the Stanislaus County Sheriff, the California Highway Patrol and the Stanislaus Public Works Department.
- Temporary storage sheds would need to meet building and fire code requirements and would be located away from vehicle traffic.
- Fires would not be permitted within 100 feet of the drip line of any retained trees.
- Portable fuel canisters would be kept in a nonflammable cabinet when not in use.
- Consideration would be given to installing more utility features underground.
- Metal power poles instead of wooden poles would be used.

Climate Change References

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U.S. Global Change Research Program (USGCRP). 2018. Fourth National Climate Assessment. https://nca2018.globalchange.gov/. Accessed: August 21, 2019.

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 the proposed project have been accomplished through a variety of formal and informal methods, including community workshops, project development team meetings, stakeholder focus group meetings, interagency coordination meetings, and a public scoping meeting. This chapter summarizes the results of Stanislaus County and Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

Public Scoping and Participation

Notice of Preparation

Caltrans filed a Notice of Preparation of an environmental impact report with the State Clearinghouse on September 26, 2018. The filing of the Notice of Preparation began a 30-day scoping period that extended to October 25, 2018. A copy of the Notice of Preparation (State Clearinghouse Number 2018092062) is included in Appendix E.

The scoping period was noticed through newspaper advertisements that ran in The Modesto Bee (English version) and the Vida en el Valle (Spanish version) on September 26, 2018. The Notice of Preparation for the draft environmental document was mailed on September 24, 2018, to federal, state, and local officials, as well as residents and other interested groups.

Scoping Meeting

The public information meeting was held on Wednesday, October 10, 2018, from 6:30 p.m. to 8:30 p.m. at Franklin Elementary School at 120 South Emerald Avenue in Modesto, California. The public information meeting was conducted in an open forum format to facilitate communication between the project team and the public. When the attendees arrived, they were asked to sign in and were handed a project information sheet. Staff invited each attendee to view the displays throughout the room and ask questions. Attendees were also told they could place their written comments in the drop box at the meeting or mail/email their comments to Caltrans or give their oral comments to the court reporter onsite. A certified Spanish interpreter was provided for Spanish-speaking attendees.

The purpose of the public information meeting was to present the proposed project and its alternatives to the public and other interested parties, to

answer any questions attendees may have, and to gather public feedback on the State Route 132 Dakota Avenue to Gates Road project.

Attendees were encouraged to submit comments in writing, either during the meeting or directly to Caltrans staff via postal mail or email. Comments were requested to be submitted by October 25, 2018.

A total of 54 members of the public signed in at the meeting. Caltrans received 11 comments by U.S. Mail or email and a court reporter recorded two comments. Many comments covered more than one topic area. Comments regarding support for Build Alternatives 1 and 2 were the most common, followed by support for Build Alternatives 3 and 4 due to the environmental and funding reasons. One comment expressed that the west end of the project could benefit from using a continuous S-shaped design to reconnect the new State Route 132 to the existing State Route 132 (Maze Boulevard).

Neighborhood Survey

To obtain input from community members potentially impacted by the project, a neighborhood survey was sent on September 20, 2019 to 80 residents of the project area. The survey package consisted of a public information sheet, a 16-question survey, and a prepaid return envelope. All materials where provided in both Spanish and English. The respond-by date on the surveys was November 2, 2019. Mail in responses were accepted until November 18, 2019.

Virtual public information meeting

A virtual public information meeting was held on October 7, 2020 online between the hours of 5:00 p.m. and 7:00 p.m. Project team members were available online to facilitate the public's navigation through a website prepared specifically for the project and the October 7th event. Caltrans' staff were available to answer questions and give attendees an update on the project.

The public involvement for State Route 132 Dakota Avenue to Gates Road project has been extensive in terms of outreach efforts, input from interested groups, individuals, and agencies. Efforts have been made to attempt to reach all communities within the project area, with decent success. Additional public outreach will be completed throughout the remaining phases of this project.

Consultation and Coordination with Public Agencies

Modesto Irrigation District

A meeting was held with the Modesto Irrigation district on January 9, 2021. The purpose of the meeting was to brief the irrigation district of the project alternatives and associated impacts to their facilities and to obtain further input on any concerns. Coordination is ongoing and will continue throughout the design phase of the project.

Stanislaus County Planning Department

A meeting was held with the Stanislaus County Planning representative on January 21, 2019 to coordinate and discuss possible farmland mitigation options available within Stanislaus County. Coordination is ongoing and will continue throughout the design phase of the project.

U.S. Environmental Protection Agency/Federal Highway Administration

Concurrence of air quality conformity was provided by Caltrans' interagency

consultation partners, which included the U.S. Environmental Protection Agency and Federal Highway Administration on July 10, 2019.

Concurrence was provided that the project is not a "Project of Air Quality Concern" on September 16, 2019, by the U.S. Environmental Protection Agency and Federal Highway Administration. Details of the air quality conformity analysis are included in Section 2.2.5, Air Quality.

Native American Consultation

Native American consultation was initiated on July 5, 2018, with a letter sent to the Native American Heritage Commission, 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. The letter also requested the names of Native American individuals and group representatives who may be interested in or able to supply information relevant to the project.

Assembly Bill 52 consultation was initiated July 10, 2018, by Mr. Jeffrey Delsescaux, District Native American Coordinator for District 10. Mr. Delsescaux provided the Assembly Bill 52 contact list for the project area. Only one tribe is listed as the Assembly Bill 52 contact for the project vicinity, the Buena Vista Rancheria of Me-Wuk Indians.

The Native American Heritage Commission responded to Caltrans on July 17, 2018, stating that their sacred land files failed to indicate the presence of Native American cultural resources in the immediate project area. The Native American Heritage Commission provided a list of contacts who may be interested in the proposed project as well as recommendations for further tribal consultation. The individuals and tribal contacts are included in the Native American consultation efforts for the undertaking.

- Ms. Amy Ponsetti, Environmental Manager, Tuolumne Band of Me-Wuk Indians
- Mr. Bill Leonard, Chairperson, Southern Sierra Miwuk Nation
- Mr. Charles Wilson, Chairperson, Calaveras Band of Mi-Wuk Indians
- Ms. Debra Grimes, Cultural Resource Specialist, Calaveras Band of Mi-Wuk Indians
- Ms. Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe
- Ms. Kerri Vera, Environmental Manager, Tule River Indian Tribe
- Mr. Kevin Day, Chairperson, Tuolumne Band of Me-Wuk Indians
- Mr. Neil Peyron, Chairperson, Tule River Indian Tribe
- Mr. James Sarmento (Assembly Bill 52), Tribal Historic Preservation Officer, Buena Vista Rancheria of Me-Wuk Indians
- Mr. Mike DeSpain (Assembly Bill 52), Natural Resource Director, Buena Vista Rancheria of Me-Wuk Indians
- Ms. Silvia Burley, Chairperson, California Valley Miwok Tribe
- Mr. Ruben Barrios, Chairperson, Santa Rosa Rancheria Tachi Yokuts

In addition to the Native American tribal contacts listed above, Caltrans Central Region cultural staff based in Fresno sent out letters to the following community interest groups/ individuals listed below on July 19, 2018.

- Mr. Anan Raymond/Mr. Nick Valentine-U.S. Fish and Wildlife Service
- Brethren Community Fellowship
- Mr. Scot Boone-Old German Baptist Brethren Church Congregation-Modesto
- Ms. Nancy Layman-Old German Baptist Brethren Church Congregation-West Modesto
- Modesto Church of the Brethren
- Mr. Wayne Hasemeier- Old German Baptist Brethren Church Wood
- Colony Cemetery Committee, Chairperson

Each letter contained the project description, project mapping, and a request for information regarding prehistoric sites, historic sites, ethnographic land use, and contemporary Native American values in the project area. Two additional Native American contacts-Ms. Silvia Burley and Mr. Ruben Barrios were added to the list based on recommendations from District 6 Native American Coordinator Mandy Macias, to ensure compliance with both Section 106 and the California Environmental Quality Act, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of2014 (i.e. AB 52), the two additional letters were mailed out on July 10, 2018.

Responses/Results of Initial Consultation Letters

On August 10, 2018 Mr. Sylvère Valentin, received an email response from Mr. James Sarmento, Tribal Historic Preservation Officer for the Buena Vista Rancheria of Me-Wuk Indians. Mr. James Sarmento wanted to make sure that all correspondences be forwarded not solely to Mr. Mike DeSpain (Natural Resources Director) but also to him. Mr. Sarmento additionally wanted the latest copy of the Cultural Resources Study for Stanislaus 132 West Extension Improvements, stating that there may be concerns regarding the project. On August 3, 2018 Mr. Valentin responded to Mr. Sarmento letting him know that the project was in the beginning of its environmental phase and that he will be updated as the project progresses. Ms. Jennifer Lugo, Senior Environmental Planner for this project, received a phone call from Mr. Mike DeSpain on September 28, 2018, stating that he had no comments on the project at this time. On July 29, 2019, James Sarmento contacted Mandy Macias to inform her to contact Mr. DeSpain for comments. Mr. DeSpain was contacted on July 29, 2019 and he provided a comment of no issues.

On October 10, 2018, follow-up emails were sent to the individuals listed below:

- Ms. Amy Ponsetti, Environmental Manager, Tuolumne Band of Me-Wuk Indians
- Mr. Bill Leonard, Chairperson, Southern Sierra Miwuk Nation
- Mr. Charles Wilson, Chairperson, Calaveras Band of Mi-Wuk Indians
- Ms. Debra Grimes, Cultural Resource Specialist, Calaveras Band of Mi-Wuk Indians
- Ms. Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe
- Ms. Kerri Vera, Environmental Manager, Tule River Indian Tribe
- Mr. Kevin Day, Chairperson, Tuolumne Band of Me-Wuk Indians.
- Mr. Neil Peyron, Chairperrson, Tule River Indian Tribe
- Ms. Silvia Burley, Chairperson, California Valley Miwok Tribe
- Mr. Ruben Barrios, Chairperson, Santa Rosa Rancheria Tachi Yokuts

These included individuals had not responded to the previous letters mailed on July 17, 2018. As of November 2020, no comments were received. Native American Section 106 consultation is ongoing. Changes or modifications to the project limits resulting in additional studies or impacts will require additional consultation with tribal representatives and interested individuals. A copy of the cultural reports was included for tribal review in accordance with 36 Code of Federal Regulations Part 800.11.

<u>California State Historic Preservation Officer</u>

The State Historic Preservation Officer coordination begun on March 19, 2020 with a request by Caltrans for concurrence with the Historic Property Survey Report which documented the findings of the Archaeological Survey Report and Historical Resource Evaluation Report. Caltrans requested concurrence with the ineligibility of ten properties and notified the State Historic Preservation Officer that Caltrans would be producing a Finding of No Adverse Effect to address impacts from the project to the Butler Ditch.

State Historic Preservation Officer concurred with Caltrans' initial findings on April 22, 2020. Following the State Historic Preservation Officer's concurrence, Caltrans submitted the Finding of No Adverse Effect to the Cultural Studies Office at Caltrans Headquarters on May 5, 2020 for their review. After 15 days of review the Finding of No Adverse Effect was sent to the State Historic Preservation Officer for their concurrence on May 18, 2020. A Finding of No Adverse Impact concurrence from the State Historic Preservation Office was received on June 30, 2020. The correspondence and documentation from the State Historic Preservation Officer can be found in Volume 3.

The following consultation took place for biological issues:

California Regional Water Quality Control Board

In response to the State Route 132 Dakota to Gate Road Notice of Preparation in September 26,2018, the California Regional Water Control Board send a letter dated October 18, 2018 discussing potential effects to water quality that should be addressed in the environmental document.

Regional Water Quality Control Boards (RWQCB) administers the certification program in California. The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Porter-Cologne Water Quality Control Act: This regulatory law is becoming more prominent on projects involving impacts to isolated waters of the State (non-404/401 waters). The Regional Water Quality Control Boards is increasingly requiring Waste Discharge Requirement (WDR) permits for impacts to waters of the State. Caltrans will consult with Regional Water Quality Control Board for 401 permits expected to impact to wetlands and Waters of the State.

Caltrans continues to coordinate with the Central Valley Regional Water Quality Control Board concerning any groundwater contamination.

National Oceanic and Atmospheric Administrations

Preparation of the State Route 132 Natural Environmental Study required accessing the National Oceanic and Atmospheric Administration Fisheries

online species list mapper. The following online access for list of threatened and endangered species with the potential to occur in Stanislaus County

July 2, 2018- Ms. Baker obtained official species lists from the National Oceanic and Atmospheric Administration Fisheries online species list mapper website

December 14, 2019-Updated species lists were obtained from the National Oceanic and Atmospheric Administration Fisheries online species list mapper

April 13, 2020-Updated species lists were obtained from the National Oceanic and Atmospheric Administration Fisheries online species list mapper

U.S. Fish and Wildlife Service

Preparation of the State Route 132 Natural Environmental Study required accessing the U.S. Fish and Wildlife Service online species list of threatened and endangered species with the potential to occur in Stanislaus County.

February 26, 2015-Caltrans biologist, Kristin Baker obtained a species list for the project quadrangles from U.S. Fish and Wildlife Service Sacramento Fish and Wildlife Office

March 5, 2019-Ms. Baker submitted a request for approval, via email, to U.S. Fish and Wildlife Service Biologist/Recovery Permit Coordinator, Sarah Markegard to conduct wet season survey for fairy shrimp within the Biological Study Area for the proposed project.

March 13, 2019-Ms. Baker submitted a revised request for approval, via email, to U.S. Fish and Wildlife Service Biologist/ Recovery Permit coordinator, Sarah Markegard to conduct modified wet season survey for fairy shrimp within the Biological Study Area for the proposed project.

March 14, 2019-Ms. Markegard provided Ms. Baker with approval, via email, to conduct wet season fairy shrimp survey in the Biological Study Area for the proposed project.

December 14, 2019-Updated species lists were obtained from U.S. Fish and Wildlife Service S Information for Planning and Consultation website April 13, 2020-Updated species lists were obtained from and U.S. Fish and Wildlife Service Information for Planning and Consultation website

July 2, 2018-Ms. Baker obtained official species lists from the National Oceanic and Atmospheric Administration Fisheries online species list mapper website and U.S. Fish and Wildlife Service Information for Planning and Consultation website.

March 2, 2021: Ms. Baker emailed U.S. Fish and Wildlife Service Caltrans Liaison, Jennifer Schofield to discuss the project and the potential of project related impacts to California tiger salamander, vernal pool fairy shrimp, Critical Habitat for two fairy shrimp species and to help determine the appropriate consultation strategy.

Consultation with United States Fish and Wildlife Service under Section 7 of the Endangered Species Act will be initiated, and Caltrans will submit a Biological Assessment for an anticipated Letter of Concurrence for California tiger salamander and vernal pool fairy shrimp under the project's current way.

U.S. Army Corps of Engineers

Caltrans staff will coordinate and acquire a Jurisdictional Determination from the Army Corps of Engineers and will obtain an Individual 404 impacts to wetlands and other waters of the United States.

Chapter 5 List of Preparers

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

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Sylvère CM Valentin, Associate Environmental Planner (Arch). M.A., Anthropology, Forensic Anthropology Certificate, California State University, Los Angeles; B.A., Business Administration, Minor Asian Pacific Studies, Loyola Marymount University; 20 years of experience in California archaeology and cultural resource management. Contribution: Archaeological Survey Report, Historical Resources Evaluation Report and Historic Property Survey Report.

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Brian Wickstrom, Associate Environmental Planner (Arch). M.A., Special Studies: Cultural Resources Management, Sonoma State University; more than 31 years of cultural resource experience. Contribution: Archaeological Survey Report and Historical Resources Evaluation Report.

Divine Yang, Environmental Planner. B.S., Pharmaceutical Chemistry, University of California, Davis; 1 year of environmental planning experience. Contribution: *Community Impact Assessment* (August 2020).

Chapter 6 Distribution List

The draft environmental impact report/environmental assessment is distributing to the following agencies, elected officials, service providers, and utility companies.

Federal Agencies

U.S. Army Corps of Engineers, Regulatory Division, 1325 J Street, Room 1480 Sacramento, CA 95814

U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825-1846

USDA-Natural Resources Conservation Service, NRI State Resource Inventory Coordinator, 430 G Street Davis, CA 95616

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

Federal Highway Administration, Division Administrator, Vincent Mammano

650 Capitol Mall, Suite 4-100, Sacramento, CA 95814

Native American Heritage Commission, 1550 Harbor Boulevard, Suite 100, West Sacramento, CA 95691

State Agencies

State Clearinghouse Office of Planning and Research, 1400 10th Street Sacramento, CA 95814-5502

California Highway Patrol, Central Division, 4030 Kiernan Avenue, Modesto, CA 95356

California Department of Toxic Substances Control, 8800 Cal Center Drive, Sacramento, CA 95826

Central Valley Regional Water Quality Control Board, 11020 Sun Center Drive, Suite 200, Rancho Cordova, CA 95670

California Department of Fish and Wildlife, 1234 East Shaw Avenue, Suite 206, Fresno, CA 93710

California Transportation Commission, 1120 N Street, Room 2221, MS-52, Sacramento, CA 95814

California Public Utilities Commission, 770 L Street, Suite 1050, Sacramento, CA 95814

California State Water Resources Control Board Division of Water Quality, P.O. Box 100, Sacramento, CA 95812

County/Regional Agencies

San Joaquin Valley Air Pollution Control District, North Region, 4800 Enterprise Way, Modesto, CA 95356

Stanislaus County Emergency Services, 3705 Oakdale Road, Modesto, CA 95357

Chief of Police Galen Carroll, Modesto Police Department, 600 10th Street, Modesto, CA 95354

Stanislaus County Environmental Resources, Hazardous Materials Division, 3800 Cornucopia Way, Suite C, Modesto, Ca 95358

Sheriff-Coroner Jeff Dirkse, Stanislaus County Sheriff's Department, 939 Oakdale Road, Modesto, CA 95355

Modesto Fire Department Station 2, 420 Chicago Avenue, Modesto, CA 95351

Bill Sandhu, Director of Public Works, City of Modesto, P.O. Box 642, Modesto, CA 95353

Elected Officials

United States Senate, Kamala Harris, 2500 Tulare Street, Suite 5290, Fresno, CA 93721

United States Senate, Dianne Feinstein, 2500 Tulare Street, Suite 4290, Fresno, CA 93721

United States Congress, Josh Harder, 131 Cannon House Office Building, Washington D. C., 20515

California State Senate, Anna M. Caballero, 1640 N Street, Suite 210, Merced, CA 95340

California State Senate, Cathleen Galgiani, State Capital, Room 5097, Sacramento, CA 95814

California State Assembly, Adam C. Gray, 1010 Tenth Street, Suite 5800, Modesto, CA 95354

Secretary of the Interior, David Bernhardt, 1849 C Street, N.W., Washington, DC 20240

Mayor, City of Modesto, Ted Brandvoid, 1010 10thh St. Suite 6200, Modesto, CA 95354

Modesto Planning Commission, Ameet Birring, 1010 10th Street, Suite 3300, Modesto, CA 95354

Modesto Planning Commission, Carmen Morad, 1010 10th Street, Suite 3300, Modesto, CA 95354

Modesto Planning Commission, Roger Shanks, 1010 10th Street, Suite 3300, Modesto, CA 95354

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Stanislaus County Supervisor, Terry Withrow, 1010 10th Street, Suite 6500, Modesto, CA 95354

Stanislaus County Supervisor, Kristin Olsen, 1010 10th Street, Suite 6500, Modesto, CA 95354

Libraries

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Tribes

Tuolumne Band of Me-Wuk Indians, Amy Ponsetti, Environmental Manager, P.O. Box 699, Tuolumne, CA 95379

Southern Sierra Mi-Wuk Nation, Bill Leonard, Chairperson, P.O. Box 186, Mariposa, CA 95338

Calaveras Band of Mi-Wuk Indians, Charles Wilson, Chairperson, P.O. Box 899, West Point, CA 95255

Calaveras Band of Mi-Wuk Indians, Debra Grimes, Cultural Resource Specialist, P.O. Box 899, West Point, CA 95255

North Valley Yokuts Tribe, Katherine Erolinda Perez, P.O. Box 717, Linden, CA 95236

Tule River Indian Tribe, Kerri Vera, Environmental Manager, P.O. Box 589, Porterville, CA 93258

Tuolumne Band of Me-Wuk Indians, Kevin Day, Chairperson, P.O Box 699, Tuolumne, CA 95379

Tule River Indian Tribe, Neil Peyron, Chairperson, P.O. Box 589, Porterville, CA 93258

Buena Vista Rancheria, Mike DeSpain, Director, 1418 20th Street, Suite 2000, Sacramento, CA 95811

Buena Vista Rancheria of Me-Wuk Indians, James Sarmento, Tribal Historic Preservation Officer, 1418 20th Street, Suite 200, Sacramento, CA 95811

Utilities

Water Service, City of Modesto, 1010 10th Street, Suite 2100, Modesto, CA 95354

Modesto Irrigation District, 1231 11th Street, Modesto, CA 95351

Wastewater

City of Modesto, Wastewater Division Administration, 1221 Sutter Avenue, Modesto, CA 95351

Gas and Electric

Modesto Irrigation District, 1231 11th Street, Modesto, CA 95351

Pacific Gas and Electric, 226 East Yosemite Avenue, Manteca, CA 95336

Telecommunications

AT&T, 3900 Sisk Road, Suite E1, Modesto, CA 95356

Comcast, 3055 Comcast Place, Livermore, CA 94551

Level 3 Communications, 1124 13th Street, Modesto, CA 95354

Sprint, 330 Commerce, Suite 100, Irvine, CA 92606

Appendix A Draft Section 4(f) De Minimis

Introduction

This section of the document discusses *de minimis* impact determinations under Section 4(f). Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This amendment provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. The Federal Highway Administration's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the Department pursuant to 23 USC 326 and 327, including *de minimis* impact determinations, 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 is one historic property and a wildlife refuge within the project study area. There is no Section 4(f) use for the wildlife refuge, but there is one for the historic property. The wildlife refuge will be discussed in the Resources Evaluated Relative to the Requirement of Section 4(f) section.

Historic Properties

Caltrans' architectural historian formally evaluated one historic-era property that was within the architectural Area of Potential Effects. Butler Ditch is a contributor to and a character-defining feature of the Modesto Irrigation District and its role in developing agriculture in the San Joaquin Valley in the late 1800s/early 1900s.

Butler Ditch is being considered eligible by Caltrans for inclusion in the National Register of Historic Places at the federal and local levels under Criterion A (significant contribution) for purposes of the project only as a key component of the Modesto Irrigation District. It is also considered a historical resource for the purposes of the California Environmental Quality Act.

Build Alternative 1 would include two new at-grade crossings at post miles R6.26 and R7.82. A pipeline or a box culvert would be built on both crossings. The crossing at post mile R6.26 would be about 250 feet long; the crossing at post mile R7.82 would be about 300 feet long.

Less than 0.025 percent of Butler Ditch and less than 0.0005 percent of the Modesto Irrigation District would be enclosed.

Build Alternative 2 would include an elevated crossing on new alignment at post mile R6.74 and a new at-grade crossing on new alignment at post mile R7.82. A new pipeline or box culvert would be built on both crossings. About 2,300 feet of an open canal would be piped or placed through a box culvert at post mile R6.74. Another 300 feet of an open canal would be piped or placed through a box culvert at post mile R7.82.

Exactly 0.11 percent of Butler Ditch and 0.0025 percent of the Modesto Irrigation District would be enclosed.

Neither Alternative 1 nor 2 would diminish the historic property's integrity of design, workmanship, materials, location, and association. The, new crossings for two of the four Build Alternatives would physically change the Butler Ditch, which is a contributing feature of the Modesto Irrigation District. The new crossing over Butler Ditch would diminish the integrity of the setting and feeling by introducing audible and visual elements. However, other segments of the waterways outside the project area would keep their integrity of setting and convey the agricultural feeling of the waterway during the period of significance. Diminishing the integrity of the setting at the new crossings would not be enough to cause an adverse effect to the Modesto Irrigation District; the district would keep enough integrity necessary to convey its historic significance. The project is not expected to adversely affect the Merced Irrigation District under Section 106 of the National Historic Preservation Act.

Based on the "no adverse effect" determination under Section 106, Caltrans has determined that the use of the historic property as a de minimis finding under the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy of Users Section 6009 Section 4(f) provisions would apply to Butler Ditch in the following manner:

- Two of the Build Alternatives cannot avoid crossing Butler Ditch because the canal flows across the project corridor.
- Proposed crossings would not diminish the integrity of the structure as a contributor to and character-defining feature of the Modesto Irrigation District because they would not change the canals' use or diminish the integrity of the design materials and workmanship of the historic structure. The crossings would not change the canals' function as a bulk conveying system that distributes irrigation water to farmers, which is a defining feature for eligibility.
- All changes to the banks and bed of Butler Ditch would be completed in a manner that would not adversely affect the integrity of the historic property.

- A Finding of No Adverse Effect concurrence from the State Historic Preservation Officer was received on June 26, 2020.
- Caltrans submitted a letter to the State Historic Preservation Officer on May 5, 2020, notifying the agency of its intent to adopt a de minimis impact finding.

Measures to Minimize Harm

To ensure that project activities do not change and result in an adverse effect, Caltrans will ensure that a Caltrans Principal Architectural Historian will review construction plans as developed and monitor project construction activities. Should any significant changes be made to the construction plans or during construction activities that have the potential to impact the Modesto Irrigation District or any contributing features in an adverse manner, the State Historic Preservation Officer will be notified immediately and additional documentation, as appropriate, will be completed.

Resources Evaluated Relative to the Requirement of Section 4(f)

There are historic properties protected by Section 4(f) of the Department of Transportation Act of 1966 within the project vicinity. However, this project will not "use" those properties as defined by Section 4(f). Please see Appendix A under the heading "Resources Evaluated Relative to the Requirements of Section 4(f)" for additional details.

This section of the document discusses parks, recreation facilities, wildlife refuges, and historic properties found within or next to the project area; they do not trigger Section 4(f) protection for the following reasons:

- They are not publicly owned.
- They are not open to the public.
- They are not eligible historic properties.
- The project does not permanently use the property and does not hinder the preservation of the property.
- The proximity effects do not result in constructive use.

<u>San Joaquin River National Wildlife Refuge</u>

At the western end of the project (from post miles 4.5 to 5.5) is property that is currently under easement with the U.S. Fish and Wildlife Service's San Joaquin River National Wildlife Refuge. Permanent easements are eligible for Section 4(f) protection.

The San Joaquin River National Wildlife Refuge is a 7,000-acre wildlife refuge in Stanislaus County. It covers three major rivers—Tuolumne, Stanislaus, and San Joaquin. It was created to protect and manage Aleutian cackling goose

habitat; it is now managed to protect federally endangered species, including riparian brush rabbit and migratory birds, such as the Great Blue Heron. It also provides opportunities for hiking and wildlife viewing. The primary hiking trails, the Pelican Nature Trail, is on the other side of the San Joaquin River, well away from the project area. There is also a nature viewing platform off of Beckwith Road. This is also not within the project area.

Within the limits of the San Joaquin River National Wildlife Refuge, the project would overlay the roadway and widen the shoulders of State Route 132 (Maze Boulevard), which is all within Caltrans right-of-way. The project would repave the roadway and widen the shoulders, it would have no impact on access to the park. The project would not require a right-of-way or temporary construction easements within the refuge, thus there is no use of the resource.

Constructive Use

Constructive use of Section 4(f) resources can occur when proximity effects diminish the intended purpose of the resource. There are no expected traffic impacts in this section of the project. None of the work is expected to cause proximity noise or air quality impacts along the parts of State Route 132 that go through the easements of the San Joaquin River National Wildlife Refuge. Therefore, noise and air quality impacts would not diminish the protection of birds, hiking and wildlife, nor affect the purpose of the parks which is to preserve wildlife. Work would not affect access or recreation facilities within the refuge. There is no constructive use of the San Joaquin River National Wildlife Refuge.

The property is a Section 4(f) property, but no “use” will occur. Therefore, the provisions of Section 4(f) do not apply.

Appendix B Title VI Policy Statement

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

DEPARTMENT OF TRANSPORTATION
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Making Conservation a California Way of Life.

August 2020

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."*

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

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

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

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

Original signed by
Toks Omishakin
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, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and financial benefits, 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 Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations, and also are given a detailed explanation of the Caltrans Relocation Assistance

Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

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

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

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

RESIDENTIAL RELOCATION FINANCIAL BENEFITS

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 displace. 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 Caltrans 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 Caltrans, prior to the date of the initiation of negotiations, may qualify to receive a rent differential payment. This payment is made when Caltrans determines that the cost to rent a comparable “decent, safe, and sanitary” replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the Down Payment section

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

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

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

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 identified as real property 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 a Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from Caltrans’ 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 Avoidance, Minimization and/or Mitigation Summary

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

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

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
Farmland	2.1.3	Caltrans, County	Final Design
FARM 1: Conversion of prime and unique farmland to non-farmland uses will be mitigated by preserving an equal amount of agricultural land within the County. This would be accomplished through purchase of in-lieu credits using a 1:1 ratio by utilizing an accredited land trust (such as the California Farmland Trust) to mitigate for the permanent loss of agricultural land within Stanislaus County. This will be negotiated during the Design phase of the project. **FARM 2:** Where parcels are bisected by a segment of the proposed project, but enough usable land remains on either side of the highway to be cultivated, then access for livestock, machinery, and/or drainage shall be built where reasonable and feasible to provide access to both portions of the property so that the land is still viable for farming operations. **FARM 3:** During the project's final design phase, Caltrans would coordinate with property owners and agricultural operators to incorporate design features to maintain access and operation. **FARM 4:** The contractor would reconstruct irrigation ditches and install irrigation pipelines damaged during construction. **FARM 5:** The contractor would reimburse any damage from construction-related activities that result in the loss of crops.	2.1.3	Pending	Pending
Community Character and Cohesion	2.1.4	Caltrans	Construction
Relocations and Real Property Acquisition	2.1.5	Caltrans, County	Construction
Environmental Justice	2.1.6	Caltrans, County	Construction
EJ-1: Visual: Adverse impacts would be reduced with the implementation of measures VR-1 through VR-18 where required by project feature, as described in Section 2.1.9 Visual/Aesthetics. After the implementation of avoidance, minimization, and/or mitigation measures, visual impacts would not result in disproportionate adverse impacts on the identified environmental justice community. **EJ-2:** Relocations: Implementing measure RLC-1 in Section 2.1.5 Relocations and Real Property Acquisition would reduce disproportionate adverse impacts on the identified environmental justice community.	2.1.6	Pending	Pending

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
EJ-3: Construction: The implementation of a project Traffic Management Plan during construction would reduce disproportionate adverse impacts on minority and low-income populations. Coordination would be maintained with emergency service providers to minimize delays and ensure access to properties. Additionally, all other temporary increases in noise and equipment emissions would be reduced as described in Section 2.2.6 Noise, and Section 2.2.5 Air Quality.			
Utilities and Emergency Services	2.1.7	Caltrans	Construction
The proposed project would require the implementation of a Traffic Management Plan that would identify necessary signage and the locations of potential temporary detours. This plan would help to ensure that local access to homes and businesses, as well as bus and emergency vehicle access, is available during construction of the proposed project. The plan would specify time frames for temporary detours if needed. The plan would also specify the process for notifying residents, businesses, emergency services, and the traveling public of the construction period and any required detours	2.1.7	Pending	Pending
Visual	2.1.9	Caltrans, County	Final Design Construction
VR-1: Provided water is available, install landscape screening for nearby highway neighbors with direct visual access to the bridge overcrossing. **VR-2:** Design landscaping with drought-tolerant plant material to reflect the existing agricultural character, such as regular linear patterning to resemble orchard and row crop plantings. **VR-3:** Landscaping must be designed to block views to proposed street and bridge lighting to eliminate or reduce nighttime glare. **VR-4:** Structural side slopes should be designed with gradients no steeper than 4 to 1. Contour grading is encouraged to create a natural effect. **VR-5:** Drainage basins should be designed using contour grading to create a naturalistic effect instead of rigid or hard edges. **VR-6:** The bridge design should incorporate bridge aesthetics in the form of an architectural theme. The thematic design must reflect the strong agricultural heritage of the region. **VR-7:** Provide low-growing, drought-tolerant landscape planting and non-irrigated grasses and wildflower seeding in all outside roundabout quadrants. Each of these quadrants is proposed to have drainage basins. Therefore, landscape planting should be positioned on basin slopes or above basin slopes and above the high-water mark. Wildflower seeding is allowed inside basins. **VR-8:** Peripheral basin landscaping must reflect the existing agricultural patterning of the region.	2.1.9	Pending	Pending

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
VR-9: Provide agricultural themed vertical design features within the interior of the roundabout circle at Hart Road and Gates Road. **VR-10:** Landscape treatment within the circular roundabout interiors should be predominately hardscape elements (e.g., textured paving) or inert construction materials (e.g., rock cobble, gravel mulch, etc.) or a combination of both. On a limited basis, drought-tolerant trees, low-growing shrubs, or groundcover may be permissible. The District Landscape Architect must approve the design. **VR-11:** Accent textured paving must be added to roundabout approach medians and around the outer edges of the roundabout circles. Paving patterns must reflect the agricultural character of the region (e.g., small or medium rock cobble, old world street cobble, stamped concrete, etc.). Textured paving should strive to use earth tone color hues, typical of this area. Paving patterns and colors should match hardscaping materials proposed within roundabout interior designs. The District Landscape Architect must approve the design. **VR-12:** Where possible, design landscaping to screen direct views to project lighting from locations where there are views to facility lighting. Landscaping must not be used to screen lighting to roadway surfaces. To minimize nighttime glare, use lighting that directs illumination downward. Use lights with shields, if possible. **VR-13:** Install low-growing, non-irrigated grasses and wildflower erosion control seeding to the vegetated center median and outside shoulders. **VR-14:** Where possible, fencing should fit the visual character of the area (e.g., barbed wire), be see-through, and where feasible, low in height. **VR-15:** Landscape planting is highly warranted at both spread diamond interchanges to soften the adverse visual impacts of these two large non-visually characteristic structures. Landscape patterning should resemble the existing agricultural landscape character of the region. **VR-16:** Tree planting should be patterned after the existing orchard plantings that surround the area. This type of planting would carry on the visual rhythm, which is prolific within the area, as well as help the built environment fit in better with the existing agricultural character. **VR-17:** Low-growing, drought-tolerant landscape plantings, which may need to be planted in locations where sight distance requirements must be maintained, should also be planted with this same grid patterning to carry on the agricultural theme.			

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
VR-18: Where possible and where there is sufficient right-of-way area, build earthen berms and landscape with a low-growing, non-irrigated grass and wildflower erosion control seeding between nearby highway neighbors and the expressway to minimize negative views to the roadway.			
Cultural	2.1.10	Caltrans	Construction
Implementation of the following measures would reduce any adverse impacts caused by construction to the Butler Ditch: **CR-1:** A principal architectural historian would review construction plans as developed and monitor construction activities associated with the Modesto Irrigation District. **CR-2:** The State Historic Preservation Officer would be notified immediately if any significant changes are made to the construction plans or during construction activities that have the potential to adversely impact the Modesto Irrigation District or any of its contributors	2.1.10	Pending	Pending
Hydrology and Floodplain	2.2.1	Caltrans	Construction
Water Quality and Stormwater Runoff	2.2.2	Caltrans	Construction
HF-1: New retention basins and drainage ditches are proposed to increase the storage capacity to accommodate additional stormwater runoff. Implementation of Best Management Practices is required to address project-related impacts during construction, operation, and maintenance of the proposed project. Examples of these Best Management Practices include: Preserving Existing Terrain: Provide desirable drainage courses and effective filtration. Soil Stabilization: Scheduling, preservation of existing vegetation, slope protection, slope interrupter devices, and channelized flow. Perimeter Control: Silt fences and inlet protection.	2.2.1	Pending	Pending
Paleontology	2.2.3	Caltrans	Construction
PR-1: A Paleontological Mitigation Plan shall be prepared before construction, including all applicable excavations within the project area. Applicable excavations are defined as grading, excavation, and other subsurface ground-disturbing activities reaching and/or exceeding 3 feet deep within the project footprint. A qualified paleontologist would prepare, review, and approve this document per the guidance provided in Caltrans' Standard Environmental Reference and Caltrans' Standard Special Specification Section 14-7.04, Paleontological Resources. The Paleontological Mitigation Plan would contain the following components as specified in the Paleontological Evaluation Report: Safety component Worker Environmental Awareness Training	2.2.3	Pending	Pending

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
Schedule and Critical Path Method for completing proposed work Monitoring and Mitigation methods Recovery and Curation methods Reporting criteria **PR-2:** Implementation of Caltrans' Standard Special Specification Section 14-7.04, Paleontological Resources. Section 14-7.04 includes specifications for coordinating and working with a paleontological resources mitigation team provided by Caltrans.			
Hazardous Waste and Materials	2.2.4	Caltrans, County	Final Design, Construction
HW-1: If construction dewatering is required during project construction, the extracted groundwater would be properly contained, treated where required, and discharged per regulatory requirements. Options for groundwater discharge include obtaining a local sanitary sewer permit or a National Pollutant Discharge Elimination System permit for discharge to surface water or storm drain. **HW-2:** Per Caltrans requirements, the contractor(s) should prepare a project-specific Lead Compliance Plan (California Code of Regulations Title 8, Section 1532.1, the "Lead in Construction" standard) to minimize worker exposure to lead-impacted soil. The Lead Compliance Plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil. **HW-3:** If obvious impacted soil conditions are encountered during construction excavations, these materials should be isolated, stockpiled, and characterized to determine appropriate soil disposal options.	2.2.4	Pending	Pending
Natural Communities	2.3.1	Caltrans	Final Design, Construction, Post-Construction
NC-1: There is a likelihood that active nests in annual grassland may be detected within or near the project footprint during construction, and no-disturbance buffers would be required during the nesting season (February 1-September 30) for all Build Alternatives.	2.3.1	Pending	Pending
Wetlands and Other Waters	2.3.2	Caltrans	Construction
WL-1: A Stormwater Pollution Prevention Plan would be prepared specifically for the proposed project, which would include measures to reduce impacts to aquatic resources.	2.3.2	Pending	Pending

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
WL-2: Temporary silt fencing would be installed within the project footprint to protect aquatic resources next to the project footprint from construction activities. **WL-3:** The stockpiling of materials, equipment (including portable equipment), vehicles, and supplies (including chemicals) would be restricted to designated construction staging areas. **WL-4:** An emergency spill prevention plan would be prepared and would include measures to minimize the risk of fluids or other materials—oils, transmission and hydrologic fluids, cement, fuel—from entering waterways and wetlands. **WL-5:** The contractor would follow Best Management Practices specifically developed for the proposed project. These may include: Installation of temporary erosion features. A spill prevention plan with measures to minimize the risk of fluids or other materials used during construction (e.g., oils, transmission and hydraulic fluids, cement, fuel) from entering aquatic resources and upland habitat. Installation of measures to ensure water quality is protected. **WL-6:** Once construction is complete, all areas disturbed within the proposed right-of-way would be reseeded with native hydroseed mix. A Caltrans Standard Specification would be included in the construction contract. **WL-7:** Compensatory mitigation with a minimum of a 1 to 1 compensation ratio would be used to ensure there would be no net loss of aquatic resources.			
Plant Species	2.3.3	Caltrans	Pre-Construction
PS-1: 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, would be completed within suitable habitat in the project footprint. If Parry's rough tarplant is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, additional minimization measures may be implemented, such as duff collection, removal of the plant by hand, and replanted, reseeding with California Department of Fish and Wildlife-approved plant mix.	2.3.3	Pending	Pending
Animal Species	2.3.4	Caltrans	Final Design, Construction

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
AS-1: A pre-construction survey would be completed within suitable habitat to ensure no birds are nesting in or next to the project footprint. A total of four surveys may be conducted from February 15 to July 15 or December 1 to January 31, depending on the start of initial ground-breaking activities. **AS-2:** If an active owl burrow is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, where possible. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction. **AS-3:** If a merlin is seen within the project footprint during construction activities, a no-work buffer would be implemented until the individual leaves of its own accord. **AS-4:** If an active Modesto song sparrow nest is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, Caltrans would propose additional minimization measures in coordination with the U.S. Fish and Wildlife Service. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction.	2.3.4	Pending	Pending
Threatened and Endangered Species	2.3.5	Caltrans	Construction
TE-1: The seasonal wetland within the project footprint with the potential to contain vernal pool fairy shrimp would be designated as an environmentally sensitive area in the construction contract and protected by the installation of high-visibility fencing and silt fencing to exclude any disturbance to the feature. **TE-2:** Before construction activities, exclusion fencing would be installed in areas that are next to suitable habitat for California tiger salamanders to avoid any individuals from entering the proposed project area. **TE-3:** If a 70 percent chance or greater of rainfall is predicted within 24 hours of project activities, a qualified biologist shall survey the project footprint for the presence of migrating California tiger salamanders before the start of construction each day that rain is forecasted. No project work that could affect migrating California tiger salamanders shall occur during or within 48 hours following significant rain events, defined as 1/4 of an inch or more of rain in a 24-hour period. **TE-4:** For work conducted during the California tiger salamander migration season (November 1 to March 31), a qualified biologist would survey active work areas (including access roads) in the morning following measurable precipitation that measures less than 1/4 of an inch. Construction	2.3.5	Pending	Pending

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
may not start until the biologist has confirmed that no California tiger salamanders are in the work area. **TE-5:** Basins or trenches greater than 6 inches deep would be covered or have an escape ramp present. These would be checked daily for trapped California tiger salamanders and other wildlife. Before the basins or trenches are filled, they would be thoroughly inspected for trapped wildlife. Any pipes or culverts stored onsite must be capped to prevent any 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 would be notified. **TE-6:** Vehicle travel would 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 a 10-mile-per-hour nighttime speed limit. **TE-7:** A pre-construction survey would be completed within a suitable habitat to ensure no birds are nesting in or next to the project footprint. A total of four surveys may be conducted from February 15 to July 15 or December 1 to January 31, depending on the start of initial ground-breaking activities. **TE-8:** Pre-construction surveys would be completed within suitable habitat to ensure no birds are nesting in or next to the project footprint. If an active tricolored blackbird nest is seen, it would be avoided and designated as an environmentally sensitive area with high-visibility fencing, if possible. If avoidance is not possible, Caltrans would propose additional minimization measures in coordination with the U.S. Fish and Wildlife Service. Additionally, a special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction. **TE-9:** A protocol-level survey would be conducted before construction starts and would follow the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. If Swainson's hawks are identified within the Biological Study Area, construction activities within permitted work areas shall occur between October 1 and January 31 to reduce potential impacts to Swainson's hawk's breeding/nesting season. If construction must occur during the period from February 1 to September 30, a qualified wildlife biologist shall conduct pre-construction surveys for nesting or foraging Swainson's hawks. The timeline of the pre-construction surveys would be determined in coordination with the California Department of Fish and Wildlife for review and approval. California Department of Fish and Wildlife shall be consulted			

Minimization and/or Mitigation	EIR/EA Section Reference	Responsible Party	Timing
to establish protection measures, such as buffers until the young have fledged. Disturbance of active nests shall be avoided until it is determined that nesting is complete, and the young have fledged. **TE-10:** A special provision for migratory birds would be included in the construction contract to ensure that no potential nesting migratory birds are affected during construction, which may include, but 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.			
Invasive Species	2.3.6	Caltrans	Construction
IS-1: All areas disturbed by project construction would be reseeded with native species suitable for the project location. **IS-2:** All nonstandard special provisions would be included in the construction contract that requires construction equipment and vehicles to be cleaned before entering and exiting the project.	2.3.6	Pending	Pending
Greenhouse Gas Reduction Strategies	3.4.4	Caltrans / Contractor	Construction
The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project: Limit idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment. Construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times. 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. Provide Construction Environmental Training: Supplement existing training with information regarding methods to reduce greenhouse gas emissions related to construction. Maximize use of recycled materials (e.g., tire rubber). Balance earthwork: Reduce the need for transport of earthen materials by balancing cut and fill quantities. Reduce the need for electric lighting by using ultra-reflective sign materials that are illuminated by headlights.	3.4.4	Pending	Pending

Minimization and/or Mitigation	**EIR/EA Section Reference**	**Responsible Party**	**Timing**
Use measures that consider incorporation of Best Available Control Technology during design, construction and operation of projects to minimize greenhouse gas emissions, including but not limited to: Use energy and fuel-efficient vehicles and equipment. Deploy zero and/or near-zero emission technologies as defined by CARB. Use lighting systems that are energy efficient, such as LED technology. Use cement blended with the maximum feasible amount of fly ash or other materials that reduce greenhouse gas emissions from cement production. Incorporate design measures to reduce greenhouse gas emissions from solid waste management through solid waste reduction, recycling and reuse. Protect and plant shade trees in or near construction projects.			

Appendix E Notice of Preparation

Notice of Preparation

Notice of Preparation

To: _____ **From:** CA Dept. of Transportation

_____ 855 M Street, Suite 200

(Address)

_____ Fresno, CA 93721

(Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

CA Department of Transportation will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Jennifer Lugo, Senior Environmental Planner at the address shown above. We will need the name for a contact person in your agency.

Project Title: State Route 132 Dakota Avenue to Gates Road

Project Applicant, if any: _____

Date 9/25/18 Signature _____

Title Senior Environmental Planner

Telephone (559) 445-6172

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Notice of Preparation of a Draft Environmental Impact Report/Environmental Assessment for the State Route 132 Dakota Avenue to Gates Road Project

The California Department of Transportation (Caltrans), the Lead Agency, in cooperation with Stanislaus County, is preparing environmental documentation to address impacts associated with the construction of an access controlled facility on either the existing State Route 132 alignment or on a new alignment just north of State Route 132 in Stanislaus County. A Notice of Preparation for an Environmental Impact Report/Environmental Assessment (EIR/EA) was filed with the State Clearinghouse on September 26, 2018. An Environmental Impact Report/Environmental Assessment would provide environmental compliance documentation for construction of the project. The environmental document will be prepared as a joint document pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). As required by CEQA, Caltrans is distributing this Notice of Preparation requesting comments from responsible and trustee agencies regarding the significant environmental issues, reasonable alternatives, and reasonable mitigation measures that need to be discussed in the draft Environmental Impact Report/Environmental Assessment to address each agency's concern.

Project Location

The project is located on and near State Route 132, west of the City of Modesto, in Stanislaus County, California. It is within the west central portion of Stanislaus County, 3.1 miles east of the San Joaquin River Bridge near Gates Road/Paradise Road and two miles west of the City of Modesto near Dakota Avenue. The project is approximately seven miles long (see attached Project Vicinity Map and Project Location Map).

Purpose and Need

The project would improve mobility through western Stanislaus County connecting State Route 99 to Interstate 5; provide adequate capacity for regional movement of traffic and goods; enhance the local circulation network that would accommodate agricultural generated traffic; and provide consistency with the existing and planned local, regional, and interregional transportation facilities. The project is needed to accommodate increasing growth and traffic demands which have generated current and forecasted traffic operations deficiencies for the existing facility. Several rural driveways along the existing facility create conflict movements for the mainline traffic.

Project Description

The California Department of Transportation (Caltrans), working in cooperation with Stanislaus County, proposes to construct an access controlled facility within the western central portion of Stanislaus County, from Gates Road/Paradise Road to Dakota Avenue, post miles 4.5 to 11.7, located two miles west of the City of Modesto. This project (State Route 132 Dakota Avenue to Gates Road) would be an extension of the State Route 132 West project that is being designed on a new alignment in the City of Modesto. There are four alternatives under consideration on either the existing State Route 132 alignment or on a new alignment located north of State Route 132.

Project Alternatives
Alternative 1 – This alternative would construct a four-lane divided expressway on a new alignment north of State Route 132.
Alternative 2 – This alternative would construct a four-lane divided freeway on a new alignment north of State Route 132.
Alternative 3 – This alternative would construct a four-lane divided expressway along the existing State Route 132 alignment shifted to the north.
Alternative 4 – This alternative would construct a four-lane divided expressway along the existing State Route 132 alignment shifted to the south.
No Build – No improvements to the existing State Route 132 within the project limits.

Probable Environmental Effects
Caltrans would prepare an Environmental Impact Report/Environmental Assessment due to significant environmental impacts anticipated for the seven-mile project. Probable environmental effects are described below:

Community Impacts/Farmland/Cumulative Impacts
A Community Impact Assessment would be required for impacts to farmland, right-of-way acquisition, displaced persons/businesses, noise, and projected traffic growth in the area.

Biology
Potential impacts may occur to the tricolored blackbird, conservancy fairy shrimp, vernal pool fairy shrimp, Swainson's hawk, Valley elderberry longhorn beetle, giant garter snake, and the San Joaquin kit fox. Section 7 consultation with the U.S. Fish and Wildlife Service, coordination with California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and the Regional Water Quality Control Board will be required. It is anticipated that the project will require a Biological Assessment, Biological Opinion, and Natural Environmental Study.

Cultural Resources
Preliminary studies have shown that the project area has moderate to high sensitivity for buried archaeological deposits. A Historic Resource Evaluation Report will be required for more than 20 properties and structures within the project area. At least one resource may be determined to be eligible for the National Register of Historic Properties.

Hazardous Waste
Preliminary aerial deposited lead studies show soluble lead levels above regulatory thresholds throughout the project limits. Groundwater testing will be conducted for contaminants at a property used as an airfield for crop dusters on Gates Road. An Initial Site Assessment, Aerial Deposited Lead Study, and Preliminary Site Investigation will be conducted.

Air Quality
The project is in Stanislaus County in the San Joaquin Valley Air Basin. Stanislaus County is in non-attainment for PM2.5 and maintenance for PM10. This project is capacity-increasing and will require Interagency Consultation. An Air Quality Study Report will be required. It is also possible that a quantitative analysis would be required.

Noise
The project is a Type I project defined as a proposed Federal or Federal-aid highway projec the construction of a highway on a new location or the physical alteration of an existing high where there is either a substantial horizontal or substantial vertical alteration. Soundwalls m be proposed. A Noise Study Report is required.

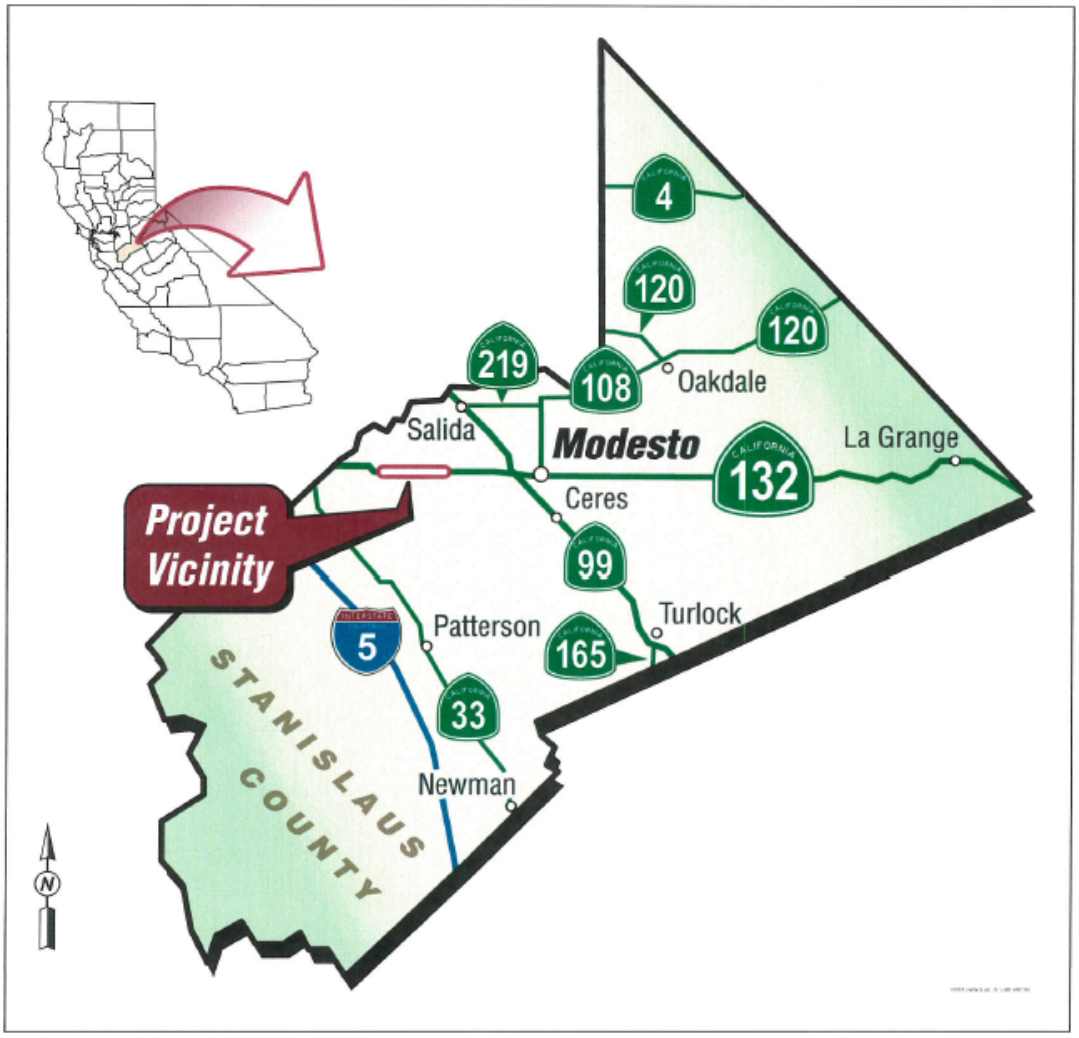
Water Quality
A Water Quality Study will be required. The project involves work off the paved road, drainag work or alterations, and work within channels, such as channel change, stream diversion, excavation, pile driving, stockpiling, culvert work, rock slope protection, etc. The project has potential to impact short-term quality in the area, however no long-term water quality impact are anticipated.

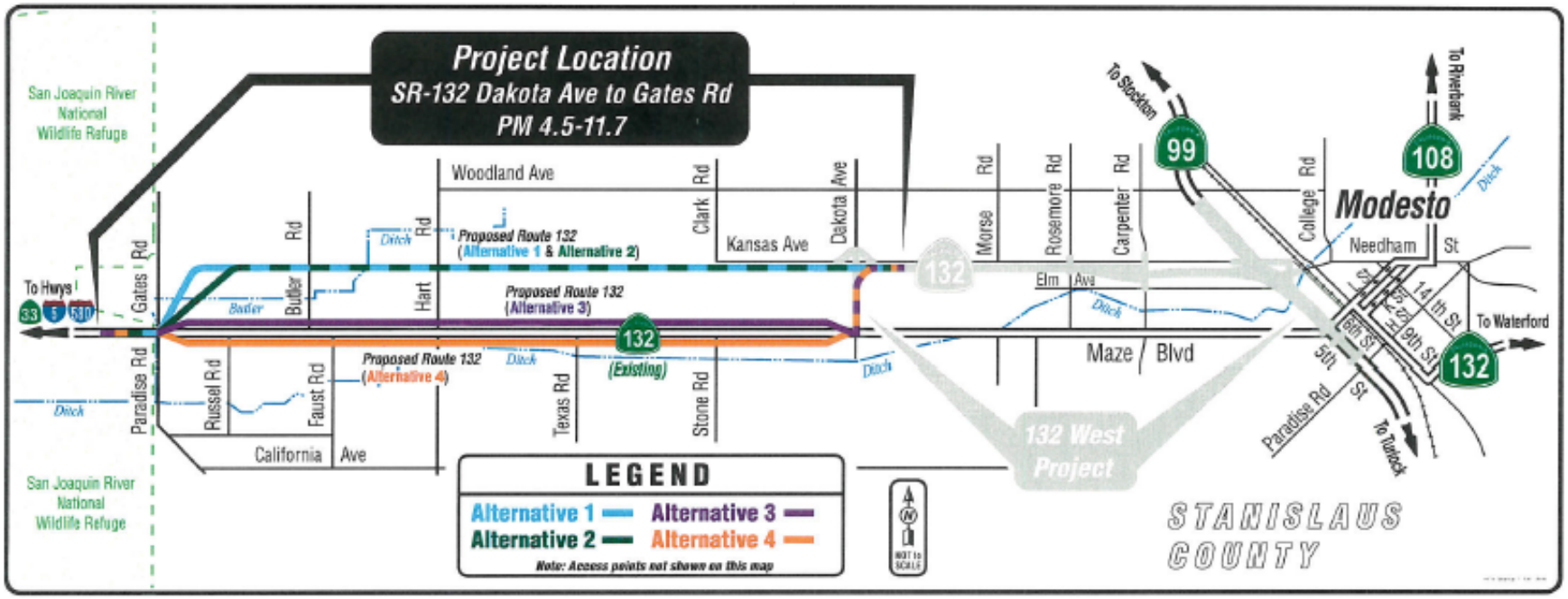
Paleontology
A Paleontological Identification Report will be required due to high sensitivity resources bein present within the project limits.

Visual Resources
A moderate/advance Visual Impact Assessment would be required due to vegetation and tre removal, the demolition of existing homes and business facilities, construction of new roadw structures, construction on a new alignment, and realignment to the current State Route 132

Floodplain
A Location Hydraulic Study will be required. The Intersection of Gates Road and Maze Boulevard abuts the floodplain. Impervious surfaces will increase that could affect the watershed areas.

Utilities
Utility relocation and construction for power sources are anticipated for this project.


4
120
120
219
108
Oakdale
Salida
Modesto
La Grange
132
Ceres
Project Vicinity
99
Turlock
5
Patterson
165
33
Newman
STANISLAUS COUNTY
N


Project Location
SR-132 Dakota Ave to Gates Rd
PM 4.5-11.7
San Joaquin River National Wildlife Refuge
To Hwys 33 5 580
Gates Rd
Paradise Rd
Russel Rd
Faust Rd
Butler Rd
Hart Rd
Clark Rd
Dakota Ave
Woodland Ave
Kansas Ave
California Ave
Texas Rd
Stone Rd
Proposed Route 132 (Alternative 1 & Alternative 2)
Proposed Route 132 (Alternative 3)
Proposed Route 132 (Alternative 4)
132 (Existing)
Ditch
Butler
Morse Rd
Rosemore Rd
Carpenter Rd
College Rd
Elm Ave
Maze Blvd
To Stockton
99
To Riverbank
108
Modesto
Needham St
14th St
9th St
6th St
5th St
Paradise Rd
To Turlock
To Waterford
132 West Project
LEGEND
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Note: Access points not shown on this map
NOT to SCALE
STANISLAUS COUNTY

Appendix F Farmland Conversion Impact Rating Report

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-81)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*		3. Date of Land Evaluation Request 3/24/20	4. Sheet 1 of 2
1. Name of Project	SR 132 Dakota Avenue to Gates Road	5. Federal Agency Involved	FHWA
2. Type of Project	Capacity Improvement Project	6. County and State	Stanislaus County, California

PART II *(To be completed by NRCS)*		1. Date Request Received by NRCS 3/24/20	2. Person Completing Form Allyson Young
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 320,784	Average Farm Size 185
5. Major Crop(s) tree crops, silage	6. Farmable Land In Government Jurisdiction Acres: 340,890 % 35	7. Amount of Farmland As Defined in FPPA Acres 406,921	% 42
8. Name Of Land Evaluation System Used CA Revised Storie Index	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 4/10/20	

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	289.93	437.15	293.36	272.15
B. Total Acres To Be Converted Indirectly, Or To Receive Services	9.89	9.06	12.28	9.85
C. Total Acres In Corridor	299.82	446.21	305.64	282
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	222	371	237	234
B. Total Acres Statewide And Local Important Farmland	12	22	3	0
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0006	0.0009	0.0006	0.0006
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	28	28	28	27
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)*	79	77	78	83

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	15	15	15	15
2. Perimeter in Nonurban Use	10	10	10	10	10
3. Percent Of Corridor Being Farmed	20	20	20	20	20
4. Protection Provided By State And Local Government	20	20	20	20	20
5. Size of Present Farm Unit Compared To Average	10	0	0	0	0
6. Creation Of Nonfarmable Farmland	25	3	5	2	2
7. Availablility Of Farm Support Services	5	5	5	5	5
8. On-Farm Investments	20	20	20	20	20
9. Effects Of Conversion On Farm Support Services	25	0	0	0	0
10. Compatibility With Existing Agricultural Use	10	0	0	0	0
TOTAL CORRIDOR ASSESSMENT POINTS	160	93	95	92	92
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	79	77	78	83
Total Corridor Assessment (From Part VI above or a local site assessment)	160	93	95	92	92
TOTAL POINTS *(Total of above 2 lines)*	260	172	172	170	175

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
			YES ☐ NO ☐

5. Reason For Selection:

Appendix G State Historic Preservation Officer Letters

State of California • Natural Resources Agency
Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*

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

April 22, 2020

VIA EMAIL

In reply refer to: FHWA_2020_0323_002

Ms. Aubrie Morlet, Branch Chief
Southern San Joaquin Cultural Resources Branch 2
Caltrans District 6
855 M Street, Suite 200
Fresno, CA 93721

Subject: Determinations of Eligibility for the Proposed State Route 132 Dakota Avenue to Gates Road Project, Stanislaus County, CA

Dear Ms. Morlet:

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

Caltrans, working in coordination with Stanislaus County, is proposing to improve SR 132 within the central portion of Stanislaus County near the City of Modesto. A new 4-lane freeway or expressway will be built along a new alignment from Gates Road/Paradise Road to Dakota Avenue. A complete description of the changes to the project and the area of potential effect boundaries are located on pages 1-2 and Attachment 1 of the HPSR.

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

- 201 Butler Road, Modesto, CA
- 543 Butler Road, Modesto, CA
- 7937 Butler Road, Modesto, CA

- 7300 Maze Boulevard, Modesto, CA
- 1088 North Hart Road, Modesto, CA
- 306-342 North Hart Road, Modesto, CA
- 6337 Maze Boulevard, Modesto, CA
- 137 Texas Road, Modesto, CA
- 801 Clark Road, Modesto, CA
- 4218 Maze Boulevard, Modesto, CA

Based on review of the submitted documentation, I concur.

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

Sincerely,

Julianne Polanco
State Historic Preservation Officer

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

June 26, 2020

VIA EMAIL

In reply refer to: FHWA_2020_0323_002

Mr. David Price, 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 the Proposed State Route (SR) 132 Dakota Avenue to Gates Road Project in Stanislaus County, CA

Dear Mr. Price:

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 (FONAE) for the proposed project.

Caltrans, working in cooperation with Stanislaus County, proposes to improve SR 132 within the central portion of Stanislaus County, 2-miles west of the city of Modesto. A new 4-lane freeway or expressway would be built along a new alignment from Gates Road/Paradise Road to Dakota Avenue (postmiles [PM] 4.5/11.7). The project would require the acquisition of new right-of-way (ROW) from adjoining parcels, consisting of 210.88 acres of agricultural land and built environment properties.

Caltrans, as part of its current identification efforts, identified one historic resource within the APE: The Butler Ditch. Caltrans evaluated and determined that the Butler contributes to the Modesto Irrigation District (MID) Historic District, if the MID in its entirety were to be formally evaluated. Caltrans, as per Section 106 PA Stipulation VIII.C.4 is assuming eligibility for the MID Historic District for purposes of the project only. The MID was assumed eligible under the National Register of Historic Places

(NRHP) Criterion A and California Register of Historical Resources (CRHR) Criterion 1 at the local level of significance. The period of significance is 1903-1955.

Caltrans has applied the criteria of adverse effect, pursuant to Stipulation X.B.2.a of the Section 106 PA and 36 CFR § 800.5(a)(1) and determined that the project will have no adverse effect on the property. The proposed construction of a new alignment and subsequent enclosure of a portion of Butler Ditch, a contributing feature to the MID Historic District, will be completed in a manner that will ensure that the character defining features of the MID Historic District will not be adversely affected.

Based on my review of the submitted documentation the finding of no adverse effect appears appropriate.

If you have any questions, please contact Natalie Lindquist at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov or Jeanette Schulz at (916) 445-7031 with e-mail at jeanette.schulz@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Appendix H Inter-Agency Consultation

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: Interagency Consultation Partners

Date: July 10, 2019
EA 10-1E280
STA-132-PM-5.5/11.5

From: Maya Hildebrand
Caltrans Central Region
Environmental Engineering Branch

Subject: Consultation on PM 10 & PM2.5 Hot-spot Conformity Assessment

Project: STA-132 Dakota Avenue to Gates Road Capacity Improvement Project

The California Department of Transportation is providing a PM10 & PM 2.5 Hot-spot Conformity assessment for the State Route 132 Dakota Avenue to Gates Road project for Interagency Consultation. It is requested that the Interagency Consultation Partners concur that this project is not a "Project of Air Quality Concern" (POAQC). Comments on the assessment are due on July 24, 2019. An interagency conference call will be held upon request.

Project Description:

This project is located on State Route (SR) 132 in Stanislaus County near the City of Modesto. SR-132 will be improved by converting the existing two-lane conventional highway to a four-lane facility between PM 5.5 and 11.5 utilizing either the existing alignment or constructing a new alignment.

SR 132 is a major truck route between Interstate 580 (I-580) and State Route (SR) 99, as well as a commuter route between the City of Modesto, surrounding communities, and the Bay Area. This section of SR-132 between I-580 near Tracy and SR-99 in Modesto is an interregional route of statewide significance which does not have the capacity to handle existing and projected traffic growth.

There are four alternatives to this project. Please see attached files to view the alternatives.

Alternative 1: Construct a four-lane divided expressway on a new alignment north of SR-132.

Alternative 2: Construct a four-lane divided freeway on a new alignment north of SR-132.

Alternative 3: Construct a four-lane divided expressway north of the existing SR-132 alignment.

Alternative 4: Construct a four-lane divided expressway south of the existing SR-132 alignment.

Please see the attached files to see visuals of project alternatives.

PM 10 and PM 2.5 Conformity Assessment:

The Dakota Avenue to Gates Road project is in the San Joaquin Valley, which is in non-attainment for PM 2.5 and attainment/maintenance for PM 10. According to the Environmental Protection Agency (EPA) Transportation Conformity Guidance, PM2.5 hot-spot analysis is required for Projects of Air Quality Concern (POAQC) in non-attainment and maintenance areas (40CFR 93.123 (b) (1)). Projects that are exempt or not POAQC do not require hot-spot analysis.

According to the Environmental Protection Agency Transportation Conformity Guidance (Final Rule), March 10, 2006, the following are the projects that are NOT of Air Quality Concern:

- A new or expanded highway project that does not involve or increase a significant number of diesel vehicles;
- Intersection channelization or interchange reconfiguration projects involving turn lanes or other operational improvements;
- A new compressed natural gas bus terminal.

Caltrans has determined that the project falls under the category of "a new or expanded highway project that does not cause a significant increase in the number of diesel vehicles".

Traffic Data:

The Caltrans Traffic Forecasting and Technical Units have provided us with estimated ADT (Annual Daily Traffic) for the Existing year 2018, Open to Traffic year 2026, and Design Year 2046.

SR-132 Build/No Build ADTs for Alternative 1

New 4-Lane Divided Expressway				
	Build	***Build Truck (10%)***	***No Build***	***No Build Truck (12%)***
Existing	N/A	N/A	13,300	1,596
2026	15,000	1,500	15,000	1,800
2046	21,000	2,100	19,500	2,340

Source: Caltrans Travel Forecasting

SR-132 Build/No Build ADTs for Alternative 2

New 4-Lane Divided Freeway				
	Build	***Build Truck (13%)***	***No Build***	***No Build Truck (12%)***
Existing	N/A	N/A	13,300	1,596
2026	19,500	2,535	15,000	1,800
2046	25,000	3,250	19,500	2,340

Source: Caltrans Travel Forecasting

SR-132 Build/No Build ADTs for Alternative 3

North of Existing- Construct 4-Lane Divided Expressway				
	Build	***Build Truck (13%)***	***No Build***	***No Build Truck (12%)***
Existing	N/A	N/A	13,300	1,596
2026	21,500	2,795	15,000	1,800
2046	28,500	3,705	19,500	2,340

Source: Caltrans Travel Forecasting

SR-132 Build/No Build ADTs for Alternative 4

South of Existing – Construct 4-Lane Divided Expressway				
	Build	***Build Truck (14%)***	***No Build***	***No Build Truck (12%)***
Existing	N/A	N/A	13,300	1,330
2026	21,500	2,150	15,000	1,500
2046	28,500	2,850	19,500	1,950

Source: Caltrans Travel Forecasting

Air Quality Monitoring Data

The nearest air quality monitor is located at 814 14th Street, Modesto, California [37°38'31.8"N 120°59'39.2"W]. It is approximately 4.5 miles northwest of the western project boundary.

The PM 2.5 national annual standard is exceeded when the National Annual Average is greater than 15 micrograms per cubic meter and violated when the National Annual Standard Design Value is greater than 15 micrograms per cubic meter ($\mu m/m^3$). According to CARB's iADAM website, both the National Annual Average and the National Annual Average Design Value were last exceeded 11 years ago, in 2008. Since then, neither type of incident has occurred.

For the years 2010 through 2017, national annual standard readings have ranged from 11.1 $\mu m/m^3$ in 2016 to 14.7 $\mu m/m^3$ in 2011. There is no national annual standard for 2015 due to insufficient data.

The PM 10 national annual average is the average of the year's quarterly averages of standard conditions. The standards were revoked on December 17, 2006. The revoked standard states that the national annual standard was exceeded when the average of three consecutive annual averages were greater than 50 micrograms per cubic meter ($\mu m/m^3$).

There have been no exceedances of the national annual standard since 1994, the earliest reading available on the CARB iADAM site. The readings have ranged from 21.6 $\mu m/m^3$ in 2010 to a maximum 36.6 $\mu m/m^3$ in 2002.

Overall, PM 2.5 and PM 10 have been remained below their respective thresholds since 2010. This trend is expected to continue, as technological innovations in automobiles and fuel are constantly improving.

Build/No Build Volume

For each alternative, the projected volumes for Open to Traffic Year 2026 and Design Year 2046 do not represent a significant increase in diesel traffic when comparing Build vs. No Build scenarios.

The car and the truck volumes for the Open to Traffic and Design Years will not be significantly changed by this project when comparing the Build vs. no Build, and therefore do not meet the criteria to be considered a POAQC.

The project will open to traffic in 2025.

Public Involvement Process:

The NEPA document for this project is Complex EA (23 USC 327). A Public Information Meeting was held on October 10, 2018. A Public Hearing will be held during the circulation period of the Draft Environmental Document.

If you have any questions, please contact me at (559) 445-6426 or by email at maya.hildebrand@dot.ca.gov.

Hildebrand, Maya@DOT

From: OConnor, Karina <OConnor.Karina@epa.gov>
Sent: Friday, September 6, 2019 8:50 AM
To: Hildebrand, Maya@DOT
Subject: RE: IAC for Caltrans project 10-1E280 Dakota to Gates Avenue

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

Thanks, Karina

Karina OConnor
Air Planning Office
US EPA Region 9 (AIR-2)
75 Hawthorne St.
San Francisco, CA 94105
(775) 434-8176
oconnor.karina@epa.gov

From: Hildebrand, Maya@DOT <Maya.Hildebrand@dot.ca.gov>
Sent: Thursday, September 5, 2019 3:11 PM
To: OConnor, Karina <OConnor.Karina@epa.gov>
Cc: OConnor, Karina <OConnor.Karina@epa.gov>
Subject: IAC for Caltrans project 10-1E280 Dakota to Gates Avenue

Hi Karina,
Here is the original email and the IAC letter sent for this project. Please let me know if you need further info.
I had trouble sending the project alternative pictures earlier, so I'm sending those separately.
****
Hello Interagency Consultation Partners,

The California Department of Transportation (Caltrans) is providing a PM 2.5 and PM 10 Hot-spot Conformity Assessment memo for interagency consultation. The project is the conversion of the existing State Route (SR)132 in Stanislaus County. It is requested that the Interagency Consultation Partners concur that this project is not a "Project of Air Quality Concern" (POAQC). Comments on the assessment are due on August 1, 2019. An interagency conference call will be held upon request.

An interagency conference call will be held upon request**.** The NEPA document for this project is Complex EA (23 USC 327). A Public Information Meeting was held on October 10, 2018. A Public Hearing will be held during the circulation period of the Draft Environmental Document. FHWA and EPA concurrence is requested.

Please contact me if you have questions regarding this email or the attached memo.
****
Thank you!
Maya Hildebrand Garcia
Associate Environmental Planner/Air Quality Coordinator

Environmental Engineering Branch
Caltrans Central Region
559.445.6426

Hildebrand, Maya@DOT

From:	Vaughn, Joseph (FHWA) <Joseph.Vaughn@dot.gov>
Sent:	Monday, September 16, 2019 11:38 AM
To:	Hildebrand, Maya@DOT
Cc:	Romero, Ken J@DOT; Karina O'Connor (oconnor.karina@epa.gov)
Subject:	RE: PM 2.5 and PM 10 Hotspot for Caltrans project SR-132 Dakota Avenue to Gates Road

Sorry for the delay—thought I had responded to this one. FHWA concurs that this is not a project of air quality concern. Thanks

Joseph Vaughn
Environmental Specialist
FHWA, CA Division
(916) 498-5346

From: Hildebrand, Maya@DOT [mailto:Maya.Hildebrand@dot.ca.gov]
Sent: Monday, September 16, 2019 9:37 AM
To: Vaughn, Joseph (FHWA) <Joseph.Vaughn@dot.gov>
Subject: PM 2.5 and PM 10 Hotspot for Caltrans project SR-132 Dakota Avenue to Gates Road

Hi Joseph,
Per your inquiry on August 12 regarding the above -named project, we received concurrence from EPA on September 6 and are awaiting FHWA's decision.

Thank you,
Maya Hildebrand Garcia
Associate Environmental Planner/Air Quality Coordinator
Environmental Engineering Branch
Caltrans Central Region
559.445.6426

Appendix I Regional Transportation Plan and Transportation Improvement Program Listings

2019 FTIP
SUMMARY OF CHANGES

Agency: Various
Amendment Type: Formal Amendment - Type 5
Amendment #: 9

Project Identification				Funding										
Existing or New Project	CTIPS ID#	Sponsor Agency	Project Title	Prior Total Project Cost	Current Total Project Cost	Prior FFY	Prior CTIPS Amount	Current FFY	Current CTIPS Amount	Fund Source	Phase	Total Project Change	Total Project % Increase/ Decrease	COMMENTS
Existing	21400000680	Various Agencies	Grouped Projects for Pavement resurfacing and/or rehabilitation on the State Highway System - Highway Maintenance (Projects are consistent with 40 CFR 93.126, Exempt Tables 2 and Table 3 categories - Pavement resurfacing and/or rehabilitation.	$10,643,000	$15,346,000	19/20	$0	19/20	$4,703,000	HM	CON	$4,703,000	44.19%	Updated Highway Maintenance Grouped Listing per Caltrans Update
Existing	21400000628	City of Turlock	Preventative Maintenance (Preventative Maintenance on transit vehicles and transit facilities. (Using Toll Credits))	$1,150,000	$550,000	19/20	$0	19/20	$4,703,000	FTA 5307	PE	-$600,000	-52.17%	Programmed FTA 5307 and Local Match Funds in the 2019 FTIP. Deleted prior year funding amounts.
						19/20	$0	19/20	$4,703,000	Local Match				
						20/21	$0	20/21	$4,703,000	FTA 5307	PE			
						20/21	$0	20/21	$4,703,000	Local Match				
New Project	21400000711	City of Turlock	Transit Operations Facility (Transit Operations Facility (Design and construction of Transit Operations Facility for parking and fueling on S. Walnut Road in the City of Turlock))	$0	$1,409,470	18/19	$0	18/19	$409,470	Other State Transit	PE and ROW	$1,409,470	N/A	New Project
						20/21	$0	20/21	$980,000	FTA 5307	ROW			
						20/21	$0	20/21	$40,000	Local Match				
New Project	21400000712	Stanislaus County	SR132 Extension Dakota to Gates (SR132 Extension Dakota to Gates (Using Toll Credits))	$0	$10,000	21/22	$0	21/22	$10,000	STBGP	PE	$10,000	N/A	New Project

Stanislaus Council of Governments - Federal Transportation Improvement Program
(Dollars in Whole)
State Highway System

DIST: 10 CT PROJECT ID: COUNTY: Stanislaus County	PPNO: EA: CTIPS ID: 214-0000-0712 MPO ID.: STANCOG ROUTE: PM:	TITLE (DESCRIPTION): SR132 Extension Dakota to Gates (SR132 Extension Dakota to Gates (Using Toll Credits))	MPO Aprv: State Aprv: Federal Aprv: EPA TABLE II or III EXEMPT CATEGORY

IMPLEMENTING AGENCY: Stanislaus County
PROJECT MANAGER: Theron Roschen PHONE: (209) 525-4194 EMAIL: roschent@stancounty.com

PROJECT VERSION HISTORY (Printed Version is Shaded) *(Dollars in whole)*

Version	Status	Date	Updated By	Change Reason	Amend No.	Prog Con	Prog RW	PE
1	Active	07/24/2019	DTRUJILL	Amendment - New Project	9			10,000

* RSTP -		PRIOR	18-19	19-20	20-21	21-22	22-23	23-24	BEYOND	TOTAL
* Fund Source 1 of 1	PE					10,000				10,000
* Fund Type: STP Local	RW									
	CON									
* Funding Agency: Stanislaus County	Total:					10,000				10,000

Comments:
******** Version 1 - 07/24/2019 ********

	STANCOG 2018 Regional Transportation Plan												
	Tier I Roadway Projects												
	Project Details							Purpose / Need (P = Primary Purpose / X = Need)					
ID	Jurisdiction	Location	Project Limits	Description	Total Cost	Open to Traffic	Funding Source	System Preserv.	Capacity Enhance.	Safety	Oper.	Alt. Mode	Complete Streets
M63	Modesto	Various Locations	Various Locations	Various intersection Improvements	$75,000,000	2020-2042	CMAQ, Measure L			X	X		
M79	Modesto	SR 99	SR 99/Pelandale Interchange (Phase 2)	Widen Sisk Rd/Pelandale Intersection to the south-west corner of the intersection, construct a second left-turn lane from EB Pelandale to NB Sisk Rd, a third dedicated through lane on EB Pelandale, and a dedicated right-turn lane from EB Pelandale to SB Sisk Rd.	$5,000,000	2025	STIP, CFF		X				
M80	Modesto	SR 99	SR 99/Briggsmore Interchange	PE & ROW (reconstruction to 8 lane interchange)	$20,000,000	2020	STIP, Local		X				
M81	Modesto	SR 99	Standiford/Beckwith Interchange	PE & ROW (reconstruction to 8 lane interchange)	$20,000,000	2020	STIP, Local, CFF		X				
M82	Modesto	132	State Route 99 to Dakota Ave Phase 1 (2-lane expressway)	Construct a two-lane expressway from N. Dakota Ave to the Needham St. Overcrossing. (Phase 1 of ultimate build-out of SR132 West Freeway/Expressway Project) (Reference: 2014 RTP Project ID - RE01).	$100,000,000	2020	L, SB 1, STIP, CMAQ, STBG		X	X	X		
M83	Modesto	132	State Route 99 to Dakota Ave (Phase 2 Ultimate 4 lane facility with SR-99 connections)	Construct a four lane freeway from N. Dakota Ave to the Needham St. Overcrossing.	$160,000,000	2028	L, SB 1, STIP, CMAQ, STBG		X	X	X		
M84	Modesto	SR 99	Briggsmore Interchange	Reconstruct to 8 Lane Interchange	$98,679,400	2026	L, SB 1, STIP, CMAQ, STBG		X	X	X		
M85	Modesto	SR-99	Standiford/Beckwith Interchange	Reconstruct to 8 Lane Interchange	$100,000,000	2035	L, SB 1, STIP, CMAQ, STBG, CFF, Local		X				
				Total Modesto	***$898,466,500***								
	City of Newman												
N02	Newman	Merced Avenue	Highway 33 to Canal School Rd	Install Collector Street improvements	$3,965,100	2019	CFF, LTF, STBGP, Local, SB1, Measure L		X	X	X		
N03	Newman	SR-33 (South)	Inyo Ave to South City limits	Install 4 Lane Arterial Roadway Improvements	$5,700,500	2020	CFF, LTF, CMAQ, STBGP, Local			X			
N04	Newman	SR-33 (South)	Highway 33/Sherman Parkway	Install Traffic Signal	$1,900,200	2020	CFF, LTF, CMAQ, STBGP, Local			X	X		
N05	Newman	Inyo Ave	Highway 33 to Canal School Rd	Install Collector Street improvements	$7,751,800	2021	CFF, LTF, STBGP, Local, SB1, Measure L		X	X			
N06	Newman	SR-33	Yolo St to Sherman Pkwy	Install 4 Lane Arterial Roadway Improvements	$4,753,100	2022	CFF, LTF, STBGP, Local, SB1, Measure L		X				
N07	Newman	SR-33	Sherman Pkwy to Stuhr Road	Install 4 Lane Arterial Roadway Improvements	$4,298,600	2024	CFF, LTF, STBGP, Local, SB1 , Measure L		X				
N08	Newman	Stuhr Road	CCID Canal to Highway 33	Install 2 Lane Arterial Roadway Improvements	$8,117,200	2025	CFF, LTF, STBGP, CMAQ, Local, SB 1, Measure L	X	X	X	X		

	STANCOG 2018 Regional Transportation Plan												
	Tier I Roadway Projects												
	Project Details							Purpose / Need (P = Primary Purpose / X = Need)					
ID	Jurisdiction	Location	Project Limits	Description	Total Cost	Open to Traffic	Funding Source	System Preserv.	Capacity Enhance.	Safety	Oper.	Alt. Mode	Complete Streets
S85	Stanislaus County	Valley Home Rd.	Over Lone Tree Creek	Bridge Rehabilitation	$2,314,300	2022	HBP	X		X			
S86	Stanislaus County	Pioneer Ave.	Over Lone Tree Creek	Replace Bridge	$1,725,250	2022	HBP	X	X	X			
S87	Stanislaus County	Milton Rd.	Over Rock Creek Tributary	Replace Bridge	$1,989,000	2022	HBP	X	X	X			
S88	Stanislaus County	Milton Rd.	Over Hood Creek	Replace Bridge	$3,714,900	2022	HBP	X	X	X			
S89	Stanislaus County	Lake Road	Over T.I.D. Main Canal	Replace Bridge	$4,295,050	2022	HBP	X	X	X			
S90	Stanislaus County	Montpelier Road	Over Main Canal @ Dallas Rd	Replace Bridge	$2,669,050	2022	HBP	X	X	X			
S91	Stanislaus County	Claribel Rd	Claribel at Roselle	Signal Improvements	$4,242,774	2019	CMAQ, STBGP			X	X		
S101	Stanislaus County	132	SR 132 Extension Dakota to Gates	Construct 4-lane divided expressway or freeway (County)	$117,000,000	2028	L, SB 1, STIP, CMAQ, STBG		X	X	X		
S102	Stanislaus County	North County Corridor	Tully Rd to SR 120/108	Construct 2-6 lane expressway	$680,000,000	2028	L, SB 1, STIP, CMAQ, STBG		X	X	X		
S103	Stanislaus County	Faith Home Road	Hatch Rd to Garner Road	4-Lane Expressway	$71,700,000	2025	L, SB 1, STIP, CMAQ, STBG		X	X	X		
S104	Stanislaus County	McHenry	Ladd Rd to the south end of the McHenry Bridge	Widen to 5 Lanes	$13,025,000	2021	L, SB 1, STIP, CMAQ, STBG		X		X		
S105	Stanislaus County	Keyes Road	Over TID Ceres Main Canal	Replace Bridge	$1,500,000	2021	SB1	X		X			
S106	Stanislaus County	Quincy Road	Over TID Upper Lateral #3	Replace Bridge	$1,500,000	2021	SB2	X		X			
S107	Stanislaus County	Eastin Road	Eastin Road & Orestimba Creek	Low water crossing - bridge or culvert construction	$2,500,000	2021	HSIP, SB1			X			
S108	Stanislaus County	Crows Landing Road	Catfish Camp to 1,200' southwest	Raise Road profile	$475,000	2021	SB1			X	X		
S109	Stanislaus County	Geer Road	Geer Road and Santa Fe Avenue	Intersection Improvements - curb, gutter, SD improvements @ NW corner	$1,000,000	2020	SB1				X		
S110	Stanislaus County	Faith Home Rd	W. Main St & Faith Home Rd	Intersection Improvements	$2,520,000	2025	CMAQ, PFF, L				X		
				Total Stanislaus County	***$1,843,465,031***								
	City of Turlock												
T14	Turlock	SR-99	SR-99 & Fulkerth Rd	Reconstruct Interchange	$12,667,800	2020	CMAQ, Dev. Fees, STBGP, STIP	X	X				
T15	Turlock	W. Main St.	Lander Ave. and 500 ft. west of S. Walnut Rd.	Reconstruction and rehabilitate roadway, install median, add Class II and Class III bicycle facilities, add sidewalk.	$6,200,000	2018	Measure L, SB 1	X					X
T16	Turlock	Fulkerth Rd	Tegner Rd to Dianne Dr	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit	$580,400	2022	Dev. Fees, STBG		X				X
T17	Turlock	Monte Vista Ave	Olive Ave to Berkeley Ave	Install Median; Add one (1) lane with Class II bike facility	$1,317,500	2020	Dev. Fees, STBG		X		X		X
T18	Turlock	Fulkerth Rd	Washington Rd to Tegner Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility	$3,419,800	2022	Dev. Fees, STBG		X				X
T19	Turlock	Washington Rd	Linwood Ave to Fulkerth Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit	$2,176,400	2030	Dev. Fees, STBG		X				X
T20	Turlock	Tegner Rd	Linwood Ave to W. Main St	Construct new 2-lane Industrial Collector with Class II bike facility	$434,600	2025	Dev. Fees, STBG		X				X
T21	Turlock	W. Canal Dr	SR-99 to Tegner Rd	Construct new 2-lane Collector with Class I bike facility	$2,065,400	2025	Dev. Fees, STBG		X				X
T22	Turlock	N. Olive Ave	Tuolumne Rd to Tomell Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility	$757,600	2025	Dev. Fees		X				X
T23	Turlock	N. Olive Ave	Canal Dr to Wayside Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit	$852,600	2025	Dev. Fees		X				X
T24	Turlock	N. Olive Ave	Wayside Dr to North Ave	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit	$888,100	2025	Dev. Fees		X				X
T25	Turlock	W. Linwood Ave	Walnut Rd to Lander Ave	Widen from 2-lane to 3-lane Collector with Class II bike facility and transit (West Ave. South to Lander)	$615,700	2030	Dev. Fees, STBG		X				X
T26	Turlock	W. Linwood Ave	Walnut Rd to Washington Rd	Widen from 2-lane to 3-lane Collector with Class II bike facility	$4,207,400	2025	Dev. Fees, STBG		X				X
T27	Turlock	W. Canal Dr	Washington Rd to Kilroy Rd	Construct new 2-lane Collector with Class I bike facility	$2,507,600	2025	Dev. Fees, STBG		X				X

Regionally Significant Listing
2018 RTP/SCS

Jurisdiction/Agency	TIP/RTP	CTIPs Project ID	Description				Estimated Cost										
	Project ID	(if available)	Facility Name/Route	Type of Improvement	Project Limits		2019	2020	2021	2023	2026	2029	2031	2037	2042
Modesto	M82		SR 132	Construct a two-lane expressway from N. Dakota Ave to the Needham St. Overcrossing. (Phase 1 of ultimate build-out of SR132 West Freeway/Expressway Project) (Reference: 2014 RTP Project ID - RE01).	State Route 99 to Dakota Ave Phase 1 (2-lane expressway)	$ 100,000,000		X	X	X	X	X	X	X	X
Modesto	M83		SR 132	Construct a four lane freeway from N. Dakota Ave to the Needham St. Overcrossing.	State Route 99 to Dakota Ave (Phase 2 Ultimate 4 lane facility with SR-99 connections)	$ 160,000,000					X	X	X	X	X
Modesto	M84		SR 99	Reconstruct to 8 Lane	Briggsmore Interchange	$ 98,679,400				X	X	X	X	X	X
Modesto	M85		SR 99	Reconstruct to 8 Lane	Stanciford/Beckwith Interchange	$ 100,000,000								X	X
Newman	N06		SR 33	Install 4 Lane Arterial Roadway Improvements	Yolo St to Sherman Pkwy	$ 4,753,100			X	X	X	X	X	X	X
Newman	N07		SR 33	Install 4 Lane Arterial Roadway Improvements	Sherman Pkwy to Stuhr Road	$ 4,298,600				X	X	X	X	X	X
Newman	N08		Stuhr Road	Install 2 Lane Arterial Roadway Improvements	CCID Canal to Highway 33	$ 8,117,200				X	X	X	X	X	X
Newman	N09		SR 33	Install 4 Lane Arterial Roadway Improvements	Yolo Avenue to Inyo Avenue	$ 3,889,700						X	X	X	X
Oakdale	O14		F St	Widen Roadway to 5-lanes	Maag Ave to Stearns Rd	$ 4,356,000			X	X	X	X	X	X	X
Oakdale	O15		F St	Widen Roadway to 5-lanes	Willowood to Oak	$ 763,688				X	X	X	X	X	X
Oakdale	O17		Crane Road	Widen Roadway to 4-lanes	F Street to Pontiac	$ 1,702,500		X	X	X	X	X	X	X	X
Patterson	P03		Sperry Ave	Install Complete Street improvements, widen to four lanes	Baldwin Road to Rogers Road	$ 12,610,000		X	X	X	X	X	X	X	X
Patterson	P04		Sperry Ave Interchange	Signal and Off-Ramp Improvements at interchange. Widen Sperry Ave to 4 Lanes between Rogers Road and I-5.	I-5 to Rogers Road	$ 17,505,000		X	X	X	X	X	X	X	X
Patterson	P05		Rogers Road	Widen from 2 to 4 lanes	Delta Mendota to Keyton Pacific Park Way	$ 5,000,000		X	X	X	X	X	X	X	X
Patterson	P08		Zacharies Rd	Construct New Interchange	Raines Rd to I-5	$ 75,000,000						X	X	X	X
Riverbank	R20		Claus Road	Widen roadway from 2-4 lanes	California to Claribel	$ 1,895,700					X	X	X	X	X
Stanislaus County	S01		Crows Landing Road Corridor Improvements	Improve 22 miles to Expressway standards	SR-99 to Interstate 5	$ 9,060,000								X	X
Stanislaus County	S82		Albers Rd	Widen to 5 lanes	Claribel Road to Warnerville Road	$ 6,000,000			X	X	X	X	X	X	X
Stanislaus County	S83		South County Corridor	Construct 2-6 lane Expressway on new alignment	Turlock City Limits to Interstate 5	$ 278,000,000				X	X	X	X	X	X
Stanislaus County	S101		SR 132	Construct 4-lane divided expressway or freeway (County)	SR 132 Extension Dakota to Gates	$ 117,000,000				X	X	X	X	X	X
Stanislaus County	S102		North County Corridor	Construct a four-lane expressway	Tully Rd to SR 120/108	$ 680,000,000				X	X	X	X	X	X
Stanislaus County	S103		Faith Home Road	4 Lane Expressway	Hatch Rd to Garner Rd	$ 71,700,000				X	X	X	X	X	X

Regionally Significant Listing
2018 RTP/SCS

Jurisdiction/Agency	TIP/RTP	CTIPs Project ID	Description			Estimated Cost									
	Project ID	(if available)	Facility Name/Route	Type of Improvement	Project Limits		2019	2020	2021	2023	2026	2029	2031	2037	2042
Modesto	M82		SR 132	Construct a two-lane expressway from N. Dakota Ave to the Needham St. Overcrossing. (Phase 1 of ultimate build-out of SR132 West Freeway/Expressway Project) (Reference: 2014 RTP Project ID - RE01).	State Route 99 to Dakota Ave Phase 1 (2-lane expressway)	$ 100,000,000		X	X	X	X	X	X	X	X
Modesto	M83		SR 132	Construct a four lane freeway from N. Dakota Ave to the Needham St. Overcrossing.	State Route 99 to Dakota Ave (Phase 2 Ultimate 4 lane facility with SR-99 connections)	$ 160,000,000						X	X	X	X
Modesto	M84		SR 99	Reconstruct to 8 Lane Interchange	Briggsmore Interchange	$ 98,679,400					X	X	X	X	X
Modesto	M85		SR 99	Reconstruct to 8 Lane Interchange	Standiford/Beckwith Interchange	$ 100,000,000								X	X
Newman	N06		SR 33	Install 4 Lane Arterial Roadway Improvements	Yolo St to Sherman Pkwy	$ 4,753,100				X	X	X	X	X	X
Newman	N07		SR 33	Install 4 Lane Arterial Roadway Improvements	Sherman Pkwy to Stuhr Road	$ 4,298,600					X	X	X	X	X
Newman	N08		Stuhr Road	Install 2 Lane Arterial Roadway Improvements	CCID Canal to Highway 33	$ 8,117,200					X	X	X	X	X
Newman	N09		SR 33	Install 4 Lane Arterial Roadway Improvements	Yolo Avenue to Inyo Avenue	$ 3,689,700							X	X	X
Oakdale	O14		F St	Widen Roadway to 5-lanes	Maag Ave to Stearns Rd	$ 4,356,000				X	X	X	X	X	X
Oakdale	O15		F St	Widen Roadway to 5-lanes	Willowood to Oak	$ 763,688					X	X	X	X	X
Oakdale	O17		Crane Road	Widen Roadway to 4-lanes	F Street to Pontiac	$ 1,702,500		X	X	X	X	X	X	X	X
Patterson	P03		Sperry Ave	Install Complete Street Improvements, widen to four lanes	Baldwin Road to Rogers Road	$ 12,610,000		X	X	X	X	X	X	X	X
Patterson	P04		Sperry Ave Interchange	Signal and Off-Ramp Improvements at interchange. Widen Sperry Ave to 4 Lanes between Rogers Road and I-5.	I-5 to Rogers Road	$ 17,505,000		X	X	X	X	X	X	X	X
Patterson	P05		Rogers Road	Widen from 2 to 4 lanes	Delta Mendota to Keyton Pacific Park Way	$ 5,000,000		X	X	X	X	X	X	X	X
Patterson	P08		Zacharias Rd	Construct New Interchange	Raines Rd to I-5	$ 75,000,000							X	X	X
Riverbank	R20		Claus Road	Widen roadway from 2-4 lanes	California to Claribel	$ 1,895,700					X	X	X	X	X
Stanislaus County	S01		Crows Landing Road Corridor Improvements	Improve 22 miles to Expressway standards	SR-99 to Interstate 5	$ 9,060,000								X	X
Stanislaus County	S82		Albers Rd	Widen to 5 lanes	Claribel Road to Warnerville Road	$ 6,000,000				X	X	X	X	X	X
Stanislaus County	S83		South County Corridor	Construct 2-6 lane Expressway on new alignment	Turlock City Limits to Interstate 5	$ 278,000,000					X	X	X	X	X
Stanislaus County	S101		SR 132	Construct 4-lane divided expressway or freeway (County)	SR 132 Extension Dakota to Gates	$ 117,000,000					X	X	X	X	X
Stanislaus County	S102		North County Corridor	Construct a four-lane expressway	Tully Rd to SR 120/108	$ 680,000,000					X	X	X	X	X
Stanislaus County	S103		Faith Home Road	4 Lane Expressway	Hatch Rd to Garner Rd	$ 71,700,000					X	X	X	X	X

2019 FTIP
SUMMARY OF CHANGES

Agency: Various
Amendment Type: Formal Amendment - Type 5
Amendment #: 9

Project Identification				Funding										
Existing or New Project	CTIPS ID#	Sponsor Agency	Project Title	Prior Total Project Cost	Current Total Project Cost	Prior FFY	Prior CTIPS Amount	Current FFY	Current CTIPS Amount	Fund Source	Phase	Total Project Change	Total Project % Increase/ Decrease	COMMENTS
Existing	21400000680	Various Agencies	Grouped Projects for Pavement resurfacing and/or rehabilitation on the State Highway System - Highway Maintenance (Projects are consistent with 40 CFR Part 93.126 Exempt Tables 2 and Table 3 categories - Pavement resurfacing and/or rehabilitation.	$10,643,000	$15,346,000	19/20	$0	19/20	$4,703,000	HM	CON	$4,703,000	44.19%	Updated Highway Maintenace Grouped Listing per Caltrans Update
Existing	21400000628	City of Turlock	Preventative Maintenance (Preventative Maintenance for transit vehicles and transit facilities. (Using Toll Credits))	$1,150,000	$550,000	19/20	$0	19/20	$4,703,000	FTA 5307	PE	-$600,000	-52.17%	Programmed FTA 5307 and Local Match Funds in the 2019 FTIP. Deleted prior year funding amounts.
						19/20	$0	19/20	$4,703,000	Local Match				
						20/21	$0	20/21	$4,703,000	FTA 5307	PE			
						20/21	$0	20/21	$4,703,000	Local Match				
New Project	21400000711	City of Turlock	Transit Operations Facility (Transit Operations Facility (Design and construction of Transit Operations Facility for parking and fueling on S. Walnut Road in the City of Turlock))	$0	$1,409,470	18/19	$0	18/19	$409,470	Other State - Transit	PE and ROW	$1,409,470	N/A	New Project
						20/21	$0	20/21	$960,000	FTA 5307	ROW			
						20/21	$0	20/21	$40,000	Local Match				
New Project	21400000712	Stanislaus County	SR132 Extenion Dakota to Gates (SR132 Extension Dakota to Gates (Using Toll Credits))	$0	$10,000	21/22	$0	21/22	$10,000	STBGP	PE	$10,000	N/A	New Project

List of Technical Studies Bound Separately (Volume 3)

Draft Relocation Impact Statement

Community Impact Assessment

Air Quality Report

Noise Study Report

Noise Abatement Decision Report

Water Quality Report

Natural Environment Study

Location Hydraulic Study

Preliminary Drainage Report

Historical Property Survey Report

- Historic Resource Evaluation Report
- Historic Architectural Survey Report

Archaeological Survey Report

Hazardous Waste Reports

Initial Site Assessment

Preliminary Site Investigation (Aerial Deposited Lead Study)

Visual Assessment Report

Paleontological Evaluation Report

To obtain a copy of one or more of these technical studies/reports or the Environmental Impact Report/Environmental Assessment, please send your request to the following email address: Jennifer.lugo@dot.ca.gov

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