South Fresno State Route 99 Corridor Project

Operational Improvements at North Avenue and American Avenue on State Route 99 in Fresno County

06-FRE-SR99-PM12.5 to 19.1
Project EA/ID Number 06-0H240/0600020559
State Clearinghouse Number 2019039121

Draft Environmental Impact Report/ Environmental Assessment

South view of American Avenue over State Route 99

South view of North Avenue over State Route 99

Prepared by the
State of California Department of Transportation

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

September 2021

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Draft Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project in Fresno County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA), and Caltrans is the lead agency under the California Environmental Quality Act. 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 Caltrans district office at 1352 West Olive Avenue, Fresno, California 93728, and at the Easton Branch Library, 25 East Fantz Avenue, Fresno, California 93706.
- If you prefer a printed version of this document or a CD (compact disc) of this document be sent to your home, please contact John Thomas, Senior Environmental Planner, at this email address: john.q.thomas@dot.ca.gov. The document can also be downloaded at the following website: https://bit.ly/3BanAAp
- Attend the Virtual Public Hearing on November 4, 2021, from 6:00 p.m. to 8:00 p.m. Visit the project website to access the link for the meeting at: https://bit.ly/3BanAAp
- Tell us what you think. If you have any comments regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: John Thomas, Central Region Environmental, California Department of Transportation, 2015 East Shields Avenue, Suite 100, Fresno, California 93726. Submit comments via email to john.q.thomas@dot.ca.gov.
- Submit comments by the deadline: November 27, 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: John Thomas, Central Region Environmental, 2015 East Shields Avenue, Suite 100, Fresno, California 93726; Phone: (559) 408-4496 (Voice), or use the California Relay Service number 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

Federal Highway Administration Highway ID Number **06000200559**
State Clearinghouse Number 2019039121
06-FRE-SR99-PM 12.5-19.1
06-0H240/06-0000-2055

Operational Improvements at American Avenue and North Avenue
on State Route 99 from post miles 12.5 to 19.1 in Fresno County, California

DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT

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

THE STATE OF CALIFORNIA
Department of Transportation

Diana Gomez, District Director
District 6 – Central Region
California Department of Transportation
NEPA and CEQA Lead Agency

9-9-2021
Date

The following individual can be contacted for more information about this document:

John Thomas, Central Region Environmental, 2015 East Shields Avenue, Suite 100, Fresno, California 93726; Phone: 559-408-4496

Summary

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 U.S. Code 327 for more than five years, beginning July 1, 2007 and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Barack Obama on July 6, 2012 amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the California Department of Transportation (Caltrans) entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 (National Environmental Policy Act Assignment Memorandum of Understanding) National Environmental Policy Act 327 Assignment Memorandum of Understanding with the Federal Highway Administration. The National Environmental Policy Act Assignment Memorandum of Understanding became effective October 1, 2012 and was renewed on December 23, 2016 for a term of five years. In summary, Caltrans continues to assume Federal Highway Administration responsibilities under the National Environmental Policy Act and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With the National Environmental Policy Act Assignment, the Federal Highway Administration assigned, and Caltrans assumed, all the U.S. Department of Transportation Secretary’s responsibilities under the National Environmental Policy Act. 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 proposed project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act and the National Environmental Policy Act. The Department is the lead agency under the National Environmental Policy Act. Caltrans is the lead agency under the California Environmental Quality Act. In addition, the Federal Highway Administration’s responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project is being, or has been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and the National Environmental Policy Act 327 Memorandum of Understanding executed by the Federal Highway Administration and Caltrans.

Some impacts determined to be significant under the California Environmental Quality Act may not lead to a determination of significance under the National Environmental Policy Act. Because the National Environmental Policy Act is concerned with the significance of the project as a whole, often a “lower level”

document is prepared for the National Environmental Policy Act. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment, which this document represents.

The next step in the environmental process is to circulate the Environmental Impact Report/Environmental Assessment to the public for a 45-day review period. After receipt of comments from the public and reviewing agencies, a Final Environmental Impact Report/Environmental Assessment will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Final Environmental Impact Report/Environmental Assessment will include responses to comments received on the Draft Environmental Impact Report/Environmental Assessment and will identify the "preferred" alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with the California Environmental Quality Act, and Caltrans will decide whether to issue a Finding of No Significant Impact or require an Environmental Impact Statement for compliance with the National Environmental Policy Act. A Notice of Availability of the Finding of No Significant Impact will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

Caltrans, in cooperation with the City of Fresno, Fresno County, Fresno Council of Governments and Fresno County Transportation Authority propose to improve two existing interchanges on State Route 99—at American Avenue and North Avenue—between post miles 12.5 and 19.1 in the southern portion of the City of Fresno and Fresno County in California. As the lead agency for both the California Environmental Quality Act and the National Environmental Policy Act environmental studies, Caltrans determined an Environmental Impact Report for the California Environmental Quality Act and an Environmental Assessment for the National Environmental Policy Act were the appropriate level of documentation for this project. Both are combined in this one joint document.

Caltrans constructed the State Route 99 alignment in 1965 with partial interchanges (half interchanges) where local roads intersect the highway in the project area. This project proposes to reconstruct two of the existing half interchanges to create full interchanges at American Avenue and North Avenue, with closure of the ramps at Cedar Avenue, which effectively moves the existing southbound on-ramp and northbound off-ramp to North Avenue.

The purpose and need for this project is to improve the operations of the interchanges because the half-interchange configurations are now considered non-standard. The pavement is old and cracked. The existing on- and off-ramps have tight dimensions, making it difficult for vehicles, especially large trucks, to navigate. The half interchange configurations make it difficult for motorists to find local destinations and locate corresponding on- and off-ramps to and from State Route 99. This causes more travel on local roads, with stop-and-go and out-of-direction travel to reach desired destinations.

Two build alternatives and a No-Build alternative are proposed at each interchange location. The build alternatives differ in the interchange configuration type proposed. See Chapter 1 Proposed Project for further description of the interchange configuration types considered. All alternatives propose to reconstruct the existing overcrossings and construct on- and off-ramps to form complete full interchanges, with sidewalks, curb and gutter, lighting and signalization, and a stormwater system. The existing half interchange ramps at Cedar Avenue would be closed.

The project lies within an existing transportation corridor that includes State Route 99, Golden State Boulevard, and the Burlington Northern and Santa Fe Railroad. The corridor runs in a northwest-southeast alignment through the county, crossing diagonally across a north-south- and east-west-oriented grid of local roads. Other railroads also cross through the area, such as the Union Pacific Railroad and the California High-Speed Rail project, which cross under and over State Route 99, respectively, in the project area. The Calwa railroad transfer yard sits within the corridor northeast of the North Avenue interchange, with multiple rail spurs designed to handle a large volume of train traffic going through the Fresno area.

A total of 40 properties are potentially directly affected by the proposed improvements: 8 properties at American Avenue and 32 properties at North Avenue. The area is designated as an industrial and commercial zone by the County and City of Fresno where a consistent vision for land use in the corridor supports traditional and emerging industrial and commercial business activities in a designated industrial priority area to serve the future economic health of the region. The project area is also a designated “Opportunity Zone” which is an investment tool to connect private capital with low-income communities. See section 2.1.1 Existing and Future Land Use to read more on the local planning in the project area. The project interchanges serve as primary points of access for the existing and developing industrial and commercial businesses located along this portion of State Route 99 as part of an area dubbed “The Industrial Triangle.”

The environmental studies conducted for the project area include analysis of a wide range of environmental topics. See Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization and/or Mitigation Measures for a listing of the topics studied with broader discussion for topics where potential impacts have been identified. Chapter 3 California Environmental Quality Act Evaluation contains the California Environmental Quality Act-specific significance determinations as well as the 3.3 Climate Change section.

The environmental process includes coordination with many public agencies having planning or resource-specific jurisdiction within the project area. See Chapter 4 Comments and Coordination for more information about Caltrans’ outreach efforts. A Public Scoping and Information Meeting was held on March 20, 2019 to provide information about the proposed project alternatives and to gather input from the public. See Chapter 6 Distribution List for a list of agencies sent a copy of the Notice of Preparation and/or copy of a Public Notice distributed to announce the public meeting.

The following tables summarize the potential impacts identified for each of the proposed alternatives at each interchange location.

Summary of Potential Impacts from Alternatives at American Avenue

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Land Use—Property Converted to Transportation	21.72 acres, 7 properties	14.91 acres, 7 properties	0 properties. No land use would change.
Relocations and Real Property Acquisition—Business Displacements	1 farm office, equipment and irrigation may be displaced.	Acquisition of property. Driveway entrance may be relocated farther east.	No businesses relocated.
Relocations and Real Property Acquisition—Housing Displacements	1 farmhouse may be displaced.	Acquisition of property. Driveway entrance may be relocated farther east.	No residents relocated.
Relocations and Real Property Acquisition—Utility Service Relocation	Relocate utilities. Temporary intermittent service during construction.	Relocate utilities. Temporary intermittent service during construction.	No impact.
Traffic and Transportation/ Pedestrian and Bicycle Facilities	Improved access to roadways, and pedestrian and bicycle facilities. Temporary delays and detours during construction.	Improved access to roadways, and pedestrian and bicycle facilities. Temporary delays and detours during construction.	No improved traffic conditions. No improved pedestrian or bicycle facilities.
Visual/Aesthetics	No impact with replacement planting.	No impact with replacement planting.	No impact.
Paleontology	Potential to uncover fossils. Construction monitoring and recovery are included.	Potential to uncover fossils. Construction monitoring and recovery are included.	No impact.
Hazardous Waste and Materials	7 properties with hazardous waste.	7 properties with hazardous waste.	No remediation of hazardous materials.

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Air Quality	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	No transportation improvements. Air quality would worsen with time as the population and land use increase and stop-and-go travel and delay increase on local streets.
Animal Species	Preconstruction surveys for migratory birds and bats to ensure no impact.	Preconstruction surveys for migratory birds and bats to ensure no impact.	No impact.
Climate Change (Does not consider emissions on the local street system)	In 2046, 3,414 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 3,414 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 545 tons above the 2019 Existing, Baseline CO_2 emissions, with no project improvements.

Summary of Potential Impacts from Alternatives at North Avenue

Potential Impact	Alternative 2	Alternative 4	No-Build Alternative
Land Use—Property Converted to Transportation	20.06 acres, 25 properties	15.01 acres, 20 properties	No land use would change. 0 properties affected.
Relocations and Real Property Acquisition—Business Displacements	3 units potentially impacted.	2 units potentially impacted.	No units impacted.
Relocations and Real Property Acquisition—Utility Service Relocation	Relocate utilities. Temporary intermittent service during construction.	Relocate utilities. Temporary intermittent service during construction.	No impact.
Traffic and Transportation/ Pedestrian and Bicycle Facilities	Project improves roadways, with pedestrian and bicycle facilities.	Project improves roadways, with pedestrian and bicycle facilities.	No improvements to roadways or for pedestrians and bicycles.
Visual/Aesthetics	No impact with replacement planting.	No impact with replacement planting.	No improvement plantings.
Paleontology	Potential to uncover fossils. Construction monitoring and recovery are included.	Potential to uncover fossils. Construction monitoring and recovery are included.	No impact to paleontology resources.
Hazardous Waste and Materials	29 properties with hazardous waste.	25 properties with hazardous waste.	No remediation of hazardous materials.
Air Quality	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	No transportation improvements. Air quality would worsen with time as population and land use increase and stop-and-go travel and delay increase on local streets.
Animal Species	Preconstruction surveys for migratory birds and bats to ensure no impact.	Preconstruction surveys for migratory birds and bats to ensure no impact.	No impact.
Climate Change (Does not consider emissions on the local street system)	In 2046, 4,281 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 4,281 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 2,121 tons above the 2019 Existing, Baseline CO_2 emissions, with no project improvements.

Permits, Licenses, Agreements, and Certifications

A 1600 Permit and Waste Discharge Requirement (WDR) from the California Department of Fish and Wildlife would be required for work disturbing the North Colony Canal located on north side of North Avenue, east of the intersection with Cedar Avenue.

Agency	PLAC	Status
California Department of Fish and Wildlife	Fish and Game Code 1600 Permit, required for work at canals.	1600 Permit is obtained prior to start of 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 also the lead agency under the California Environmental Quality Act.

Caltrans, in cooperation with the Fresno Council of Governments, Fresno County and City of Fresno, proposes to reconstruct two existing half-interchanges where State Route 99 (SR-99) intersects with American Avenue and North Avenue by expanding them to full interchanges and bringing them into compliance with current Caltrans design standards. This project lies at the southern boundary of the city of Fresno in Fresno County in the center of the San Joaquin Valley. The interchanges are located within a major transportation corridor that includes State Route 99, the Burlington Northern and Santa Fe Railroad line, Golden State Boulevard, and California High-Speed Rail line, which is currently under construction. The County and the City have zoned properties in the corridor to meet planning goals represented in their respective general plans which include supporting industrial and commercial uses, maximizing the transportation advantages of the corridor, and supporting economic development within the county. See Figure 1-1 Project Vicinity Map and Figure 1-2 Project Location Map.

This project is included in the Fresno Council of Governments 2018 Regional Transportation Plan and both proposed interchanges (American and North) are included in the Non-exempt Project Listing of the 2019 Update of the Federal Transportation Improvement Program (FTIP). The project is proposed to be funded through a combination of state and local funding sources.

The Fresno County Transportation Authority (FCTA) will provide most of the funding through its Measure C and Regional Transportation Mitigation Funds (RTMF) programs. Measure C is a Fresno County-wide half-cent sales tax for transportation purposes that was reauthorized by voters in 2006. The Fresno County Transportation Authority also administers the Regional Transportation Mitigation Funds, which are collected from developer fees to mitigate traffic impacts.

Funding is also proposed to come from the State Transportation Improvement Program (STIP). Specifically, funds from the Regional Improvement Program (RIP), a sub-program of the State Transportation Improvement Program, have been proposed by the Fresno Council of Governments. Additional funding sources may be identified in the future and may include federal grants.

Construction of the proposed work is expected to take approximately 18 months at each location. The interchanges would be constructed at approximately the same time, but the ultimate schedule will be determined before construction begins. The current preliminary schedule begins Construction in June 2024, and opening day is anticipated in January 2026. See Section 1.5 Comparison of Alternatives for the cost estimates and potential impacts of the proposed alternatives at each interchange.

New access agreements would be required with Fresno County and the City of Fresno due to changes to existing on- and off-ramps to and from the State Route 99.

Note: Throughout this document all roadway descriptions will be discussed in a south-to-north and west-to-east order because this follows Caltrans' post mile order for all state highways within each county. The order begins with post mile 1 at the southern border of a county and increases to the north, and the same goes from the western border to the east. For example, post mile 12.5 on State Route 99 in Fresno County is south of American Avenue, 12.5 miles from the southern county border, and post mile 19.1 is north of North Avenue, 19.1 miles north of the southern county border. All descriptions will begin in the southern portion of the project area and note features along the route toward the north.

Figure 1-1 Project Vicinity Map

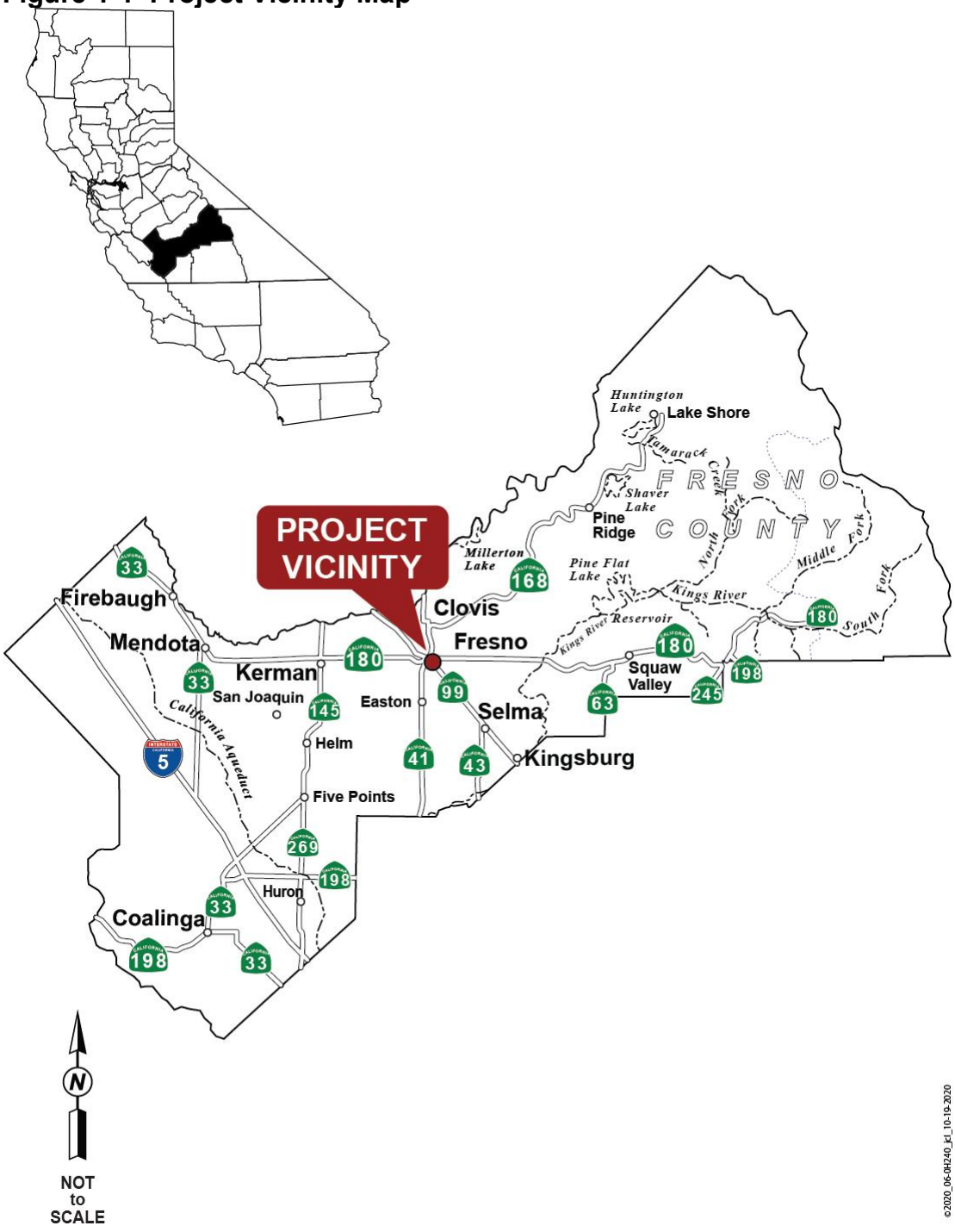
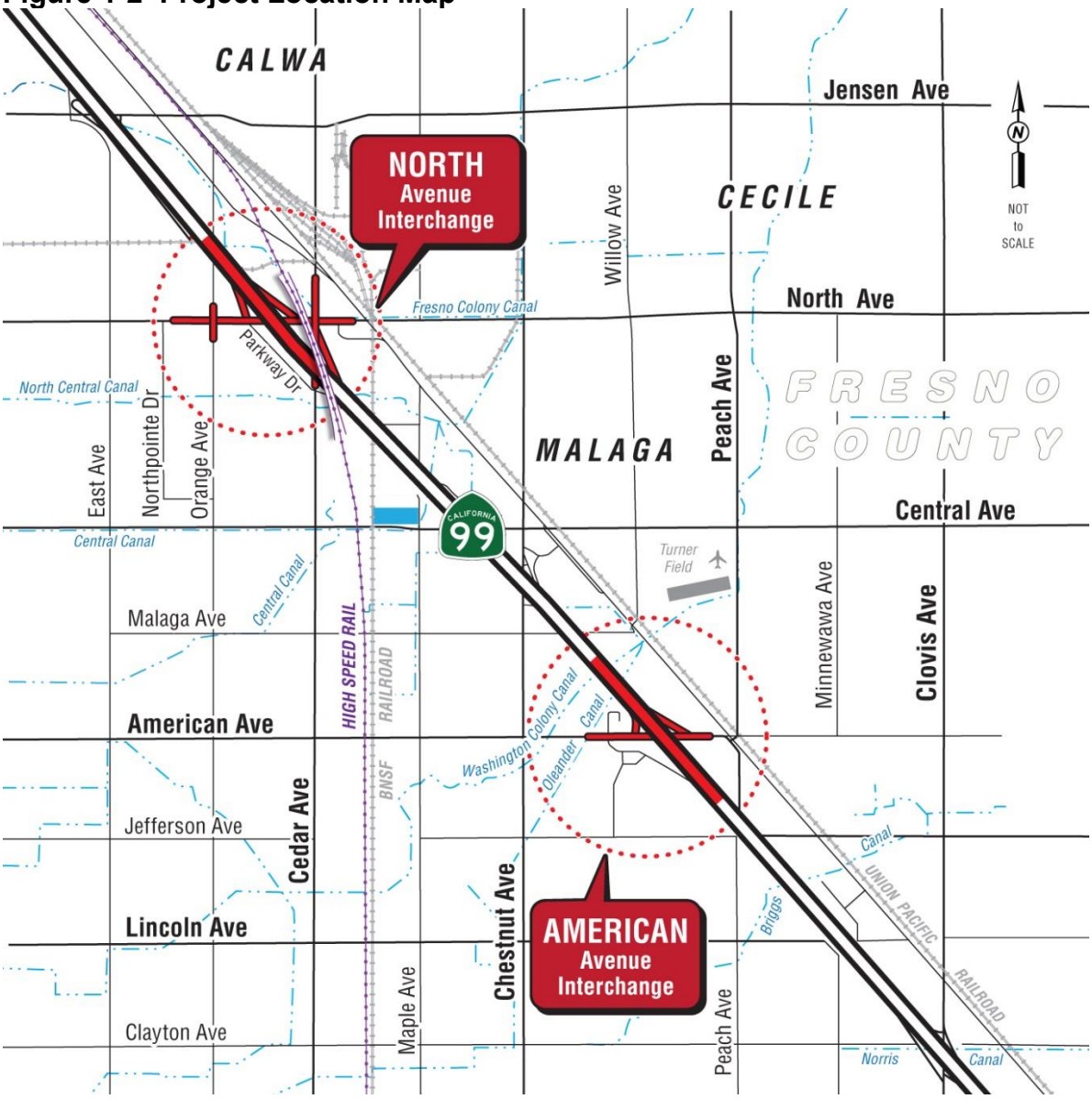


Figure 1-2 Project Location Map



1.2 Purpose and Need

The discussion of the purpose and need for this project provides the reasoning why the project is being considered. The purpose of a project identifies the objectives of the project; the need describes the key deficiencies of the roadway that the project is intended to address. The purpose and need form the basis for comparing the proposed alternatives, along with potential environmental impacts, to select an eventual “preferred” alternative to construct.

1.2.1 Purpose

The purpose of the South Fresno State Route 99 Corridor project is to reconstruct the existing interchanges on State Route 99 at American and North Avenues by expanding them to full interchanges and bringing them into compliance with current Caltrans design standards, thereby improving the traffic operations at these locations.

1.2.2 Need

The existing half-interchanges do not meet current Caltrans design standards. The interchanges were built in 1965, and the pavement is now old and highly deteriorated. Only two traffic lanes cross the existing structures over the highway, one lane for each direction of travel. The existing interchange configurations are non-standard and are “partial” or “split” to form half interchanges at American Avenue, Cedar Avenue and North Avenue.

The existing half-interchanges are not full interchanges with all options for getting on and off the highway. Half interchanges mean on- and off-ramps are separated from each other, making it difficult for motorists to find corresponding on- or off-ramps and forcing vehicles to use local streets to reach their destinations. The on- and off-ramps also have restrictive dimensions, making it difficult for traffic, especially large trucks, to navigate them.

Additionally, traffic is expected to increase in the project area due to the implementation of planned development on both sides of the highway. Caltrans traffic studies show the operation and performance of the interchanges need updating now because traffic conditions will continue to worsen if no improvements are made.

Existing Conditions

State Route 99 Mainline

State Route 99 is a major north-south transportation route in the state of California. It provides access to communities through the San Joaquin and

Sacramento valleys and to many of the major cities located inland from the California coast. State Route 99 is not only an important route within the region for the transportation of goods and services but, equally important, it is one of the main routes for the distribution of imports and exports to and from the ports of major coastal cities to all points within the state and beyond.

Currently, State Route 99 within the project limits (post miles 12.5 to 19.1) is a six-lane, principal arterial, with a posted speed limit of 70 miles per hour. The ultimate route concept is for eight lanes. The travel lanes are 12 feet wide with approximately 10-foot-wide paved shoulders and a 46-foot-wide median dividing the northbound and southbound traffic.

American Avenue

American Avenue is an east-west two-lane local road with a posted speed limit of 55 miles per hour. The existing interchange configuration at American Avenue is a half-diamond interchange with one on-ramp and one off-ramp. A southbound off-ramp on the west side of State Route 99 enables traffic to exit the highway onto American Avenue, and a northbound on-ramp on the east side of State Route 99 enables traffic to head north on State Route 99 from American Avenue. Having only two ramps prevents northbound State Route 99 traffic from exiting the highway at American Avenue, and there is no southbound on-ramp to State Route 99 for traffic leaving American Avenue to head south. A full interchange would provide all four options to enter and exit the highway in one location.

Half-interchanges are no longer supported in Caltrans design standards. Half-interchanges force vehicles to use on local roads to find access to the highway or local destinations. For example, when delivery trucks travel north on State Route 99 to deliver supplies to the Fresno County Juvenile Justice Campus located next to the American Avenue interchange. Currently, those delivery trucks are unable to exit the highway at American Avenue because the interchange there is no northbound off-ramp. Instead, northbound traffic must exit the highway about 1 mile south at Clovis Avenue, or north at Chestnut Avenue. Once off the highway, vehicles must travel on local roads to get to the campus. Along the way, vehicles must stop at numerous local intersections and at times wait at railroad crossings for trains to pass before reaching the desired destination.

The current American Avenue overcrossing is a two-lane bridge structure. The southbound off-ramp, where it joins American Avenue, is currently controlled with a stop sign. A short section of sidewalk extends along the north side of the American Avenue overcrossing to the end of the bridge deck at each end. There is no lighting, and the existing stormwater system is outdated. The pavement is also old (constructed in 1965) and severely cracked and worn.

North Avenue

North Avenue is an east-west two-lane local road with a posted speed limit of 45 miles per hour. The interchange at North Avenue is a half-diamond configuration with two split ramps: two ramps at North Avenue and two opposing ramps at Cedar Avenue. Currently, at North Avenue, there is a southbound off-ramp to exit State Route 99 onto North Avenue and a northbound on-ramp for traffic heading north on State Route 99. Cedar Avenue has the opposing ramps with a southbound on-ramp and a northbound off-ramp.

Split ramps mean that the ramps of a typical full interchange are split between two interchange locations. In this case, they are split 0.33 mile apart. Split access can cause additional out-of-direct travel, which is compounded by the diagonal orientation of State Route 99 crossing the north-south-grid of local streets. Finding a path to destinations can be circuitous and disorienting unless drivers know the area well. Drivers then have a difficult time finding a path back to the correct ramps onto the highway, with stop-and-go travel as vehicles stop at numerous local intersections and/or wait at railroad crossings for trains to pass by.

The current North Avenue overcrossing is narrow with a two-lane bridge. The ramps are one lane only. Traffic is controlled with stop signs where the ramps meet North Avenue. Parkway Avenue extends between North and Cedar avenues on the west side of State Route 99, serving as a frontage road to businesses, as well as access to the southbound on-ramp to State Route 99 from Cedar Avenue. On the eastern side of State Route 99, North and Cedar avenues meet east of the overcrossing to form an intersection that is controlled by four-way signalization.

A short section of sidewalk extends along the north side of the North Avenue overcrossing and ends at each end of the bridge deck. There is no overhead lighting. There are traffic signals at the intersections of North and Orange avenues as well as North and Cedar avenues. There is an outdated stormwater system at the interchange. The pavement is old and severely cracked and worn.

Traffic Volumes

A Traffic Operations Report was completed in May 2020 along with additional traffic data prepared by Caltrans District 6 Traffic Operations and Planning units. The studies provided estimated Annual Average Daily Traffic (AADT) volume data for the 2019 Existing year and predicted traffic volume data for the 2026 Open to Traffic Year and the 2046 Planning Horizon Year.

Caltrans uses Annual Average Daily Traffic volumes to measure the carrying capacity of roadway features, such as roadway segments, intersections and interchanges. Average Daily Traffic volume numbers represent the traffic demand or the volume of traffic using a roadway in a 24-hour period.

Roadways are designed to handle specific volumes of traffic. When the capacity of a roadway is exceeded, the effectiveness of the roadway is reduced. According to the 2020 Traffic Operations Report, traffic volumes are expected to increase in the project area over the next several years at both interchanges.

State Route 99 Mainline

Table 1-1 Mainline Annual Average Daily Traffic Volume (AADT) shows traffic volumes and the percentage of truck traffic on State Route 99 between North and American avenues. The table shows that traffic volume on State Route 99 is predicted to increase by approximately 174,650 Annual Average Daily Traffic from 2019 to 2046, and the percentage of truck volume would remain at approximately 16 percent of the vehicle mix.

Table 1-1 Mainline Annual Average Daily Traffic Volume

Mainline	Annual Average Daily Traffic	Truck Annual Average Daily Traffic	Truck Percentage
2019 Existing	122,650	19,624	16%
2026 No-Build	199,050	31,848	16%
2046 No-Build	297,300	47,568	16%

Source: Caltrans Travel Forecasting.

American Avenue

Table 1-2 Annual Average Daily Traffic Volume at American Avenue shows traffic volumes for American Avenue and assumes the interchange remains a half interchange with no improvements made. The table shows an increase in traffic volume by 2,900 Annual Average Daily Traffic between 2019 to 2046. Truck volumes increase by 261 Annual Average Daily Traffic but remain at 9 percent of the vehicle mix. The increases are due mostly to population growth and implementation of land use planning in the area.

Table 1-2 Annual Average Daily Traffic Volume at American Avenue

American Interchange	Annual Average Daily Traffic	Truck Annual Average Daily Traffic	Truck Percentage
2019 Existing	4,900	441	9%
2026 No-Build	5,700	513	9%
2046 No-Build	7,800	702	9%

Source: Caltrans Travel Forecasting.

North Avenue

Table 1-3 Annual Average Daily Traffic Volume at North Avenue shows traffic volumes for North Avenue as a split-interchange with Cedar Avenue volumes included. The table shows an increase in traffic volume by 25,400 Annual Average Daily Traffic between 2019 to 2046 with no project constructed. Truck traffic follows a similarly with truck volume increasing by 9,190 Annual Average Daily Traffic between 2019 and 2046. Truck percentage of the vehicle mix maintains 33.5 percent between 2026 and 2046. The total increase in traffic volume in the area is mostly from population growth and implementation of land use planning in the area.

Table 1-3 Annual Average Daily Traffic Volume at North Avenue

North Interchange	Annual Average Daily Traffic	Truck Annual Average Daily Traffic	Truck Percentage
2019 Existing	14,000	4,060	29%
2026 No-Build	30,000	9,996	33.5%
2046 No-Build	39,400	13,250	33.5%

Source: Caltrans Travel Forecasting.

Level of Service

Level of Service is a qualitative rating system used to measure the effectiveness of a roadway or interchange to transport vehicles. The level of service rating system uses letters “A” through “F” to describe and measure service quality. A designation of level of service “A” indicates excellent travel conditions, while level of service “F” indicates very poor, congested conditions.

Traffic studies show that mainline State Route 99 and all studied interchanges are currently (2019) operating at acceptable levels of service during peak travel periods, when traffic volumes are the highest and the interchanges would be experiencing the worst conditions. However, there are three spot locations at North Avenue that are currently operating at level of service “F”. See section 2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities for more details on transportation facilities.

Interchange Spacing

Caltrans standards require a spacing of one mile between interchanges on a highway in an urban setting, where the closest interchange is not a freeway-to-freeway interchange.

The 2020 Traffic Operations Report study area for this project includes a 6-mile stretch of State Route 99 with seven local roads crossing the highway

from Clovis Avenue to Jensen Avenue. Five of the seven interchanges are half interchanges (split or partial interchanges).

The interchange spacing between Cedar Avenue and North Avenue is 0.33 miles apart which is shorter than the one-mile spacing standard. The shorter spacing is considered to contribute to diminishing traffic operations on State Route 99 at these interchanges. The short spacing contributes to vehicle merging and diverging conflicts as traffic enters and exits the highway at Cedar and North Avenues. See section 2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities for more details on interchange spacing.

Bicycle and Pedestrian Facilities

Caltrans projects intersecting local city and county road systems must consider including features that align with the local planning goals for bicycles and pedestrians. The current dimensions of the overcrossings are narrow with no additional area for bicyclists and very little space for pedestrians and do not comply with current Caltrans standards. Improved bicycle and pedestrian access are a high priority for the City of Fresno and Fresno County and has been identified as a deficiency in the project area. See section 2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities for more details on bicycle and pedestrian facilities.

Logical Termini and Independent Utility

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
- Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

The project has logical termini and is of sufficient length to address the deficiencies identified at the interchanges. The project replaces two existing interchanges. The proposed improvements not only update the dimensions of the bridge and ramps to bring the interchanges up to Caltrans design standards, but improvements are also provided to existing local roads and intersections next to the interchanges to ensure the road system operates effectively out to the year 2046, which is Caltrans required 20-year planning horizon. Additionally, the environmental studies for this project have been conducted with a wide scope from the beginning to ensure the potential environmental impacts are sufficiently identified.

The project has independent utility and is a reasonable expenditure as the improvements address the identified deficiencies even if no other transportation improvements are made. There are no additional projects needed to address the identified deficiencies at the interchanges.

The project does not restrict the consideration of alternatives for reasonably foreseeable transportation improvements. The Fresno Council of Governments 2018 Regional Transportation Plan/Sustainable Communities Strategies identifies other transportation improvements in the State Route 99 corridor. The county and city are actively implementing their respective general planning for the project area (2000 Fresno County General Plan, as amended, and City of Fresno's 2014 General Plan, as amended). The 2018 Regional Transportation Plan proposes several projects to improve bicycle and pedestrian mobility in the project area as well as improvements to the existing Central Avenue interchange, and the City of Fresno is planning a grade-separation of North Avenue from the California High-Speed Rail crossing located east of the proposed interchange in this project. The project design has been developed to consider other reasonably foreseeable projects and does not conflict with or constrain the design of these other projects. Through regular coordination with the County and City, this project includes design features that demonstrate consideration of these other plans. See section 1.4 Project Alternatives to see the design features being proposed.

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 potential environmental impacts.

The project is located at the southern border of the City of Fresno in Fresno County on State Route 99 (SR-99) between post miles 12.5 and 19.1. There are two existing half-interchanges at either end of the project location, one at American Avenue and the other at North Avenue. The project proposes to reconstruct these two half-interchanges by expanding them to full interchanges and bringing them up to current Caltrans design standards.

Along with the no-build alternative, two build alternatives are being considered at each current half-interchange location. Caltrans design standards have been utilized to prepare a reasonable range of alternatives to address the deficiencies of the existing interchanges. Each build alternative proposes to construct full interchanges of a type that is appropriate for the existing topography and infrastructure in the existing project setting.

1.4 Project Alternatives

The Caltrans Highway Design Manual describes an interchange as a "combination of ramps and grade separations at the junction of two or more" roadways "for the purpose of reducing or eliminating traffic conflicts, to improve safety, and increase traffic capacity at the crossing." The manual further states: "Crossing conflicts are reduced by grade separation," and "Turning conflicts for traffic are either eliminated or minimized, depending upon the type of interchange design."

The selection of an interchange type and its design are influenced by many factors, including traffic volume, speed, and composition of traffic to be served (trucks, cars, bicycles, and pedestrians), as well as the number of intersecting roads, arrangement of the local street system, local planning and consideration of growth projections, proximity to adjacent interchanges, community impact, and cost.

Several interchange types are proposed for consideration to improve the operations of the existing interchanges. See Figure 1-3 Typical Interchange Configuration Types at the end of Chapter 1 to see diagrams of three basic types. The proposed alternatives are either typical intersection type configurations or they are modifications of typical types. Two interchange types are being considered for American Avenue, and two interchange types are being considered at North Avenue. See the following sections for a description of the project alternatives being proposed.

All proposed alternatives would include construction of a new bridge structure crossing over State Route 99. On- and off-ramps for all directions of travel are proposed in each alternative, as are sidewalks, curb and drainage gutters, and crosswalks for pedestrians. Overcrossings would include four through lanes, two in each direction, plus shoulders wide enough for bicycle use, consistent with local planning for bicycle facilities. Signals and lighting would be installed. A new drainage system would be installed to handle storm water. New landscaping would replace any landscaping removed by the project. Each build alternative would require the purchase of additional right-of-way.

All proposed improvements would be constructed to meet requirements of the 1990 Americans with Disabilities Act.

Some of the project features proposed in this project are a result of decisions to implement Caltrans Deputy Directive 64-Revision 2 (DD-64R2) which is Caltrans policy to implement a "Complete Streets" program. The policy requires the consideration of the needs of travelers of all ages and abilities throughout the Caltrans project development process and activities in the planning, programming, design, construction, operations, and maintenance of the State Highway System. Caltrans views all transportation improvements (new and retrofit) as opportunities to improve safety, access, and mobility for

all travelers and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

The project contains a number of standardized project measures to reduce potential impacts that are applied on all Caltrans projects. These were not developed in response to any specific environmental impact resulting from this proposed project.

1.4.1 Build Alternatives

The following alternatives propose different interchange configurations for American and North avenues. The new on- and off-ramps would merge with State Route 99 in different locations depending on each alternative configuration. The merging ramps would be the only work proposed to the State Route 99 mainline, except for traffic control during construction where signs would be placed in the existing right-of-way.

American Avenue

Two alternatives are proposed at American Avenue:

- Alternative 1 Spread Diamond (Type L-2)
- Alternative 2 Partial Cloverleaf (Type L-9)

See Figure 1-4 Alternative 1 Spread Diamond (Type L-2) and Figure 1-5 Alternative 2 Partial Cloverleaf (Type L-9) at the end of this chapter to see each alternative overlaying aerial photography of the project area.

Alternatives 1 and 2 are standard interchange designs for state roadways in California. The alternatives would construct a new overcrossing structure with room for four lanes, shoulders and sidewalks. New intersections would be installed on American Avenue where the new on- and off-ramps meet American Avenue and would include signals and lighting, sidewalks, curb and gutter. These are located to the west and east of the new overcrossing, according to each alternative design. Four lanes would be paved and striped from the new interchange along American Avenue through the on- and off-ramp intersections, and then would taper down to two lanes. To the west, four lanes would drop to two lanes before the driveway at the County Juvenile Justice Campus; to the east, four lanes would taper down and end before intersecting Golden State Boulevard. The signals at the Juvenile Justice Campus intersection may be updated.

North Avenue

Two alternatives are proposed at North Avenue:

- Alternative 2 Modified Partial Cloverleaf (Type L-9)
- Alternative 4 Diverging Diamond Interchange (DDI)

See Figure 1-6 Alternative 2 Modified Partial Cloverleaf (Type L-9) and Figure 1-7 Alternative 4 Diverging Diamond Interchange (DDI) at the end of this section to see each alternative overlaying aerial photography of the project area.

Alternative 2 is a modification of a standard cloverleaf design to fit into the current built environment. Alternative 4 is being considered for this location because the design can support the largest volume of traffic effectively, and it requires the least amount of right-of-way compared to other options.

In addition to the proposed features described for all build alternatives, each of the build alternatives proposed at North Avenue would improve the intersections where North Avenue and Orange Avenue meet, west of the interchange, and where North Avenue and Cedar Avenue meet to the east.

North Avenue would be paved and striped for four lanes from the new interchange, west and east, to the intersections at Orange Avenue and Cedar Avenue, and then taper down to two lanes. Left-turn pockets would be installed at all four legs of these intersections. Intersections where the on- and off-ramps meet at North Avenue would also include signals and lighting, with sidewalks and crosswalks. The alternatives would remove the existing northbound off-ramp and southbound on-ramp to and from Cedar Avenue.

All build alternatives proposed at North Avenue would include the realignment of the north end of Parkway Drive to connect with Orange Avenue instead of at North Avenue. Currently, Parkway Drive is a frontage road just west of State Route 99 between Cedar Avenue and North Avenue.

The proposed improvements for the project include bicycle and pedestrian facilities at both American Avenue and North Avenue. These facilities would complete gaps in existing pedestrian circulation and/or connect to bicycle facilities and would be in line with the most recent planning. Caltrans would continue to coordinate with the County and City to design the details of these facilities.

Common Design Features of the Build Alternatives

All proposed alternatives would include construction of the following features:

- New bridge structure crossing over State Route 99—Overcrossings would include the width for four through lanes, two lanes for each direction of traffic, plus shoulders wide enough for bicycle use, consistent with local bicycle facilities planning.
- On- and off-ramps—Ramps would be installed for all directions of travel at each interchange with updated ramp dimensions and number of lanes, including ramp metering technology.

- Remove on- and off-ramps at Cedar Avenue—The ramps would be closed and moved to North Avenue. The southbound on-ramp and the northbound off-ramp currently at Cedar Avenue would be removed.
- Sidewalks, crosswalks, curb and drainage gutters—These features would be installed at the interchanges, with sidewalks and crosswalks for pedestrians and curb and gutter to manage drainage.
- Signals and lighting—Signals would be installed where the on- and off-ramps meet the local road system. Continued coordination with the City and County would determine if and where overhead lights would be installed.
- Intelligent Transportation System (ITS) elements—The project would replace and install new Intelligent Transportation System elements. These elements encompass a broad range of wireless and wire line communications-based information electronic technologies to improve safety, mobility, and capacity of the transportation system. This project would update existing traffic signals and install Traffic Management System elements, which may include traffic monitoring stations, ramp meters, Closed Circuit Televisions, Changeable Message Signs, Highway Advisory Radio, Extinguishable Message Signs, communications systems, Active Traffic Management, and roadway warning systems.
- Drainage system—A new drainage system would be installed to meet storm water requirements.
- Landscaping—Caltrans standards require replacement landscaping for any landscaping removed by the project. Replacement landscaping would be installed at the end of construction for the project or in the future as a separate project.
- Bicycle and pedestrian facilities—Design plans at each interchange would accommodate area for a bicycle path in accordance with Caltrans design standards and consideration of the 2017 City of Fresno Active Transportation Plan. Sidewalks and crosswalks would be constructed to Caltrans design standards. The extent of sidewalks and type of bicycle facilities would be determined as Caltrans continues to coordinate with the County and City.
- Night work—Night work is anticipated to complete demolition of the existing bridge structures.
- Traffic Management Plan—In compliance with Caltrans standards, a plan would be developed to manage construction activities and vehicle traffic during construction. This includes addressing detours, operations during night work, signs for traffic management, and notification to emergency services, local business and residents, and the traveling public. Traffic control signs would be placed in the existing right-of-way during construction.

- All transportation features would be constructed to meet requirements of the 1990 Americans with Disabilities Act.

Unique Features of the Build Alternatives

Below is a discussion of the unique features of the build alternatives at each interchange location.

American Avenue

- Roundabout intersections—Roundabout intersections are being considered for the ramp terminal intersections where the on- and off-ramps meet on American Avenue. These intersections would typically be designed as standard four-way intersections. Both Alternatives 1 and 2 propose the consideration of a roundabout intersection. Traffic studies show that roundabouts can be safer, under certain conditions, and are viewed as beneficial to slow through traffic down and reduce right-angle collisions at intersections. Coordination would continue with Fresno County to determine whether roundabouts would be installed.
- Monument—A “Welcome to Fresno” monument with lighting is in the southeast quadrant of the interchange at American Avenue. The design would include measures to either protect the monument or move the monument to a new location.

North Avenue

- Diverging Diamond Interchange—The proposed Alternative 4 Diverging Diamond Interchange configuration is not a common interchange type on State Route 99 today, but examples can be found in other parts of California and other states in the U.S. One of the unique features of this interchange type is the method of weaving or braiding traffic lanes to facilitate a smoother flow of traffic through the interchange. The design requires less space and supports a greater volume of traffic, with fewer traffic accidents compared to other standard interchange types.
- Roundabout intersections—Roundabout intersections are being considered for the ramp terminal intersections where on- and off-ramps meet on North Avenue. Alternative 2 proposes the roundabout intersection type. This intersection type would not be effective in the proposed Alternative 4 Diverging Diamond Interchange configuration; however, this intersection type could be considered for other local street intersections such as the North Avenue and Orange Avenue intersection and the North Avenue and Cedar Avenue intersection. Coordination would continue with the City of Fresno to determine whether roundabouts would be installed at intersections.

1.4.2 No-Build (No-Action) Alternative

A No-Build Alternative is considered at each of the interchange locations. The No-Build Alternative represents the current conditions, and the conditions if

no improvements were made in the future. For this project, selection of a No-Build Alternative would mean the half-interchanges would remain with missing on- and off-ramps. There would be continuing deterioration of driving conditions as more traffic congestion, delay, and vehicle idling occur, contributing to the main source of toxic air emissions and further deterioration of air quality at the interchanges. Stop-and-go and circuitous out-of-direction travel would continue and worsen, while more potholes and cracks would occur in the deteriorating pavement, making driving in the area even more difficult.

1.5 Comparison of Alternatives

Two build alternatives are proposed at American Avenue, and two build alternatives are proposed at North Avenue. All build alternatives propose to reconstruct the existing overcrossings, construct on- and off-ramps to form complete full interchanges, with sidewalks, curb and gutter, lighting and signalization, and a stormwater system. The existing half interchange ramps at Cedar Avenue would be closed.

The following tables provide a comparison of the cost and potential impacts identified for each of the proposed alternatives at each interchange location. For further discussion of the environmental impacts, see Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures. Chapter 3 California Environmental Quality Act Evaluation contains the California Environmental Quality Act -specific significance determinations.

Table 1-4 Comparison of Alternatives at American Avenue

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Interchange Type	Spread Diamond (Type L-2)	Partial Cloverleaf (Type L-9)	Partial Interchange
Projected Cost Estimates (2026)	$48,760,000	$54,421,000	$0
Land Use—Property Converted to Transportation	21.72 acres, 7 properties	14.91 acres, 7 properties	0 properties. No land use would change.
Relocations and Real Property Acquisition—Business Displacements	1 farm office, equipment and irrigation may be displaced.	Acquisition of property. Driveway entrance may be relocated farther east.	No businesses relocated.
Relocations and Real Property Acquisition—Housing Displacements	1 farmhouse may be displaced.	Acquisition of property. Driveway entrance may be relocated farther east.	No residents relocated.

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Relocations and Real Property Acquisition—Utility Service Relocation	Relocate utilities. Temporary intermittent service during construction.	Relocate utilities. Temporary intermittent service during construction.	No impact
Traffic and Transportation/ Pedestrian and Bicycle Facilities	Improved access to roadways, pedestrian and bicycle facilities. Temporary delays and detours during construction.	Improved access to roadways, pedestrian and bicycle facilities. Temporary delays and detours during construction.	No improved traffic conditions. No improved pedestrian or bicycle facilities.
Visual/Aesthetics	No impact with replacement planting.	No impact with replacement planting.	No impacts
Paleontology	Potential to uncover fossils. Construction monitoring and recovery included.	Potential to uncover fossils. Construction monitoring and recovery included.	No impact.
Hazardous Waste and Materials	7 properties with hazardous waste.	7 properties with hazardous waste.	No remediation of hazardous materials.
Air Quality	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	No transportation improvements. Air quality would worsen with time as population and land use increase, and stop-and-go and delay increase on local streets.
Animal Species	Preconstruction surveys for migratory birds and bats to ensure no impact.	Preconstruction surveys for migratory birds and bats to ensure no impact.	No impact.
Climate Change (Does not consider emissions on the local street system)	In 2046, 3,414 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 3,414 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 545 tons above the 2019 Existing, Baseline CO_2 emissions, with no project improvements.

Table 1-5 Comparison of Alternatives at North Avenue

Potential Impact	Alternative 2	Alternative 4	No-Build Alternative
Interchange Types	Modified Partial Cloverleaf (Type L-9)	Diverging Diamond Interchange (DDI)	Split Interchange
Projected Cost Estimates (2026)	$83,923,000	$70,674,000	$0
Land Use—Property Converted to Transportation	20.06 acres, 25 properties	15.01 acres, 20 properties	No land use would change. 0 properties affected.
Relocations and Real Property Acquisition—Business Displacements	3 units potentially impacted.	2 units potentially impacted.	No units impacted.
Relocations and Real Property Acquisition—Utility Service Relocation	Relocate utilities. Temporary intermittent service during construction.	Relocate utilities. Temporary intermittent service during construction.	No impact.
Traffic and Transportation/ Pedestrian and Bicycle Facilities	Project improves roadways, with pedestrian and bicycle facilities.	Project improves roadways, with pedestrian and bicycle facilities.	No improvements to roadways or for pedestrians and bicycles.
Visual/Aesthetics	No impact with replacement planting.	No impact with replacement planting.	No improvement plantings.
Paleontology	Potential to uncover fossils. Construction monitoring and recovery included.	Potential to uncover fossils. Construction monitoring and recovery included.	No impact to paleontology resources.
Hazardous Waste and Materials	29 properties with hazardous waste.	25 properties with hazardous waste.	No remediation of hazardous materials.
Air Quality	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	Not a Project of Air Quality Concern. Meets federal and state conformity standards for ambient air emissions in 2018 Regional Transportation Plan/Sustainable Communities Strategies.	No transportation improvements. Air quality would worsen with time as population and land use increase, and stop-and-go and delay increase on local streets.

Potential Impact	Alternative 2	Alternative 4	No-Build Alternative
Animal Species	Preconstruction surveys for migratory birds and bats to ensure no impact.	Preconstruction surveys for migratory birds and bats to ensure no impact.	No impact.
Climate Change (Does not consider emissions on the local street system)	In 2046, 4,281 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 4,281 tons above the 2019 Existing, Baseline CO_2 emissions.	In 2046, 2,121 tons above the 2019 Existing, Baseline CO_2 emissions, with no project improvements.

After public circulation of this draft environmental document, all comments will be considered, and Caltrans will select a "preferred" alternative for each of the interchange locations.

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 would not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans would then file a Notice of Determination with the State Clearinghouse that would identify whether the project would have significant impacts, 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 the National Environmental Policy Act action does not significantly impact the environment, Caltrans would 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 would be prepared.

1.6 Alternatives Considered but Eliminated from Further Discussion

Alternatives at Central and Chestnut

The alternatives presented at Central and Chestnut Avenues were removed from this project due to funding complications. It is anticipated that a separate project would be completed in the future for improvements to Central and Chestnut Avenues when funding is available.

Alternatives 1 and 3 at North Avenue

Two alternatives were removed from further consideration for the North Avenue interchange. Alternative 1 and Alternative 3 were removed because

their respective designs far exceeded planned costs identified in the regional transportation plan from the available transportation funding sources. Also, e Alternative 1 would require property from a hazardous waste Superfund Site. Both alternatives would require the relocation of a local foodbank that provides services for a large population.

Transportation System Management, Transportation Demand Management, and Mass Transit Alternatives

Transportation System Management, Transportation Demand Management, and Mass Transit alternatives are not being considered as viable alternatives in the environmental document because they would not satisfy the purpose and need of the project. Although these alternatives are not viable on their own, there are features included in the proposed improvements that align with regional strategies to reduce the vehicle miles traveled and increase the efficiency of existing facilities through operational improvements. The Build Alternatives have incorporated traffic signals, lighting, sidewalks and crosswalks at intersections. Additionally, bicycle and pedestrian facilities are included, which aim to fill gaps in existing pedestrian circulation and/or connect to bicycle facilities, which is in line with planning in the area.

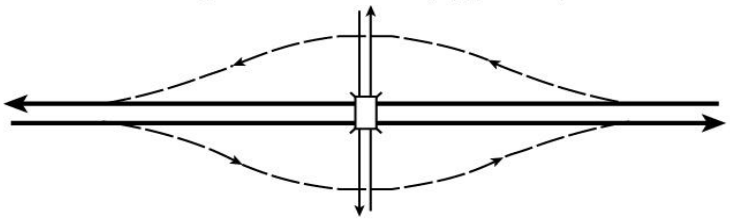
1.7 Permits and Approvals Needed

A 1600 Permit and Waste Discharge Requirement (WDR) from the California Department of Fish and Wildlife would be required for work disturbing the North Colony Canal located on north side of North Avenue, east of the intersection with Cedar Avenue.

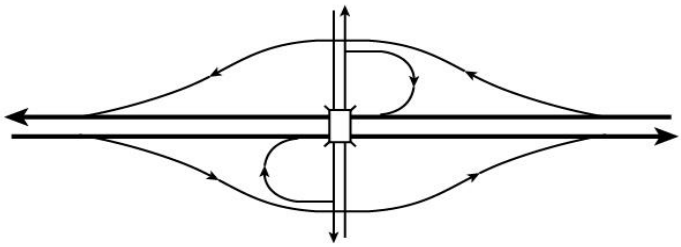
Agency	PLAC	Status
California Department of Fish and Wildlife	Fish and Game Code 1600 Permit, required for work at canals.	1600 Permit is obtained prior to start of construction.

Figure 1-3 Typical Interchange Configuration Types

Spread Diamond (Type L-2)



Partial Cloverleaf (Type L-9)



Diverging Diamond (DDI)

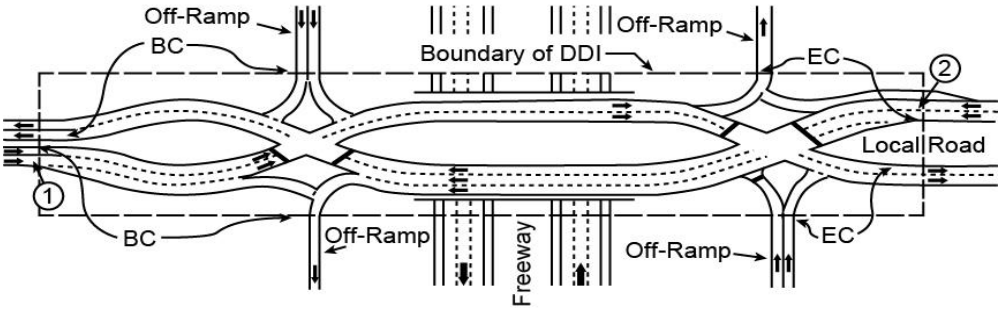


Figure 1-4 Alternative 1 Spread Diamond (Type L-2) at American Avenue

Figure 1-5 Alternative 2 Partial Cloverleaf (Type L-9) at American Avenue

Figure 1-6 Alternative 2 Modified Partial Cloverleaf (Type L-9) at North Avenue

Figure 1-7 Alternative 4 Diverging Diamond Interchange (DDI) at North Avenue

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 topics were studied, with no adverse impacts identified, therefore there is no further discussion of these topics in this document.

Coastal Zone—The project is not within the coastal zone boundary as defined by the California Coastal Act of 1976, and Public Resources Code Division 20, Section 30103(b) defining the coastal zone boundary.

Community Character and Cohesion—In-depth community studies were conducted of the project area and the surrounding area throughout 2019 and 2020. The studies found no neighborhoods in or close to the project area. The project area is made up of industrial and commercial businesses. In response to the California Environmental Quality Act scoping information widely distributed in spring 2019, Caltrans received written contact from the local California Highway Patrol, the Community Regional Medical Center, and the Fresno Fire Department supporting the proposed improvements at the interchanges. (Community Impact Assessment Memo dated August 2020)

Consistency with State, Regional, and Local Plans and Programs—Proponents of the project are the City of Fresno, Fresno County, Fresno Council of Governments and Fresno Transportation Authority. The project improves an existing facility and conforms with all respective state, regional and local plans and programs for the project area. (Community Impact Assessment Memo dated August 2020)

Cultural Resources—Pursuant to Section 106 Programmatic Agreement Stipulation IX.A and as applicable Public Resources Code 5024 Memorandum of Understanding, as applicable, Public Resources Code 5024 Memorandum of Understanding Stipulation IX.A.2, a Historic Property Survey Report was completed in May 2020 and was subsequently submitted to the State Historic Preservation Officer for concurrence on Caltrans' finding of "No Historic Properties Affected" because there "are no historic properties within the Area of Potential Effect." No previously recorded Native American resources were found within a 1-mile radius of the project. Ten tribes were contacted several times; their responses showed no interest in the project.

The State Historic Preservation Officer concurred with the project findings in a letter dated June 23, 2020.

Emergency Services—The project would improve response times for emergency service providers to respond to emergencies in the project area and the surrounding area. In response to the California Environmental Quality Act scoping information widely distributed in spring 2019, Caltrans received written contact from the local California Highway Patrol, the Community Regional Medical Center, and the Fresno Fire Department supporting the proposed improvements at the interchanges. (Community Impact Assessment Memo dated August 2020)

Energy—The project would not result in wasteful, inefficient, or unnecessary consumption of energy, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Caltrans is required to meet an extensive array of requirements to conserve, reuse and recycle materials and to require conservation practices during operation and construction activities, as overseen by agencies with regulatory oversight responsibility. The project would comply with all federal, state and local rules and regulations to this effect. (2018, Caltrans Standard Plans and Specifications, as amended)

Environmental Justice—No minority or low-income populations were identified in the project area. There are only industrial and commercial businesses in the project area, with the closest residential neighborhoods over 2 miles away. The project area would provide improved access and emergency response for sensitive populations living in the outlying area. The project would not cause disproportionately high adverse effects on any minority or low-income populations in accordance with the provisions of Executive Order 12898. No further environmental justice analysis is required. (Studies conducted during 2019 and 2020 in the project area and communities located in the outlying area. Community Impact Assessment Memo dated August 2020)

In addition, the project conforms to the Fresno Council of Governments 2018-2046 Regional Transportation Plan/Sustainable Communities Strategies, as amended, and the supporting 2018 Environmental Justice Study, finding that environmental justice communities are not disproportionately burdened by high and adverse effects with implementation of the 2018 Regional Transportation Plan/Sustainable Communities Strategies, and that they do share equitably in the benefits from the transportation plan. Also, the project conforms with the provisions of Title VI of the Civil Rights Act of 1964, the Federal-Aid Highway Act of 1973, the Age Discrimination Act of 1975, the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. The project conforms with California Government Code Section 11135, which prohibits discrimination on the basis of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical

disability, medical condition, genetic information, marital status, or sexual orientation by any agency receiving state funding.

Farmland—A Farmland Conversion Rating form (NRCS-CPA-106) was submitted to the Natural Resources Conservation Service for evaluation. See Appendix C to view the form. The Service agreed that the land is considered to be "committed to urban development" because the land converted would be narrow strips along the highway, where most properties are zoned for industrial and commercial use, with only one property zoned for agricultural use, and no properties under Williamson Act contract. According to the Farmland Protection Policy Act, as amended, the land is therefore "not to be considered as farmland." (Farmland Conversion Rating form [NRCS-CPA-106] with Natural Resources Conservation Service concurrence October 10, 2019)

Geology/Soils/Seismic/Topography—There are no major topographic or geologic features or faults within or near the project area. (U.S. Geological Survey mapping of the area)

Growth—There are no apparent pressures from the project that would encourage unplanned growth. The project would improve the operations of two existing interchanges. The project area is designated as an industrial and commercial zone by the County and City of Fresno where there is a consistent vision for land use in the transportation corridor to support traditional and emerging industrial and commercial business activities in a designated industrial priority area to serve the future economic health of the region. Most properties at the interchanges have been zoned in accordance with the general planning for the area. When representatives at the County of Fresno Public Works and Planning Department and the City of Fresno Public Works Department were interviewed in October 2020, they noted there are no plans to develop beyond the existing general planning and there are no specific plans or environmental documents being reviewed to indicate a change in the project area. (Community Impact Assessment Memo dated August 2020)

Hydrology and Floodplain—The project is not located within a 100-year base floodplain. A Location Hydraulic Study and Floodplain Evaluation Summary Report (November 2018) was prepared for the project. Flood Insurance Rate Maps dated February 18, 2009 indicate the project area is located in "Zone X." "Zone X" is defined as outside the 0.2 percent annual chance floodplain. The project complies with Executive Order 11988 (Floodplain Management) as outlined in 23 Code of Federal Regulations 650 Subpart A, which directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains.

Invasive Species—The project would comply with the executive order on invasive species (Executive Order 13112) and guidance from the Federal

Highway Administration. The landscaping and erosion control included in the project would not use species listed as invasive. None of the species on the California list of invasive species is used by Caltrans for erosion control or landscaping along State Route 99. All equipment and materials would be inspected for the presence of invasive species and cleaned if necessary. In areas of particular sensitivity, extra precautions would be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur. No impacts would occur with implementation of Caltrans standard measures to avoid propagating invasive species. (Natural Environment Study – Minimal Impact dated July 2019)

Noise and Vibration—A Noise Study Report was completed for the project (August 2020) to comply with Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects (May 2011). The study found there would be no long-term noise impacts from the build alternatives and, with implementation of avoidance and minimization measures, short-term construction noise would be minimized. No abatement is required.

Natural Communities—The project would not affect riparian habitat or other sensitive natural communities of concern. No impacts would occur to wildlife corridors, nor would the project cause fragmentation of habitat, because the proposed improvements would be made to existing infrastructure. Field studies concluded none of these resources are present in the area nor were they found in the database query. A California Natural Diversity Database query of the Fresno South and Malaga U.S. Geological Survey 71/2-minute quadrangle map found no natural communities of special concern in the project area, as updated in December 2020. (Natural Environment Study – Minimal Impact dated July 2019)

Parks and Recreation—Community studies conducted in the spring and summer of 2019 found no parks or recreational facilities in the project area. The closest—Malaga Community Park and Recreation Center—is in the community of Malaga, about 2.2 miles away. There would be no direct or indirect negative effects, and the project would not affect facilities that are protected by the Park Preservation Act (California Public Resources Code Sections 5400-5409). (Community Impact Assessment Memo dated August 2020)

Plant Species—According to the Natural Environment Study – Minimal Impact (July 2019) completed for this project, no state or federally listed or candidate plant species are expected to be present or affected by the project because no known special-status species meet the status requirements. Field studies were conducted, and species lists were obtained from the U.S. Fish and Wildlife Service, the Natural Diversity Database from the California Department of Fish and Wildlife, and the Rare and Endangered Plant Inventory from the California Native Plant Society, updated December 30,

2020. A record search found no threatened and endangered species or critical habitat for state or federally listed species exists within the study area, as well as no special-status plants were found during field studies of the project area. (Natural Environment Study dated July 2019)

Population and Housing—The project would not negatively impact an existing population or housing because the project would not remove homes or propose new homes in the area. The project does not propose any features that would support the extension of the necessary roads or infrastructure. Also, there is no indication the City or County is proposing housing development in the project area because the land is intended for industrial and commercial use. Per consultation with the Fresno County Department of Public Works and Planning and with the City of Fresno Public Works Long-Range Planning Department, there are no projects in construction, near construction, or planned for construction to add more population and/or housing in the vicinity of the project (2019). (Community Impact Assessment Memo dated August 2020)

Section 4(f)—There are no historic sites, parks and recreational resources, or wildlife or waterfowl refuges that meet the definition of a Section 4(f) resource within the project vicinity. Therefore, the project is not subject to the provisions of Section 4(f) of the Department of Transportation Act of 1966. No Section 4(f) resources would be impacted by the project, according to requirements of the Federal Highway Administration 23 Code of Federal Regulations 774 to protect park and recreation lands, wildlife and waterfowl refuges, and historic sites.

Section 6(f)—There are no properties proposed for conversion to non-recreational purposes that were acquired or developed using grants issued under the Land and Water Conservation Fund Act and prohibited from conversion in Section 6(f) of the Act.

Timberland—There are no timber resources in the project vicinity.

Threatened and Endangered Species—A Natural Environment Study completed in July 2019 determined that no threatened and endangered species or designated critical habitat for state or federally listed species exists within the study area. Species lists were obtained from the U.S. Fish and Wildlife Service, the Natural Diversity Database from the California Department of Fish and Wildlife, and the Rare and Endangered Plant Inventory from the California Native Plant Society, updated December 30, 2020. The project lies outside of the jurisdiction of the National Oceanic and Atmospheric Administration's National Marine Fisheries Service; therefore, a National Oceanic and Atmospheric Administration's National Marine Fisheries Service species list is not required and no effects to such species are anticipated. Therefore, in accordance with Section 7 of the Endangered

Species Act, the project would have "no effect" on any federally listed or candidate species.

Vehicle Miles Traveled—The project is in compliance with Caltrans Policy Memo (September 10, 2020) regarding analysis of transportation impacts under the California Environmental Quality Act for projects on the State Highway System, as well as the Caltrans Transportation Analysis Framework and Transportation Analysis under the California Environmental Quality Act guide to implementation of Senate Bill 743 (Steinberg, 2013) codified at Public Resources Code Section 21099. Therefore, the project meets criteria set forth in the policy memo and Attachment A that defines this project "*as a project type that is unaffected by the use of vehicle miles traveled*" as a measure of transportation impacts because "*the project type is assumed to not lead to a measurable and substantial increase in vehicle miles traveled*".

Water Quality and Storm Water Runoff—A Water Quality Report (February 2019) completed for the project found there would be no impact to water quality because there are no natural water bodies in the area. No effects to groundwater are anticipated. No irrigation canals would be affected by construction of the project. If this changes during the design phase and impacts are identified, the Fresno Irrigation District would be consulted, as would the California Department of Fish and Wildlife and the California Regional Water Quality Control Board to obtain 1600 and 401 Permits. The project would comply with the Caltrans Statewide Storm Water Permit (MS4).

Wetlands and Other Waters—A Natural Environment Study completed in July 2019 determined that the project does not intersect jurisdictional waters, and therefore no wetlands or other waters would be impacted and no 404 Permit from the U.S. Army Corps of Engineer would be required.

Wild and Scenic Rivers—There are no rivers in the project location.

Wildfire—The project lies in a large valley, surrounded mostly by urban development, with some non-urbanized land irrigated and planted with orchard trees. The project is not considered to be in an area identified as vulnerable to wildfires on the Caltrans District 6 Climate Change Vulnerability Map and geographic information system database designed to assess vulnerabilities from climate change.

2.1 Human Environment

2.1.1 Existing and Future Land Use

The following discussion focuses on the existing and future land use planning in the project area and the potential for property to be acquired and converted from its current designated use to transportation use.

Affected Environment

American Avenue and North Avenue

The proposed improvements lie within the planning jurisdiction of Fresno County and the City of Fresno. The proposed improvements to American Avenue lie within the jurisdiction of Fresno County in a planned area referred to as the Golden State Industrial Corridor. See Figure 2-1 Fresno County Zoning Map for a map of the county's current land use zoning of properties in the project area. The proposed improvements at North Avenue lie within the jurisdiction of the City of Fresno in an area referred to as the North Avenue Industrial Triangle. See Figure 2-2 City of Fresno Zoning Map for a map of the city's land use zoning of the project area.

The future land use planning or vision for the project area is generally consistent between the county and the city planning documents, which support industrial and commercial business uses within the transportation corridor to promote economic and employment development for the region.

Both county and city local planning documents for the area discuss promoting traditional and emerging industries suited to the location, such as development of agricultural technologies and agricultural services, food innovation and processing facilities, supply chain management, water technology, precision manufacturing, medical industries, and green industries such as solar, biofuels, recycling and other forms of alternative energy. The transportation corridor is viewed as an asset to business and industry in the area because it includes a major state highway, intersecting local and regional roads, and rail lines, including the California High-Speed Rail. State Route 99 is one of the state's critical transportation corridors for the movement of goods and services through the region, state and beyond.

Existing land uses in the project area are defined by zoning decisions made by the County and City. Zoning is the process of dividing land into zones (residential, industrial, commercial, and so on) in which certain land uses are permitted or prohibited to carry out county and city general planning goals. The land uses currently zoned match the future planned vision for the area.

In the project area, 40 properties could potentially be affected by the proposed alternatives: eight properties at American Avenue and 32 properties at North Avenue. Of these properties, 15 properties are zoned for industrial uses, 8 for commercial use, 8 are owned by the State of California with no use specifically identified, 2 for transportation, 2 for residential, 2 are zoned for agriculture, 1 is zoned vacant land, 1 is owned by the Fresno Irrigation District, and 1 is owned by Fresno County with no uses specifically identified.

Table 2-1 Zoning of Properties by Interchange shows each property by Assessor's Parcel Number with the land use designation established by the city and county for each interchange location. This information came from LandVision, a map-based application tool on the internet that provides real

estate, government and other industries with comprehensive property information.

Table 2-1 Zoning of Properties by Interchange

Assessor's Parcel Number	Land Use Designations	Interchange
331-140-23	Residential, Single-Family Residence	American Avenue
331-110-13S	Vacant Land, Industrial	American Avenue
331-110-35	Vacant Land, Miscellaneous Vacant Land	American Avenue
331-110-34	Commercial, Stores, Retail Outlet	American Avenue
340-060-44T	Fresno County - No designation	American Avenue
340-060-22	Agriculture, Orchards, Groves	American Avenue
331-110-11	Residential, Miscellaneous Residential	American Avenue
340-060-20	Industrial, Warehouse, Storage	American Avenue
330-021-36S	Vacant Land, Industrial	North Avenue
330-021-60S	Vacant Land, Industrial	North Avenue
330-021-01	Vacant Land, Industrial	North Avenue
330-021-13S	Agricultural, Farms, Crops	North Avenue
330-021-12T	Vacant Land, Industrial	North Avenue
330-021-05	Miscellaneous, Transportation, Air, Rail, Bus	North Avenue
330-021-04	Commercial, Service Station, Gas Station	North Avenue
487-031-52	Industrial, Warehouse, Storage	North Avenue
487-031-54	Industrial, Warehouse, Storage	North Avenue
487-031-62	Industrial, Warehouse, Storage	North Avenue
487-031-63	Industrial, Warehouse, Storage	North Avenue
487-140-32	Industrial, Warehouse, Storage	North Avenue
487-140-51	Industrial, Warehouse, Storage	North Avenue
487-180-08T	State of California	North Avenue
487-180-07T	State of California	North Avenue
487-180-09T	State of California	North Avenue
487-180-06T	State of California	North Avenue
487-180-17T	State of California	North Avenue
487-180-16T	State of California	North Avenue
487-180-15	Commercial, Auto Sales, Services	North Avenue
330-040-24S	Commercial, Service Station, Gas Station	North Avenue

Assessor's Parcel Number	Land Use Designations	Interchange
487-180-03	Vacant Land, Industrial	North Avenue
487-180-18	Commercial, Auto Sales, Services	North Avenue
487-180-14T	State of California	North Avenue
330-021-07T	State of California—High-Speed Rail	North Avenue
330-040-60	Industrial, Warehouse, Storage	North Avenue
330-040-61	Vacant Land, Industrial	North Avenue
330-040-48S	Miscellaneous, Transportation, Air, Rail, Bus	North Avenue
330-040-36S	Commercial, Office Building	North Avenue
487-020-15T	Fresno Irrigation District	North Avenue
487-180-18	Commercial, Auto Sales, Services	North Avenue
330-040-37S	Commercial, Auto Sales, Services	North Avenue

Source: LandVision, 2020.

Fresno County has prepared and published a plan review every five years to incorporate all amendments into its general plan. In the 2017 Plan Review, of the 2000 Fresno County General Plan, there are specific goals and policies that address the project area, as follows:

- The County shall encourage the location of new industry within Fresno County.
- The County shall identify circumstances and criteria for locating new industrial locations and uses in the unincorporated areas consistent with the County's economic development strategies.
- Initial focus of potential new or redeveloped industrial areas shall include Malaga, Calwa, and the Golden State Industrial Corridor.

See Figure 2-1 Fresno County Zoning Map to see existing land use designations in the American Avenue area.

Beginning as early as 1917, the City of Fresno recognized the importance of the area south of downtown for its proximity to railroads and later highways. Each General Plan from 1956 onward has reiterated the importance of this industrial area to the economic stability of Fresno. Five key planning documents show the City's attempts to develop areas for industrial use along the transportation corridor and implement policies to improve the quality of life in the neighborhoods and residential areas outside and away from the industrial area:

- 1973 – North Avenue Industrial Triangle Specific Plan
- 1992 – Roosevelt Community Plan

- 2014 – City of Fresno General Plan
- 2016 – Downtown Neighborhoods Community Plan
- 2017 – Southwest Fresno Specific Plan

Through these adopted plans, the City has not only worked on behalf of businesses to provide opportunities for development interests in the project area, but it has also worked to improve conditions and the quality of life in the surrounding local communities. There are no residential neighborhoods in the project area, and the city (through the above listed plans) has made it a priority to also allocate funding and resources for communities to the north, northeast and northwest of the project area, to specifically provide for neighborhood development and services away from the industrial corridor.

Through the Roosevelt Community Plan adopted in 1992, the City implemented measures to remove barriers for funding of small business loans and projects for revitalization of neighborhoods in southwest Fresno, located north and northwest of the project area. The City also worked with neighboring communities to study and adopt the Downtown Neighborhoods Community Plan in 2016 and the Southwest Fresno Specific Plan in 2017.

The City conducted extensive public outreach to engage community members in the planning to implement new housing and programs supporting home ownership; to open opportunities for grocery stores and other retail shops to open closer to these neighborhoods; to install improved city services; to support safety, create more connectivity in the street system for all transportation modes, make improvements to parks, and provide educational and job training opportunities. These plans also included direction to locate industrial activity away from neighborhoods to areas such as the Industrial Triangle area.

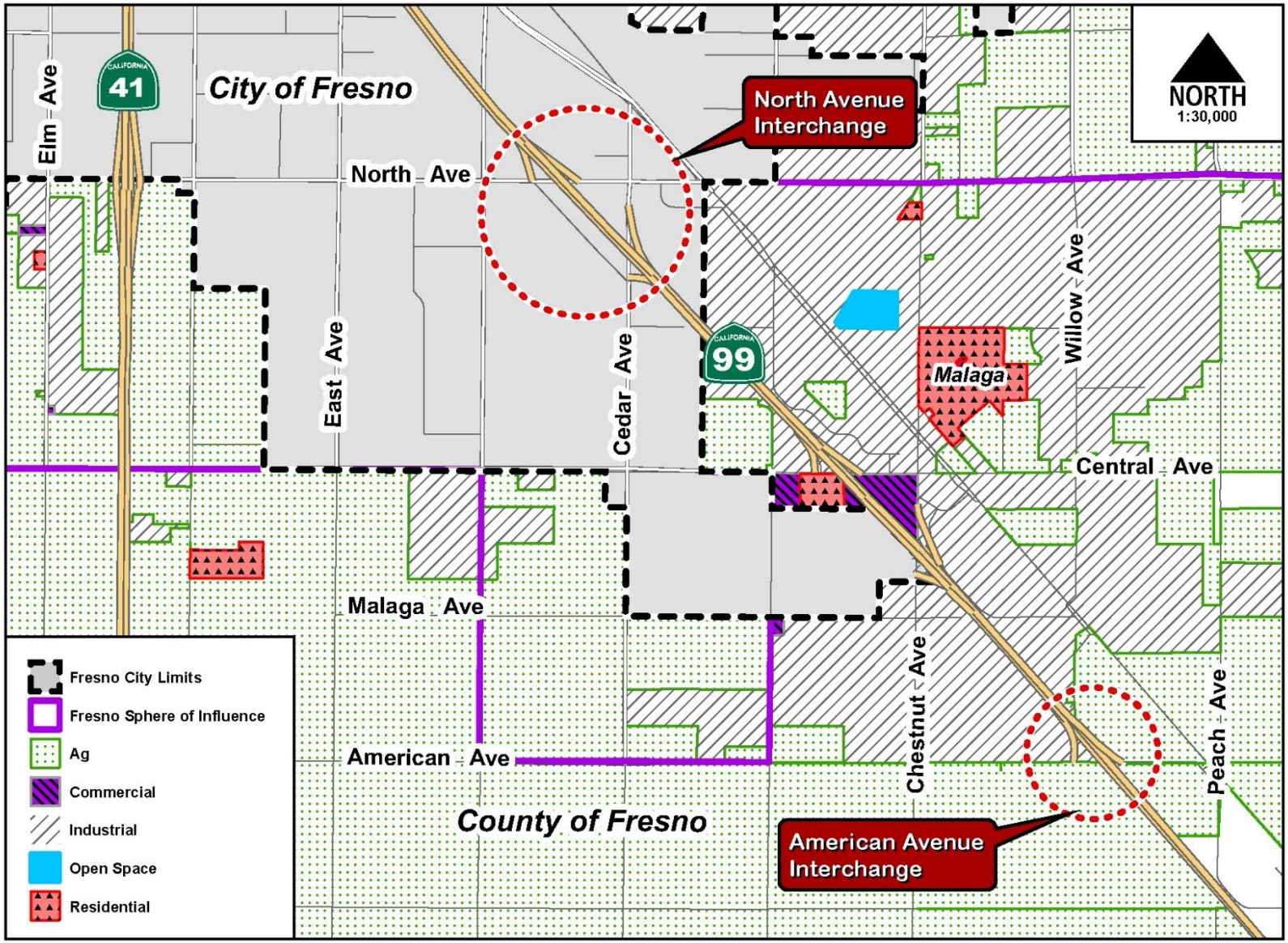
The North Avenue Industrial Triangle – Specific Plan adopted in 1973 represents the City's long standing intention to place industrial and commercial uses in the area where the North Avenue interchange is proposed. In March 2019, the City began work on an updated plan for the area, now titled the "South Central Specific Plan" (previously the South Industrial Priority Area) which will consolidate all of the adopted policies for the area with an expansion of the area boundary to the south within the city's sphere of influence boundary. The city rereleased a Notice of Preparation to conduct environmental studies and prepare an environmental document on March 24, 2021. The city held public meetings and received public comments about the project from March 24, 2021 until May 14, 2021.

The new plan will describe the City's intent to address obstacles encountered by businesses looking to relocate to the Fresno area, such as the lack of sufficiently sized properties developed with city services such as water, sewer, and power so that companies can more easily move in and begin operation. The new plan continues the City's goals to set up infrastructure on

properties, especially in the State Route 99 corridor, where a variety of distribution needs can be met. See Figure 2-2 City of Fresno Zoning Map to see existing land use designations in the North Avenue area.

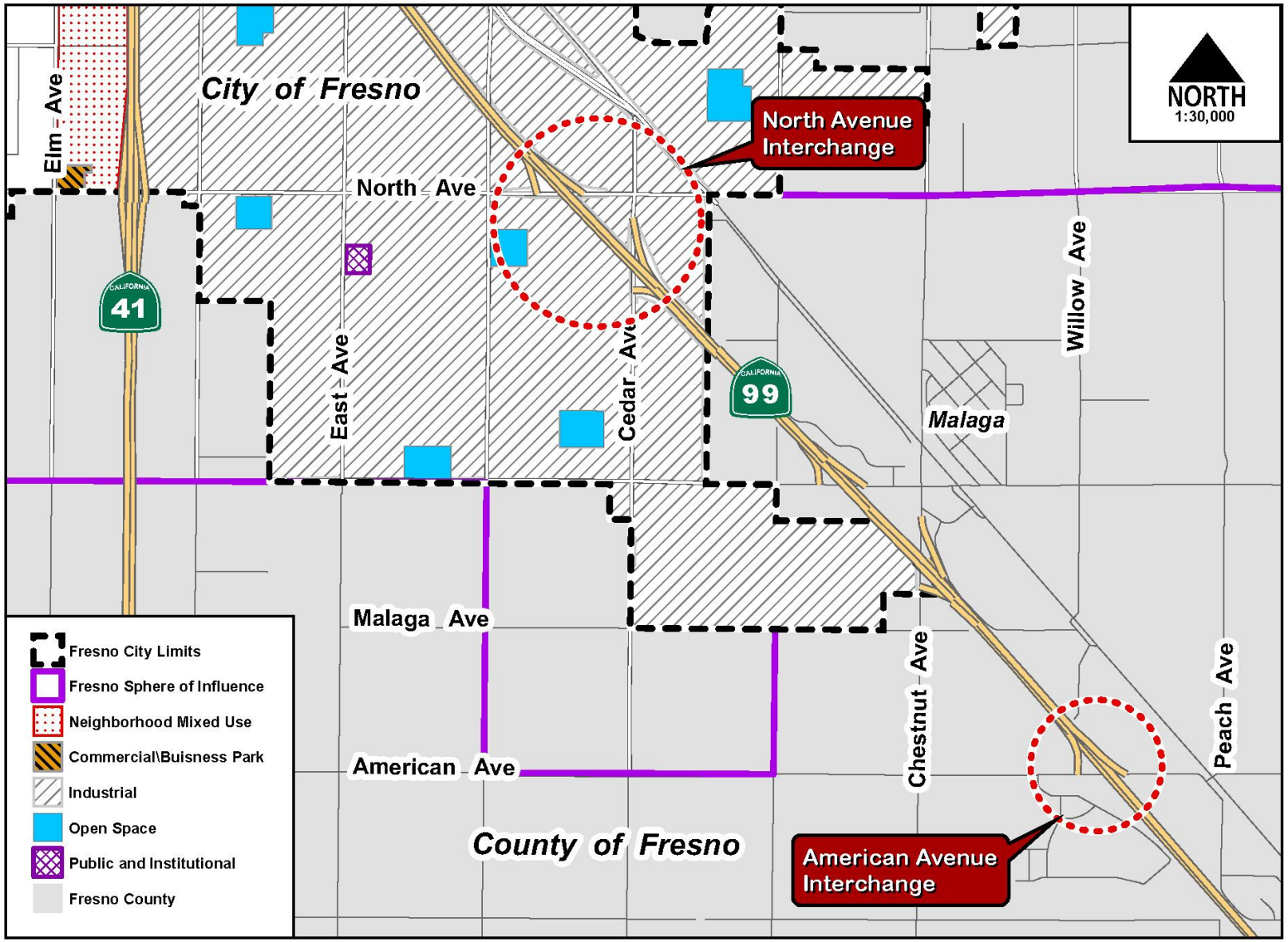
The census tracks (06-019-0015 and 06-019-0017) where the project is located have met the qualifications for “Opportunity Zone” status, which is a federal economic development program to spur investment in economically distressed neighborhoods. Investors receive tax incentives for investing in “Opportunity Zones” with long-term investments in communities that produce jobs and job training. The city and county have been actively establishing partnerships with businesses to meet these goals. The American and North interchanges serve as primary points of access for the existing and developing industrial and commercial businesses in this area. To find out more about the benefits implemented in the Fresno area for residents and businesses through this program, go to https://dashboards.mysidewalk.com/opportunity-fresno/future-fresno.

Figure 2-1 Fresno County Zoning Map



Source: Fresno County online zoning map (2020).

Figure 2-2 City of Fresno Zoning Map



Source: City of Fresno online zoning map (2020).

Environmental Consequences

While the project is consistent with the general planning for the project area, land would be purchased and converted to transportation use, mostly as slivers of land next to the existing roadways. Tables 2-2 and 2-3 show the estimates of the land required from each parcel and provides a comparison of the proposed alternatives at each interchange.

American Avenue

Eight properties were studied at American Avenue due to their proximity to the existing interchange and the two proposed build alternatives. Table 2-2 Potential Land Converted to Transportation at American Avenue shows the estimates of land in acres needed from each property and compares the proposed alternatives and the No-Build Alternative. The table shows a breakdown of these totals:

- Alternative 1 would require a total of 21.72 acres from seven properties.
- Alternative 2 would require a total of 14.91 acres from seven properties.
- The No-Build Alternative would convert no land.

Of the build alternatives, Alternative 1 would require 6.81 more acres of land than Alternative 2. Therefore, Alternative 1 would have a greater impact from land converted to transportation uses.

Both build alternatives propose to install sidewalks, curb and gutter along American Avenue. The installation may require removal of some existing sidewalk to create conformity for the entire length of new sidewalk. The location of all existing entry and exit points and driveways would be maintained according to city standards. During construction, there may be temporary interruptions in access, but this would be minimized with implementation of communication and traffic management plans.

Also, see Section 2.1.2 Relocations and Real Property Acquisition in this chapter for more details about potential impacts to properties.

No-Build Alternative

If selected, the No-Build Alternative would result in no acquisition of land, but the interchanges would still lack the missing on- and off-ramps and driving conditions would further deteriorate with increased vehicle delay. With time, more potholes and cracks would develop in the pavement, making driving in the area more difficult. The existing tight dimensions would continue to be difficult to navigate for vehicles, especially large trucks. Out-of-direction travel would continue to cause delay and unnecessary travel on local roads.

Table 2-2 Potential Land Converted to Transportation at American Avenue

Assessor's Parcel Number	Total Parcel Area (acres)	Alternative 1 Converted to Transportation (21.72 total acres, 7 properties)	Alternative 2 Converted to Transportation (14.91 total acres, 7 properties)	No-Build Alternative (0 total acre, 0 properties)
331-140-23	10.7 acres	0.30 acre	0 acre	0 acre
331-110-13S	1.41 acres	0.32 acre	0.14 acre	0 acre
331-110-35	24.09 acres	0.67 acre	2.19 acres	0 acre
331-110-34	9.46 acres	0.75 acre	2.44 acres	0 acre
340-060-44T	21.22 acres	10.06 acres	6.61 acres	0 acre
340-060-22	35.00 acres	0.35 acre	2.31 acres	0 acre
331-110-11	58.78 acres	9.27 acres	1.17 acres	0 acre
340-060-20	6.50 acres	0 acre	0.05 acre	0 acre

Source: Acreages calculated from preliminary estimates prepared by Caltrans.

North Avenue

Thirty-two properties were studied at North Avenue due to their proximity to the existing interchange and the two proposed build alternatives. Table 2-3 Potential Land Converted to Transportation at North Avenue shows the estimates of land in acres needed from each property and compares the proposed alternatives and the No-Build Alternative. The table shows a breakdown of these totals:

- Alternative 2 would require a total of 20.06 acres from 25 properties.
- Alternative 4 would require a total of 15.01 acres from 20 properties.
- The No-Build Alternative would acquire no land.

Of the build alternatives, Alternative 2 would have the highest impact, and Alternative 4 would require the least amount of land and affect the fewest properties.

Each of the build alternatives propose to install sidewalks, curb and gutter along both sides of North Avenue between Orange Avenue and Cedar Avenue as well as installing signs, signals and lighting as needed. The installation may require removal of some existing sidewalk to create conformity for the entire length of the new sidewalk. The location of all existing entry and exit points and driveways would be maintained according to city standards. During construction, there may be temporary interruptions in access, but this would be minimized with implementation of communication and traffic management plans.

At this time, no potential impacts have been identified to existing driveways or parking in the project area but, if they are in the future, all would be maintained according to city and county standards.

Also, see Section 2.1.2 Relocations and Real Property Acquisition in this chapter for more details about potential impacts to properties.

No-Build Alternative

The No-Build Alternative would result in no acquisition of land, but the interchanges would still lack the missing on- and off-ramps and driving conditions would further deteriorate as previously discussed.

Table 2-3 Potential Land Converted to Transportation at North Avenue

Assessor's Parcel Number	Total Parcel Area (acres)	Alternative 2 Converted to Transportation (20.06 total acres, 25 properties)	Alternative 4 Converted to Transportation (15.01 total acres, 20 properties)	No-Build Alternative (0 total acres, 0 properties)
330-021-36S	7.39 acres	0.06 acre	0.02 acre	0 acres
330-021-60S	10.50 acres	0.40 acre	0.31 acre	0 acres
330-021-01	1.89 acres	0.42 acre	0.73 acre	0 acres
330-021-13S	29.69 acres	2.35 acres	3.70 acres	0 acres
330-021-12T	10.00 acres	0.60 acre	0.53 acre	0 acres
330-021-05	1.64 acres	0.02 acre	0 acres	0 acres
330-021-04	5.53 acres	2.30 acres	3.01 acre	0 acres
487-031-52	4.95 acres	0.20 acre	0 acres	0 acres
487-031-54	3.25 acres	0.10 acre	0 acres	0 acres
487-031-62	2.11 acres	0.06 acre	0 acres	0 acres
487-031-63	2.31 acres	0.16 acre	0 acres	0 acres
487-140-32	9.90 acres	1.90 acres	0.59 acre	0 acres
487-140-51	10.72 acres	0.03 acre	0.03 acre	0 acres
487-180-07T	0.27 acre	4.58 acres	0 acres	0 acres
487-180-16T	0.24 acre	0.03 acre	0 acres	0 acres
487-180-15	0.42 acre	0.01 acre	0.02 acre	0 acres
330-040-24S	0.71 acre	0.03 acre	0.14 acre	0 acres
487-180-03	1.70 acres	0 acres	0.04 acre	0 acres
487-180-14T	0.001 acre	0.001 acre	0.001 acre	0 acres
330-021-07T	10.65 acres	4.58 acres	4.89 acres	0 acres
330-040-60	3.31 acres	0.77 acre	0.03 acre	0 acres
330-040-61	1.07 acres	0.54 acre	0.05 acre	0 acres
330-040-48S	4.20 acres	0.02 acre	0.01 acre	0 acres
330-040-36S	0.28 acre	0.14 acre	0.01 acre	0 acres
330-040-57S	2.71 acres	0.04 acre	0.04 acre	0 acres
487-020-15T	2.00 acres	0.72 acre	0.85 acre	0 acres
330-040-37S	0.21 acre	0 acres	0.01 acre	0 acres

Source: Acreages calculated from preliminary estimates prepared by Caltrans.

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project.

Past projects go all the way back to the beginning of the city of Fresno as a stop along the railroad line in the 1870s. The railroad defined the transportation corridor and facilitated the development of farming in the

immediate area, followed by a local road system built in a north-south, east-west grid to divide up the land for farms, and canals that still provide water to farms in the area. A major north-south road was constructed along the railroad that ran from the Mexican border in Calexico, California to the Canadian border in Blain, Washington. In 1965, the road along the railroad (State Route 99) was realigned to its current location. As the city of Fresno grew, city planners implemented planned industrial and commercial land uses along the corridor, as identified in the 1973 North Avenue Industrial Triangle Specific Plan, that slowly developed over time in conformance with the Fresno County 2018 Regional Transportation Plan and the Fresno County and City of Fresno general plans and policy documents.

Cumulatively considerable projects are as follows:

- Completion of the Central Pacific Railroad in 1870 and development of the city of Fresno as a train stop established in 1872.
- Construction of the “Golden State Highway” in 1927, later relocated west to the existing site as State Route 99 in 1965.
- Current ongoing construction of the California High-Speed Rail project through the project area.
- Two recent large land use projects in the area—an Amazon Fulfillment Center (2018) and an Ulta Beauty Distribution Center (2018).
- Continued implementation of the 2000 Fresno County General Plan with the most recent annual Plan Review, and the North Avenue Industrial Triangle – Specific Plan adopted in 1973 by the City of Fresno.
- The Fresno County Association of Governments 2018 Regional Transportation Plan.

Projects in the present and foreseeable future are to maintain State Route 99. The route concept for the highway is ultimately an eight-lane facility, but there are no plans or proposed projects for that in the Fresno County 2018 Regional Transportation Plan. The improvements to Central Avenue and Chestnut Avenue are in the regional plan, with no timeline or funding to complete the project. Several bicycle and pedestrian mobility projects are in the regional plan. The County and City have designated the zoning along State Route 99 for commercial and industrial uses in the immediate vicinity of both interchanges. The City is discussing a grade-separation of North Avenue from the existing California Highspeed Rail crossing located just east of the North Avenue interchange, but no formal plans have been proposed.

Construction of complete interchanges would reduce stop-and-go traffic and provide more direct access to and from the highway. While the 2020 traffic study projections show traffic will increase in the project area, this is primarily from predicted increased population growth and implementation of approved local planned developments, and not from construction of the project.

No changes to land use designations are anticipated with this project, except for the acquisition of mostly slivers of land along the roadway into transportation uses from this project. Maintenance of existing roads and highways would continue. Designated land use would continue to be consistent with the goals and policies of the Fresno County Association of Governments 2018 Regional Transportation Plan, the County of Fresno's General Plan as amended with the annual Plan Reviews, and the City of Fresno's 2014 General Plan. The project would not present a considerable contribution to a negative cumulative impact.

The 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.

A traffic management plan would be prepared and implemented during construction to keep traffic access open on the local streets as much as possible, with requirements to maintain access to all properties while work is underway. The plan would also include strategies to maintain regular communication with the public, emergency responders, and the railroad operators and businesses in the area.

Avoidance, Minimization, and/or Mitigation Measures

American Avenue and North Avenue

No mitigation is required for the conversion of land to transportation uses.

2.1.2 Relocations and Real Property Acquisition

Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (referred to as the 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. All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix A for a copy of the Caltrans Title VI Policy Statement and Appendix B for a summary of the Caltrans Relocation Assistance Program.

Affected Environment

A Draft Relocation Impact Report was prepared in July of 2020 to determine if the project would require the relocation of residents or businesses and what services may be needed from Caltrans Relocation Assistance Program.

The assessment analyzed 40 properties in the footprint of the proposed alternatives at the American Avenue and North Avenue interchanges. The following section is a summary of the findings from the report. For a list of the properties evaluated, see Table 2-1 Zoning of Properties by Interchange in Section 2.1.1 Existing and Future Land Use.

Environmental Consequences

Results from the Draft Relocation Impact Report are based on early information that could change following selection of the "preferred" alternatives and completion of full design to reduce and avoid potential impacts.

In addition to identifying which properties would potentially need relocation services, the analysis considers whether there is sufficient comparable replacement property available. For this project, the search area includes all of Fresno County and the City of Fresno, as well as the communities of Clovis and Fowler. The program is designed to help relocate homes and businesses to find similar, and often better comparable property. To determine comparable property, Caltrans Right-of-Way Agents must consider factors such as, but not limited to the following:

- Relocation areas are comparable in terms of amenities, public utilities, and accessibility to public services, transportation, and shopping.
- Meets standards for decent, safe, sanitary, and functionally equivalent replacement dwellings meeting all regulatory standards.
- Public facilities such as all varieties of utilities and access to public transportation and major commercial outlets are comparable to the displacement neighborhoods.
- Affordability to displacees with use of replacement housing payments.
- If other public projects would also need replacement property concurrently with this project.
- Accommodation for the disabled, such as ensuring that displacees are provided access facilities in replacement housing and close to public transportation, medical and shopping facilities.
- Need for additional advanced move planning to assist those to implement in-depth, creative moving strategies.
- Understanding the unique needs of relocated individuals and businesses.

For this project, the Draft Relocation Report found there is sufficient comparable property available. The following information is a discussion of the potential impacts identified for individual properties at each interchange.

American Avenue

Two alternatives are proposed for the American Avenue interchange, with eight properties potentially affected depending on the alternative selected.

The area surrounding the existing interchange is mostly rural with land currently being cultivated; however, all but two properties are zoned for other than agricultural uses (e.g., residential, industrial, commercial). Of the eight properties, the project would require only slivers of land, except at one large property zoned residential, in the northeastern quadrant of the existing interchange where a farmhouse and orchard are potentially affected by both proposed build alternatives.

See Table 2-4 Potential Relocations at American Avenue to see a breakdown of total units affected by the project alternatives. The table shows that Alternative 1 would potentially impact two units and may need benefits and/or services from the Caltrans Relocation Assistance Program. Both units are on one property located in the northeast quadrant that includes a residence and farm business with buildings and equipment, which are counted as two separate units for implementation of Caltrans relocation services and benefits. Table 2-4 also shows if Alternative 2 were selected, no units would require relocation benefits or services.

For clarity, the term “Residences” in Table 2-4 includes the owner occupant or tenants of single-family residences, multiple-unit residences, and/or mobile homes; the term “Units” is used to identify different entities within a property that may need relocation benefits and services (there can be more than one per property).

Table 2-4 Potential Relocations at American Avenue

Type of Property	Alternative 1 (2 total units)	Alternative 2 (0 total units)	No-Build Alternative (0 total units)
Residential: Owner Occupant of Single-Family Residence	1 unit	0 units	0 units
Non-Residential: Agriculture/Farm Business	1 unit	0 units	0 units

Source: July 2020 Draft Relocation Report.

The project would potentially acquire land from up to eight properties, depending on the alternative selected. See Table 2-2 Potential Property Converted to Transportation at American Avenue in Section 2.1.1 Existing and Future Land Use for a breakdown of the eight properties with estimates of land potentially required. The following discussion provides for detail of the potential impacts from each alternative:

Alternative 1—Spread Diamond

Potential impacts from Alternative 1 would come from construction of a new interchange with dimensions that would require more area for the on- and off-ramps. Much of the land needed for this alternative was purchased and preserved by Caltrans in 1965 when the half interchange was originally built. The understanding at that time was that the southbound on-ramp and northbound off-ramp would be constructed when traffic studies showed a need for the full interchange. Over time, however, Caltrans design standards changed, requiring more land for the proposed interchange configuration.

Preliminary estimates indicate that Alternative 1 would require Caltrans relocation benefits and services for the following residence and business due to full or partial acquisition of the property:

- Farmhouse and Farm Operations (Assessor's Parcel Number 331-110-11)—The farmhouse and other associated buildings and orchard are likely to require Caltrans relocation benefits and services. Approximately 9 acres of land would be needed from this parcel. The property is large with a farmhouse residence and outbuildings of a farm business. Some orchard trees would be acquired. Also, as seen on satellite photography, the orchard appears to be irrigated with a drip-irrigation system. Alternative 1 would likely impact the irrigation system and possibly a well supplying irrigation water.

Preliminary estimates indicate Alternative 1 would acquire a total of 21.72 acres of land from seven properties. Acquisition estimates for each property are shown in Table 2-2 Potential Property Converted to Transportation at American Avenue in Section 2.1.1 Existing and Future Land Use.

Alternative 2—Partial Cloverleaf

Potential impacts from Alternative 2 would come from construction of a new interchange with dimensions that would also require more area for the on- and off-ramps to construct a full interchange, but less than what is needed to construct Alternative 1.

Alternative 2 would not require the use of relocation benefits and services for this interchange design. However, the alternative does potentially require moving the exiting driveway entrance to a location farther east of its current location, to avoid traffic conflicts at the intersection of the new on- and off-ramps from vehicles and equipment entering and exiting the farm property.

Preliminary estimates indicate that Alternative 2 would acquire a total of 14.91 acres of land from seven properties. Acquisition estimates for each property are shown in Table 2-2 Potential Land Converted to Transportation at American Avenue in Section 2.1.1 Existing and Future Land Use.

There are sufficient replacement facilities within the local area and, with implementation of the Caltrans Relocation Assistance Program, potential impacts would not be a considerable contribution to cumulative impacts. See 2.1.1 Existing and Future Land Use for a list of relevant past, present, and future projects.

No-Build Alternative

The No-Build Alternative would result in no relocation of residents or businesses or the acquisition of land, but the interchanges would still lack the missing on- and off-ramps and driving conditions would further deteriorate as previously discussed.

North Avenue

Two alternatives are proposed for the North Avenue interchange, with 32 properties potentially affected by construction of the project, depending on the alternative selected. The following assessment is based on early information that could change following selection of the “preferred” alternative when Caltrans Right-of-Way agents are authorized to contact property owners directly to obtain more specific information for each property.

The industrial area surrounding the existing overcrossing contains sales and service businesses, and one nonprofit organization. There are no residential units at the North Avenue interchange or near the interchange. Each of the proposed alternatives has the potential to relocate existing businesses.

See Table 2-5 Potential Relocations at North Avenue for a breakdown of the potential impacts to properties by the type of property as designated by the Caltrans Right-of-Way Department. The table shows three commercial businesses may be impacted if Alternative 2 were selected, and two commercial businesses may be affected with Alternative 4. The relocation report concluded that Alternative 2 would potentially impact the most units (4 units) and Alternative 4 would potentially impact the least units (2 units). No residential properties are impacted by the project.

In Table 2-5, the term “Residences” includes the owner occupant or tenants of single-family residences, multiple-unit residences, and/or mobile homes; the term “Units” is used to identify different entities within a property that may need relocation benefits and services (there can be more than one per property).

Table 2-5 Potential Relocations at North Avenue

Type of Property	Alternative 2 (4 total units)	Alternative 4 (2 total units)	No-Build Alternative (0 total units)
Residences	0 units	0 units	0 units
Agricultural Farms	0 units	0 units	0 units
Commercial Businesses	3 units	2 units	0 units
Industrial/Manufacturing Businesses	0 units	0 units	0 units
Nonprofit Organizations	0 units	0 units	0 units

Source: July 2020 Draft Relocation Report.

Alternative 2—Partial Cloverleaf with Slip Ramps

Potential impacts from Alternative 2 would come from construction of a new interchange that would require more area for the on- and off-ramps and require the North/Cedar Avenue intersection to be improved within the current alignment.

Preliminary estimates indicate that Alternative 2 would require land from 26 properties, with an estimate of acquiring a total of 21.38 acres. Acquisition estimates for each property are shown in Table 2-3 Potential Property Converted to Transportation at North Avenue in Section 2.1.1 Existing and Future Land Use.

Caltrans relocation benefits and services may be required for the following businesses due to full or partial acquisition of the property:

- Kuckenbecker Tractor Company (Assessor's Parcel Number 330-021-04)—The southbound on-ramp would be installed at North Avenue and join State Route 99 in the southwest quadrant of the interchange. The on-ramp would go through this property and through the main buildings. This may require full acquisition of the property and use of relocation services.
- Truck Nation (Assessor's Parcel Number 330-040-36S)—This property is in the southeast corner of the North/Cedar Avenue intersection where improvements are being made to the south and east legs of the intersection. This property may have partial sliver acquisition where the property borders the intersection. Existing access points should remain the same or be moved south or east depending on safety measures.
- Core and Main Water Works Equipment Supplier (Assessor's Parcel Number 330-040-60)—Improvements to the south leg of the new North/Cedar Avenue intersection may require partial acquisition of land.

Alternative 4-Diverging Diamond Interchange

Preliminary estimates indicate that Alternative 4 would require land from 21 properties, with an estimate of acquiring a total of 15.29 acres. Acquisition estimates for each property are shown in Table 2-3 Potential Land Converted to Transportation at North Avenue in Section 2.1.1 Existing and Future Land Use.

Caltrans relocation benefits and services may be required for the following businesses due to full or partial acquisition of the property:

- Kuckenbecker Tractor Company (Assessor's Parcel Number 330-021-04)—Even though this alternative has the smallest impact to the area of the alternatives proposed, the southbound on-ramp would go through this property, so partial or full acquisition may be required.
- Kioti Tractor (Assessor's Parcel Number 330-021-04)—This business is in the area needed for the southbound on-ramp. The southbound on-ramp would go through this property, so partial or full acquisition may be required.

Each of the proposed alternatives would install sidewalks, curb and gutter along North Avenue between Orange Avenue and Cedar Avenue. That may require replacement of some existing sidewalk to create conformity for the entire length of the new sidewalk. Caltrans would continue to coordinate with City and County staff concerning work outside of the Caltrans right-of-way. The location of all existing entry and exit points and driveways would be maintained according to city standards. During construction, there may be temporary interruptions in access, but this would be minimized with requirements to maintain access to all properties while work is underway. A traffic management plan would be prepared and include requirements for contractors to keep traffic access open.

The relocation impact study found there would be sufficient replacement facilities within the local area. With implementation of the Caltrans Relocation Assistance Program, the potential impacts would not be a considerable contribution to cumulative impacts. See 2.1.1 Existing and Future Land Use for a list of relevant past, present, and future projects.

No-Build Alternative

The No-Build Alternative would result in no relocation of residents or businesses or acquisition of land, but the interchanges would still lack the missing on- and off-ramps and driving conditions would further deteriorate as previously discussed.

The 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.

Following completion of the final environmental document and identification of the "preferred" alternatives at American and North avenues, the Caltrans design process would focus on designing the selected alternatives to further reduce and avoid potential impacts. Caltrans would continue to coordinate with the City and County concerning details along these local streets.

A traffic management plan would be prepared and implemented during construction to keep traffic access open on the local streets as much as possible, with requirements to maintain access to all properties while work is underway. The plan would also include strategies to maintain regular communication with the public, emergency responders, and the railroad operators and businesses in the area.

Avoidance, Minimization, and/or Mitigation Measures

American Avenue and North Avenue

No mitigation is required.

2.1.3 Utilities

Affected Environment

Preliminary design studies show that utilities, canals, storm drains, and sewer systems exist within the project area at American Avenue and North Avenue. These facilities often share the Caltrans right-of-way and cross the highway underground and above ground (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project).

Caltrans Right-of-Way staff investigated the potential for utilities to be affected by construction of the project. Caltrans has existing permit agreements to allow sharing of the state right-of-way. Caltrans found the following utilities in the area:

- Fresno Irrigation District facilities (canals)
- Water and sewer municipal facilities
- Fresno Metropolitan Flood Control District storm drains
- Pacific Gas and Electric facilities
- Telephone lines
- Municipal and private gas lines

Environmental Consequences

American Avenue and North Avenue

Relocation of utilities and potholing are likely necessary with each of the build alternatives at both interchanges, and there would likely be temporary intermittent disruption of service during relocation. “Potholing” is a construction method to confirm the location of utilities. There would be no permanent adverse impacts to utilities; relocating utility service lines is a common activity for Caltrans and utility owners.

After the “preferred” alternative is identified, Caltrans Right-of-Way agents will contact all parties to conduct a series of meetings to compare the design

mapping with the as-built mapping of the utilities, form agreements, and determine a relocation plan for the utility facilities. The process is designed to minimize potential impacts.

Caltrans' standard process to coordinate with utility owners includes thorough examination of as-built maps and development of plans to conduct all necessary utility work. There would be no considerable contribution to a negative cumulative impact of utilities from the project. See 2.1.1 Existing and Future Land Use for a list of relevant past, present, and future projects.

The project would enclose a portion of the North Colony Canal by installing a box culvert. The canal is located on north side of North Avenue, in the east quadrant of the North-Cedar Avenue intersection. Caltrans would coordinate further with the Fresno Irrigation District. A 1600 Permit and Waste Discharge Requirement (WDR) from the California Department of Fish and Wildlife would be required for work on the canal.

No-Build Alternative

If selected, the No-Build Alternative would result in no relocation of utilities, but the interchanges would still lack the missing on- and off-ramps and driving conditions would further deteriorate with increased vehicle delay. With time, more potholes and cracks would develop in the pavement, making driving in the area more difficult. The existing tight dimensions would continue to be difficult to navigate for vehicles, especially large trucks. Out-of-direction travel would continue to cause delay and unnecessary travel on local roads.

The 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.

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

Avoidance, Minimization, and/or Mitigation Measures

American Avenue and North Avenue

No mitigation is required.

2.1.4 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 (23 Code of Federal Regulations 652). It further directs that the special needs of the

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

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

A Traffic Operations Report was completed in May 2020 along with additional traffic data prepared by the Caltrans District 6 Traffic Operations and Technical Planning departments (Caltrans Travel Forecasting). The studies estimated Annual Average Daily Traffic (AADT) volumes and level of service ratings for the 2019 Existing year, the 2026 Open to Traffic Year, and the 2046 Planning Horizon Year. The following transportation facilities are in or near the American Avenue and North Avenue interchanges:

American Avenue and North Avenue

State Highways

The 2020 traffic study included a scope that assessed the potential to impact the major routes in the project area:

- State Route 99 runs in a northwest-southeast orientation through the project area. Both the American Avenue and North Avenue interchanges are located on State Route 99. While the proposed work is concentrated at the interchanges, temporary construction signs and traffic control during construction would occur along State Route 99 between the Clovis Avenue and Jensen Avenue crossings.
- Golden State Boulevard is the former LRN 4 (Legislative Route Number 4), a major route in California and through the San Joaquin Valley. It was the original route before construction of State Route 99 was completed in 1965. The boulevard follows the Burlington Northern and Santa Fe railroad in a northwest-southeast orientation and runs parallel with State Route 99. It sits about 0.5 mile east of the American Avenue interchange and 1.5 miles east of the North Avenue interchange.

- State Route 41 lies west of the project area, running in a north-south orientation through the area about 4.5 miles west of the American Avenue interchange and 1.4 miles west of the North Avenue interchange.

Local Roads

The project includes improvements to several local roads in addition to American Avenue and North Avenue. The project proposes improvements to the following local roads:

- Orange Avenue is a local north-south road that crosses North Avenue one block west of State Route 99.
- Parkway Drive is a frontage road along the west side of State Route 99 connecting southbound State Route 99 traffic from North Avenue to Cedar Avenue where the southbound on-ramp is currently located.
- Cedar Avenue is a north-south road that crosses North Avenue one block east of State Route 99.

Railroad Facilities

The following railroad facilities exist in the project area:

- The Burlington Northern and Santa Fe (BNSF) railroad established the northwest-southeast orientation of the alignment for the transportation corridor that also includes Golden State Boulevard and State Route 99. The railroad runs through the length of the San Joaquin Valley and beyond.
- The BNSF Calwa Railroad Yard is a large train switching yard located just northeast of the North Avenue interchange.
- The Union Pacific Railroad (UPRR) cuts through the project area in a north-south orientation, crossing under State Route 99 just south of the Cedar Avenue overcrossing and heading north to connect with the rail yard.
- The California High-Speed Rail alignment approaches the project area from the south as it follows the Union Pacific Railroad north toward State Route 99 where it veers slightly to the northwest before crossing over State Route 99 and over the Cedar Avenue overcrossing. The high speed rail alignment then merges into the northwest-southeast transportation corridor alignment through the city of Fresno.

Pedestrian and Bicycle Facilities

A short section of sidewalk for pedestrians occurs at the American Avenue and North Avenue overcrossing structures where the sidewalk extends from end-to-end, on the south side of each overcrossing. The sidewalk is raised and includes curb and gutter. The only other sidewalks in the project area are at the North Avenue and Orange Avenue intersection and the North Avenue and Cedar Avenue intersection. Crosswalks are present only at the North

Avenue and Orange Avenue intersection and the North Avenue and Cedar Avenue intersection.

There are no developed bicycle facilities in the project area, and the local roads in the project area are not identified as Priority Routes in the City of Fresno's 2017 Active Transportation Plan. However, the plan does support connecting all parts of Fresno by walking and bicycling and identifies North Avenue as a potential Class II Bicycle Path in the full buildout of the plan. A Class II - Full Build Out envisioned by the City is a long-term (more than 30-year) vision for a connected bicycle network and prescribes Class II bike lanes for most arterial and collector streets.

Municipal Bus Routes and Airports

There are no bus routes into or through the project area. The closest bus stop is at the Robert J. Arriago Community Center in the community of Malaga, about 2.4 miles east of North Avenue.

There are no airports in or near the project area.

Environmental Consequences

The May 2020 Traffic Operations Report provides traffic volumes and level of service ratings are provided for the proposed build alternatives and a No-Build Alternative for each interchange. The No-Build Alternative portrays roadway conditions as if no transportation improvements were made.

Caltrans uses Annual Average Daily Traffic volumes to measure the carrying capacity of roadway features, such as roadway segments, intersections and interchanges. Average Daily Traffic volume numbers represent the traffic demand or the volume of traffic using a roadway in a 24-hour period. Roadways are designed to handle specific volumes of traffic. When the capacity of a roadway is exceeded, the effectiveness of the roadway is reduced.

Caltrans uses level of service (also known by the acronym "LOS") to indicate how effectively a roadway or interchange transports vehicles. The level of service rating system uses letters "A" through "F" to describe and measure service quality. A designation of level of service "A" indicates excellent travel conditions, while level of service "F" indicates very poor, congested conditions. According to Caltrans standards, ratings of "A" through "D" are considered acceptable ratings, depending on other measures used to analyze the effectiveness of a facility.

Note: Vehicle miles traveled is a measure used in transportation planning to represent the amount of travel for all vehicles in a geographic region over a given period of time, typically a 1-year period. This project is considered "a project type that is unaffected by the use of vehicle miles traveled" as a measure of transportation impacts because it "is assumed to not lead to

measurable and substantial increases in vehicle travel". The project complies with Caltrans Policy Memo entitled "Caltrans Policy on Transportation Impact Analysis and the California Environmental Quality Act Significance Determinations for Projects on the State Highway System" (September 10, 2020), as well as Caltrans "Transportation Analysis Framework" (September 10, 2020) and "Transportation Analysis under the California Environmental Quality Act" guidance documents for implementation of Senate Bill 743 (Steinberg, 2013) which is codified at Public Resources Code Section 21099. These documents are available on Caltrans' website at https://dot.ca.gov/programs/sustainability/sb-743

All proposed improvements would be constructed to meet requirements of the 1990 Americans with Disabilities Act.

State Route 99 Mainline

Table 2-6 Mainline Annual Average Daily Traffic below shows traffic volumes and the percentage of truck traffic on State Route 99 between North and American avenues. The table shows that traffic volume on State Route 99 is predicted to increase through time by approximately 174,650 Annual Average Daily Traffic from 2019 to 2046, and the percentage of truck volume would remain at approximately 16 percent of the vehicle mix.

Table 2-6 Mainline Annual Average DailyTraffic

Mainline	Annual Average Daily Traffic	Truck Annual Average Daily Traffic	Truck Percentage
2019 Existing	122,650	19,624	16%
2026 No-Build	199,050	31,848	16%
2046 No-Build	297,300	47,568	16%

Source: Caltrans Travel Forecasting.

State Route 99 between American Avenue and North Avenue is currently operating at level of service "C" and "D" during morning and evening peak travel periods, respectively. Peak travel periods are the timespan when travel volumes are highest with the worst traffic conditions. The peak periods for this project area are between 6:00 a.m. to 9:00 a.m. for the morning peak period and 3:00 p.m. to 6:00 p.m. for the evening peak period.

The May 2020 Traffic Operations Report found the following for the mainline:

- The mainline Average Annual Daily Traffic would more than double by 2046 and become more congested without lanes being added to the mainline.
- The mainline would eventually operate at level of service "F" during peak travel periods by 2046 with or without construction of the project

- The relocation of the ramps from Cedar Avenue to North Avenue would increase the weaving distance (the distance for vehicles to change lanes) on the mainline and therefore improve freeway operations between Chestnut Avenue and North Avenue.
- The project would not negatively impact the mainline Annual Average Daily Traffic or level of service.
- The project improvements would provide better operational conditions for traffic using the interchanges than if the improvements were not constructed.
- There would be improved conditions on the local road system.
- There would be no negative long-term impacts to the mainline with construction of the project.
- There may be temporary impacts during demolition of the overcrossings and when mainline traffic is detoured around the demolition work and if night work is required.

With or without the interchange improvements, the mainline where the interchange ramps meet State Route 99 is predicted to be at level of service "F" by 2046. This is because the mainline is predicted to experience a large increase in traffic volume, with no planned projects to add lanes to State Route 99 to carry the increased traffic.

American Avenue

State Highways

Most work proposed for the project involves the existing interchanges on State Route 99. The project would reconstruct a new overcrossing with improved dimensions in the same location as the existing overcrossing to improve traffic conditions getting on and off the highway. The project would reconstruct the existing southbound off-ramps and northbound on-ramps and construct two new ramps to provide northbound and southbound traffic with full access to and from the highway. The only improvements to the mainline would occur where the relocated ramps meet the highway.

The May 2020 Traffic Operations Report found the following for the American Avenue interchange:

- The changes would improve traffic conditions for vehicles and especially large trucks.
- The only improvements to the State Route 99 mainline would occur where the ramps merge with the highway and no negative effects to the State Route 99 mainline are anticipated.
- No negative impacts are anticipated to occur to State Route 41 or Golden State Boulevard from construction of the project.

- The project would improve conditions at the Golden State Boulevard intersection with American Avenue.

Local Roads

The proposed interchange alternatives would improve intersections on American Avenue where the new on- and off-ramps meet, as described in Section 1.4 Project Alternatives.

The project also includes improvements to the intersection of American Avenue at the Juvenile Justice Campus driveway:

- Juvenile Justice Campus Driveway—This is a signalized intersection on American Avenue located just west of the interchange. The intersection was established to manage traffic volume entering and leaving the campus. The project would upgrade the existing intersection facilities (signals, turn pockets, pedestrian crossings) to accommodate the increased traffic using the new southbound on-ramp and northbound off-ramp.

Table 2-7 Annual Average Daily Traffic Volumes at American Avenue shows results from the May 2020 Traffic Operations Report with traffic volumes for the No-Build Alternative and two build alternatives. Volumes are shown for the year 2019, 2026 and 2046. The volumes for the No-Build Alternative assume the interchange remains a half interchange with no improvements. The two build alternatives assume full interchanges are built with four on- and off-ramps at the interchange.

The table can be used to compare traffic volume numbers for the proposed alternatives predicted for 2026 and 2046 for American Avenue and if no project is built. Projections indicate there would be a increase of 2,900 vehicles by 2046 without construction of the project. With the build alternatives there is an increase of 5,900 from 2019 to 2046 with construction of Alternative 1 or Alternative 2. Truck traffic maintains a steady 12 percent of the traffic volume with construction of the project out to 2046, and 9 percent with no project.

Table 2-7 Annual Average Daily Traffic Volume at American Avenue

Alternatives at American Interchange	Annual Average Daily Traffic	Truck Annual Average Daily Traffic	Truck Percentage
2019 Existing	4,900	441	9%
2026 No-Build	5,700	513	9%
2026 Alternative 1	8,100	993	12%
2026 Alternative 2	8,110	986	12%
2046 No-Build	7,800	702	9%
2046 Alternative 1	10,800	1,302	12%
2046 Alternative 2	10,800	1,283	12%

Source: Caltrans Travel Forecasting.

The existing ramps at American Avenue are currently operating at acceptable levels of service of “A” and “B” during peak travel periods but are expected to deteriorate to level of service “C” and “D” by 2046. With the construction of Alternative 1 and 2 the level of service on the ramps would also be “C” and “D” by 2046. With or without the project, the existing intersection at Juvenile Justice Campus Drive is predicted to be operating at level of service rating “B” in 2046.

There may be temporary impacts to local streets during demolition of the overcrossings and when mainline traffic is detoured around the demolition work. Night work may be required. A traffic management plan would be prepared to perform traffic control during construction to provide access to properties for residents and businesses, for emergency responders, and for through traffic to minimize traffic congestion during construction hours.

See 2.1.1 Existing and Future Land Use for a list of relevant past, present, and future projects considered.

Railroads and High-Speed Rail

No improvements are proposed to a railroad or the California High-Speed Rail line. No negative impacts are anticipated from construction of the project to railroads and/or the California High-Speed Rail. Construction of the project would be coordinated around train schedules where necessary. A traffic management plan would be prepared to perform traffic control during construction.

Pedestrians and Bicycles

The regional Federal Transportation Improvement Program includes funding for bicycle facility improvements in the project area. Following Caltrans standards, the new overcrossings would include sidewalks for pedestrians and wider 8-foot shoulders to accommodate bicycles.

Municipal Bus Routes and Airports

There are no bus routes or airports in the area, so there would be no impacts to bus routes or airports from the project.

No-Build Alternative

If selected, the No-Build Alternative would result in no improvements to roads or features for pedestrians and bicycles. The interchanges would still lack the missing on- and off-ramps and driving conditions would further deteriorate as previously discussed.

Cedar Avenue Ramps

State Highways

The ramps to and from Cedar Avenue are proposed for removal. The new northbound off-ramp and southbound on-ramp at North Avenue would effectively replace the removed ramps and form a full interchange at North Avenue. It is anticipated that most of the Cedar Avenue ramp traffic would use the ramps at North Avenue. No negative impacts are anticipated to Cedar Avenue from closing the ramps.

Local Roads

The ramps to and from Cedar Avenue are proposed for removal but the new northbound off-ramp and southbound on-ramp at North Avenue replace the removed ramps and form a full interchange at North Avenue. It is anticipated that most of the Cedar Avenue ramp traffic would use the ramps at North Avenue. No negative impacts are anticipated to Cedar Avenue from closing the ramps.

Railroads and High-Speed Rail

No improvements are proposed to a railroad or the California High-Speed Rail line. No negative impacts are anticipated by removal of the Cedar Avenue ramps to railroads and/or the California High-Speed Rail.

Pedestrians and Bicycles

There are no existing facilities at Cedar Avenue that would be impacted by removal of the ramps.

Municipal Bus Routes and Airports

There are no bus routes or airports in the area, so there would be no impacts to bus routes or airports from removal of the Cedar Avenue ramps.

No-Build Alternative

If selected, the No-Build Alternative would result in no closure of the Cedar ramps, and the interchanges would still lack the missing on- and off-ramps. Driving conditions would further deteriorate with increased vehicle delay as previously discussed.

North Avenue

State Highways

Most of the work proposed in this project would occur at the existing interchanges crossing State Route 99. The project would reconstruct a new overcrossing with improved dimensions in the same location as the existing overcrossing to improve traffic conditions getting on and off the highway. The project would reconstruct the existing southbound off-ramp and northbound on-ramp, and construct two new ramps to provide northbound and southbound traffic with full access to and from the highway.

The May 2020 Traffic Operations Report found the following for the North Avenue interchange:

- The changes would improve traffic conditions for vehicles and especially large trucks.
- The only improvements to the State Route 99 mainline would occur where the ramps merge with the highway and no negative effects to the State Route 99 mainline are anticipated.
- No negative impacts are anticipated to occur to State Route 41 or Golden State Boulevard from construction of the project.
- Traffic that would normally use the Cedar Avenue southbound on-ramp and northbound off-ramp would have better access and likely use ramps at other interchanges, such as North Avenue and American Avenue.
- Traffic that has been using local streets to access destinations in the project area would in instead use the highway and improved interchanges to take advantage of the more direct access provided by the project.

Local Roads

The proposed interchange alternatives would improve intersections on North Avenue where the new on- and off-ramps meet, as described in Section 1.4 Project Alternatives.

The project includes improvements to several local intersections:

- Orange Avenue Intersection—This is a signalized intersection on North Avenue, one block west of State Route 99. The project would upgrade the existing intersection facilities (signals, turn pockets, pedestrian crossings) to accommodate traffic using the improved interchange and to improve access for traffic accessing the warehousing businesses on Orange Avenue south of North Avenue.
- Parkway Drive Intersection—This intersection currently functions as an extension of the North Avenue southbound on-ramp as well as a frontage road along the west side of State Route 99 connecting southbound State Route 99 traffic from North Avenue to Cedar Avenue where the southbound on-ramp is currently located. The project would relocate the

roadway to the west to meet Orange Avenue, south of the intersection of Orange Avenue with North Avenue. The relocation would make way for the new southbound on-ramp and new intersection facilities such as signals, turn lanes, and pedestrian crossings. No signalization would be installed where the new Parkway Drive intersects Orange Avenue because predicted traffic volumes at the location does not warrant them.

- Cedar Avenue Intersection—This is a signalized intersection on North Avenue, one block east of State Route 99. The project proposes to upgrade the signals, turn pockets, and pedestrian crossings.

Table 2-8 Annual Average Daily Traffic Volumes at North Avenue shows traffic volumes for the No-Build Alternative and two build alternatives. The Cedar Avenue ramp volumes are included in the volumes reported for North Avenue. The volumes for the No-Build Alternative assume the interchange remains a half interchange with no improvements. The projections for the two build alternatives assume full interchanges are built with four on- and off-ramps at the interchange.

For the North Avenue interchange, the table shows traffic volume is predicted to increase to year 2046, which is Caltrans' 20-year planning horizon. The table also shows if the project is constructed, traffic volumes would decrease by 1,800 Annual Average Daily Traffic, compared with the No-Build Alternative. This is due to expected redistribution of traffic resulting from the interchange improvements. There is no considerable difference between the predicted traffic volume (Annual Average Daily Traffic) in 2046 for each of the two build alternatives. The percentage of truck traffic remains at roughly 33 percent with or without the project. Distribution of truck traffic is improved with the project, as seen in the one-half percent difference between the 2046 No-Build Alternative and the 2046 build alternatives.

Table 2-8 Annual Average Daily Traffic Volume at North Avenue

Alternatives at North/Cedar Interchange	Annual Average Daily Traffic	Truck Annual Average Daily Traffic	Truck Percentage
2019 Existing	14,000	4,060	29%
2026 No-Build	30,000	9,996	33.5%
2026 Alternative 2	29,000	9,372	31%
2026 Alternative 4	29,000	9,516	33%
2046 No-Build	39,400	13,250	33.5%
2046 Alternative 2	37,600	12,311	33%
2046 Alternative 4	37,500	12,372	33%

Source: Caltrans Travel Forecasting.

Traffic studies found that the existing ramps at North Avenue and Cedar Avenue are currently operating at acceptable levels of service of “C” and “D” during peak travel hours but are expected to deteriorate to level of service “F” by 2046 without the project. With the improvements proposed to the interchanges and upgrades to the existing intersections on North Avenue at Orange Avenue and Cedar Avenue, conditions would be greatly improved on the local street system and for traffic entering and exiting the highway. Also, a new intersection is proposed where Parkway Drive meets Orange Avenue just south of the North and Orange avenue intersection. Both Alternatives 2 and 4 modify the alignment of Parkway Drive from North Avenue to the west to meet Orange Avenue. These intersections are predicted to be operating at level of service ratings of “D,” “E,” and “F” by 2046 but with construction of the proposed improvements, the intersections would operate at levels of service “A,” “B,” and “C.”

There may be temporary impacts to local streets during demolition of the overcrossings and when mainline traffic is detoured around the demolition work. Night work may be required. A traffic management plan would be prepared to perform traffic control during construction to provide access to properties for residents and businesses, for emergency responders, and for through traffic to minimize traffic congestion during construction hours.

See 2.1.1 Existing and Future Land Use for a list of relevant past, present, and future projects considered.

Railroads and High-Speed Rail

No improvements are proposed to a railroad or the California High-Speed Rail line. No negative impacts are anticipated from construction of the project to railroads and/or the California High-Speed Rail. Construction of the project would be coordinated around the train schedules where necessary. A traffic management plan would be prepared to perform traffic control during construction.

Pedestrians and Bicycles

The regional Federal Transportation Improvement Program includes funding for bicycle facility improvements in the project area. Following Caltrans standards, new overcrossings would include sidewalks for pedestrians and wider 8-foot shoulders to accommodate bicycles.

Bus Routes and Airports

There are no bus routes or airports in the area, so there would be no impacts to bus routes or airports from the project.

No-Build Alternative

If selected, the No-Build Alternative would result in no improvements to roads or features for pedestrians and bicycles. The interchanges would still lack the

missing on- and off-ramps and driving conditions would further deteriorate as previously discussed.

The 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.

A Traffic Management Plan would be developed to avoid and minimize local traffic delay and congestion during construction. The Traffic Management Plan includes notifying the public of construction activities via changeable message signs and the Caltrans District 6 Central Valley Traffic Management Center, monitors traffic and informs the public of construction activities via media outlets, such as radio and television. A traffic management plan could include, but is not limited to, the following:

- Communication with emergency service providers such as police, fire, ambulance, and hospital facilities.
- Release of information through brochures and mailers, press releases, and notices from the Caltrans public information office.
- Use of fixed and portable changeable message signs.
- Incident management through the Construction Zone Enhancement Enforcement Program and the Transportation Management Plan.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.1.5 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 U.S. Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration, in its implementation of 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 taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

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

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

Affected Environment

A Visual Impact Analysis was completed in September 2020 and followed the guidance outlined in the publication *Visual Impact Assessment for Highway Projects* published by the Federal Highway Administration. The analysis described the visual resources potentially affected in the project area and is summarized below.

Mainline

The project is not within a scenic highway. The corridor is classified as a landscaped highway, defined as a section of highway with ornamental vegetation planting that meets the criteria established by the California Code of Regulations, Outdoor Advertising Regulations, Title 4, Division 6. This designation is used in the control and regulation of outdoor advertising displays.

As a landscaped highway, State Route 99 has large mature eucalyptus trees, with oleander shrubs and other irrigated ornamental shrubs and trees along the highway alignment. The oleander planted in the center island between the northbound and southbound traffic and the eucalyptus trees planted along the highway have been defined by local agencies as “signature planting” on State Route 99 through the Central Valley.

The project corridor is a southern gateway into the City of Fresno. A City of Fresno entry monument sits at the southeast quadrant of the existing American Avenue interchange. Three art murals sit along the corridor—at Chestnut Avenue, Central Avenue, and Cedar Avenue. These roadside elements are important features of the highway. See Figure 2-3 Existing Roadside Features. Roadside treatments are under the guidance and coordinated efforts of the Fresno Council of Governments and City of Fresno.

The corridor has been treated with aesthetic enhancements north of the project area within the county according to the Fresno Council of Governments, July 2000 Highway 99 Beautification Plan. This project would include enhancements consistent with the plan.

American Avenue

Land use near American Avenue within the project corridor is mostly open agricultural fields, but zoning is varied with industrial and commercial mixed with two residential, one institutional, one open land, and one agriculture use areas. Moving north, land use continues with denser commercial and industrial uses along the highway. The Fresno County Juvenile Justice

Campus sits on the parcel in the southwest quadrant of the American Avenue interchange.

North Avenue

The interchange is surrounded by commercial and industrial buildings and facilities, old and new, and other transportation facilities. The elevation and scale of the California High-Speed Rail bridge structure are prominent features and visible from the freeway, north and south of North Avenue, and from local streets in the area.

Figure 2-3 Existing Roadside Features

Source: September 2020 Visual Impact Assessment.

Environmental Consequences

American Avenue and North Avenue

The analysis determined visual resources at the two separate interchanges have the same visual features. Therefore, the two interchange locations were analyzed together, rather than individually.

The analysis found the project would have a moderately low visual impact at each interchange location and would not create new sources of light or glare. A small section of oleander located in the median at each interchange would

be impacted and possibly eucalyptus trees located near the interchanges. The improvements as a whole are considered to improve the corridor as the project would meet current local aesthetic values and goals as defined in the Fresno Council of Governments, July 2000 Highway 99 Beautification Plan and would be consistent with other project improvements made on State Route 99 north of the project area.

According to Caltrans policy, a separate landscape replacement planting is required for the removal of oleander and eucalyptus trees. In addition, the new bridge structures would be designed with aesthetic treatments to match the bridge aesthetic theme along the State Route 99 corridor.

The City of Fresno entry monument at American Avenue would not be impacted by Alternative 1, but the monument may need to be relocated under Alternative 2. The other art murals at Chestnut Avenue, Central Avenue, and Cedar Avenue would not be impacted by any of the build alternatives. Both the entry monument and the art mural would be protected in place during construction, or relocation would occur to protect these features. There would be no impact to these features with implementation of protection measures.

When looking at past, present and foreseeable projects affecting visual aesthetic values along the State Route 99 corridor, one must also consider vegetation removal in Caltrans projects. All Caltrans projects are required to replace any vegetation removed for worker safety. Since the project is consistent with local aesthetic values, the project would not contribute to or result in negative cumulative visual impacts, with implementation of avoidance and minimization measures as outlined in the following section.

No-Build Alternative

If selected, the No-Build Alternative would not remove oleander and eucalyptus trees, and there would be no improvements to roads or added features for pedestrians and bicycles. The interchanges would still lack the missing on- and off-ramps, and driving conditions would further deteriorate as previously discussed.

The 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. The following measures would be included for this project:

- Caltrans would provide aesthetic treatments to the bridge structures, abutments, wing walls and girders. Treatments such as textures and color would be consistent with recent structures constructed on State Route 99 in the city of Fresno north of the project area.
- Highway planting will be provided in a separate landscape project, once construction is completed, to replace any trees or shrubs removed, with

preliminary costs estimated at $1,917,000 including 3 years for plant establishment.

- The new plantings would be in compliance with Caltrans policy on replacement planting and within the design theme of the Fresno 99 Beautification Master Plan.
- Minimize removal of oleander from the median where feasible—Limit oleander removal from the median to no more than 500 continuous feet.
- Minimize tree removal—Remove only those trees and shrubs required for the construction of the new roadway facilities. Avoid removing trees and shrubs for temporary uses such as construction staging areas or temporary storm water conveyance systems.
- Avoid mass grading—Where feasible, avoid mass grading the project site. Avoid removal and grading areas where existing vegetation provides screening of adjacent properties.
- Any new right-of-way fencing should keep with the existing rural fence. However, highway facility type (i.e., freeway or expressway) and adjacent zoning/land use would also factor into the type of fence that is selected.
- Any walls would be designed with aesthetic treatments to match treatments on other structures.
- If night construction is necessary, light spillage from portable sources would be minimized. At a minimum, the construction contractor would be required to minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights could be used. Portable lights would be operated at the lowest allowable wattage and height and would be raised to a height no greater than 20 feet. All lights would be screened and directed downward toward work activities and away from the night sky, highway users and highway neighbors, to the maximum extent possible. The number of nighttime lights used would be minimized to the greatest extent possible.
- Provide protection for the City of Fresno entry monument and/or murals on State Route 99.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.2 Physical Environment

2.2.1 Paleontology

Regulatory Setting

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

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

- 16 U.S. Code 431-433 (the "Antiquities Act") prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered "objects of antiquity" by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.
- 23 U.S. Code 1.9(a) requires that the use of federal-aid funds must be in conformity with all federal and state laws.
- 23 U.S. Code 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 U.S. Code 431-433 above and state law.

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

Affected Environment

American Avenue and North Avenue

A Paleontological Evaluation Report was completed for this project in February 2020 to evaluate the potential for the project to uncover important fossils during construction. The study found the project did have the potential to encounter a geologic formation known as the Modesto Formation, which has produced significant paleontological resources in the San Joaquin Valley.

The project area lies within the Great Valley geomorphic province, a large expansive alluvial plain with significant paleontological fossils buried in thick layers of sediment. The alluvial plain is made up of sediments deposited by rivers over the past 160 million years into a large elongated basin that extends roughly 400 miles north and south between the Cascade Range and the Tehachapi Mountains, and roughly 50 miles east and west between the Sierra Nevada Mountain Range and the Coast Range in California.

A survey of the Paleontological Sensitivity Mapping database, developed by California State University, Fresno, found there is "high sensitivity" or potential for the project to encounter the Modesto Formation, which formed in the quaternary period 2.6 million years to 12,000 years ago.

Numerous scientifically important fossils have been recovered from the Modesto Formation in the Central San Joaquin Valley, including discoveries on Caltrans projects in Fresno and Merced counties. For example, important fossils were found during construction of a Caltrans project completed in 2016 on State Route 99 in Merced County, just north of this project, where large land mammals such as mammoths, camels, bison, and horses were found in

the Modesto Formation. Following these discoveries, the Modesto Formation is now classified as having “high sensitivity” for paleontological resources.

Environmental Consequences

American Avenue and North Avenue

There is potential for any of the build alternatives to impact sensitive paleontological resources where ground disturbance activities such as trenching and grading occur and where excavation reaches or exceeds a depth of three feet.

The project improvements require excavation up to approximately 11-feet deep from ground surface for drainage basins located within the interchange, with approximately three-feet of the upper soil having been previously disturbed by construction of the existing highway. The project area has been highly disturbed by agricultural practices, the installation of canals, railroads, pipelines, utility lines and commercial and industrial development since the 1870s. While research of geologic maps and database inquiry indicates the Modesto Formation could potentially lie beneath State Route 99 in the project area, there has been no record of fossils recovered in the immediate project area.

The paleontological sensitivity of the Modesto Formation is categorized as “high,” as other Caltrans projects have recovered scientifically significant fossils at other locations that include the State Route 99 Plainsburg Road/ Arboleda Drive Freeway project in Merced County where fossils were recovered and studied and now reside at the University of California at Merced where they can be viewed. A search of the University of California Museum of Paleontology online database confirmed that, to date, there are three known fossil localities in Fresno County within the Quaternary/Holocene Modesto Formation.

Based on the work performed for previous Caltrans projects, measures have been adopted for all Caltrans projects to identify the potential for paleontological resources (fossils) in early planning stages and, where relevant, to require a professionally qualified paleontologist to monitor and recover, study, and preserve any fossils of scientific significance. With application of these measures, there would be no negative impact because there are standardized procedures in place to recover, identify, and preserve scientifically important fossils. These measures would ensure that the project would not contribute to a cumulative impact and would protect any important paleontological resources discovered.

No-Build Alternative

If selected, the No-Build Alternative would result in no excavation in areas where paleontological resources may exist.

The 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. The following measures will be implemented to avoid and minimize impact to paleontological resources:

- A project-specific Paleontological Mitigation Plan will be prepared that provides for a professionally qualified paleontologist to be present to monitor excavation activities as well as to oversee the handling of fossils if found and to prepare all reporting requirements per Caltrans and the State of California requirements for paleontological resources.
- The Paleontological Mitigation Plan will be prepared by a paleontological sub-consultant under contract and task order under Caltrans oversight.
- All project personnel will receive training by a qualified paleontologist before the start of work.
- Recovered fossils would be prepared to the point of identification and placed in an approved paleontological repository.
- All open excavations more than 5 feet deep in native sediments of the Modesto Formation shall be monitored full-time by a qualified paleontologist.
- All construction/project personnel must complete a construction safety orientation. A procedure for interfacing paleontological and construction personnel will need to be developed in consultation with the Resident Engineer (RE).
- A pre-construction paleontological sensitivity training for earthmoving personnel is to be conducted, and documentation of training (sign-in sheets, hardhat stickers) will be kept with the project records (filed onsite and in the Department Task Order Manager's office).
- The professional paleontologist would designate a paleontological monitor(s) to be present during qualifying earthmoving activities, as previously defined.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.2.2 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 the investigation and mitigation of waste releases, air and water quality, human health, and land use.

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

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is 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 restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

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

Affected Environment

An Initial Site Assessment was completed for the project in May 2020. Preliminary Site Investigations were conducted in June 2020 for specific properties of concern.

The purpose of the Initial Site Assessment is to determine the presence of hazardous waste on properties potentially impacted by the project. The study determines the costs involved with cleanup and identifies risks of future requirements and costs for properties incorporated into the State Highway System. Study methodology included site reconnaissance, review of historical topographic maps and aerial photographs, investigation of regulatory databases, review of facility-related documents and other site-related record sources. In addition, for some properties, shallow borings were conducted to see the extent of the presence of known contaminants.

American Avenue and North Avenue

Of the total 40 properties studied in the direct impact area at American and North avenues, studies found that 37 properties contain hazardous waste, including 8 properties at American Avenue and 29 properties at North Avenue. The study recommended further preliminary site investigations for 11 properties to collect boring samples of the soil. Only five properties have been further investigated at this time because property owners would not allow access to the remaining six properties. Further investigations would be conducted of the remaining six properties in the future for those properties associated with the “preferred” alternative.

Records from regulatory files show contaminants came mostly from historic agricultural and heavy industrial uses that used a range of constituents, such as pesticides, heavy metals, volatile organic compounds, polychlorinated biphenyl and petroleum hydrocarbons. These constituents can be found in the soil at ground surface, in sediments subsurface, and in groundwater. One property was identified as associated with a hazardous waste superfund site, located east of the intersection of North Avenue and Cedar Avenue. See Table 2-9 Potential for Hazardous Waste at American Avenue and Table 2-10 Potential for Hazardous Waste at North Avenue to see a listing of properties with the materials on record for each property.

Aerially Deposited Lead

A Preliminary Site Investigation was conducted for aerially deposited lead in May 2019. Aerially deposited lead is found along state highways deposited from use of leaded fuel in the 1970’s. A sampling of the soil around State Route 99 at the American Avenue and North Avenue interchanges found aerially deposited lead in the soil next to State Route 99 in the project area.

Asbestos-Containing Materials and/or Lead-Based Paint

Studies found there is potential for asbestos-containing transit-pipe to be found during construction. The pipe is typically associated with underground utilities as they are being relocated.

Bridge structures in the project area were surveyed in May 2019 for asbestos-containing material and lead-based paint. Analysis results for asbestos indicate that chrysotile asbestos at concentrations of 40 percent exists in the sheet packing used as barrier rail shims in bridges in the project area. Sheet packing that contains asbestos is a Category 1 nonfriable/nonhazardous material but must still be handled according to regulatory requirements.

The following bridge structures with sheet packing were surveyed:

- American Avenue Overcrossing Bridge Number 42-0205
- Calwa Overhead Bridge Number 42-0208R and L
- Cedar Avenue Overcrossing Bridge Number 42-0209
- North Avenue Overcrossing Bridge Number 42-0210

While bridges do contain paint with lead, this is not considered to be a California or federal hazardous waste, based on the level of lead content. Other buildings and structures in the project location may contain lead-based paint or asbestos-containing material.

Environmental Consequences

The properties found to contain hazardous materials of concern are shown in Table 2-9 Potential for Hazardous Waste at American Avenue and Table 2-10 Potential for Hazardous Waste at North Avenue. The tables list the properties by Assessor's Parcel Number and state which alternative would impact the parcel and the potential hazardous constituents to be found on the property based on public records.

American Avenue

Eight properties containing hazardous waste and/or materials at American Avenue could be impacted by the project alternatives. Studies indicate that each of the build alternatives would potentially impact the same number of properties with hazardous materials.

Analysis of the alternatives shows the potential impacts as follows:

- Alternative 1 potentially impacts 7 properties.
- Alternative 2 potentially impacts 7 properties.
- The No-Build Alternative would cause no impacts to properties containing hazardous materials, and therefore no cleanup would be required.

See Table 2-9 Potential for Hazardous Waste at American Avenue for more detail on each property containing hazardous waste and which alternative could impact each property.

Table 2-9 Potential for Hazardous Waste at American Avenue

County Assessor's Parcel Number	Alternative with Potential to Impact	Potential Hazardous Waste Concern
331-140-23	1	Historical Agricultural Use—Possible pesticides and heavy metals.
331-110-13s	1, 2	Historical Agricultural Use—Possible pesticides and heavy metals.
331-110-35	1, 2	Historical Agricultural Use and Heavy Equipment Repair—Possible pesticides, heavy metals, Tetrahydropalmatine, volatile organic compounds.
331-110-34	1, 2	Historical Agricultural Use and Heavy Equipment Repair—Possible pesticides, heavy metals, Tetrahydropalmatine, volatile organic compounds.
331-110-11	1, 2	Historical Agricultural Use—Possible pesticides, heavy metals, Tetrahydropalmatine, volatile organic compounds.
340-060-22	1, 2	Historical Agricultural Use—Possible pesticides, heavy metals, Tetrahydropalmatine, volatile organic compounds.
340-060-44T	1, 2	Historical Agricultural Use—Possible pesticides and heavy metals.
340-060-20	2	Historical Agricultural Use and Heavy Equipment Storage Yard—Possible pesticides, heavy metals, Tetrahydropalmatine, volatile organic compounds.

Source: May 2020 Initial Site Assessment.

Construction of this project, and other projects in the vicinity, would result in potential exposure to hazardous waste/materials related to ground-disturbing activities and the removal or modification of facilities and structures. Soils in the vicinity of roadways may be contaminated with aerially deposited lead, and agricultural soils may be contaminated with pesticides and other materials. Structures may contain lead-based paint, asbestos, or other hazardous materials. Avoidance and minimization measures are included in this project to address the removal of these materials, including the requirement for a health and safety plan to test soils before construction and appropriately dispose of contaminated materials.

Other projects in the area would encounter many of the same potential effects associated with hazardous materials. However, all projects must comply with state and federal regulations to prevent releases of hazardous materials and to ensure worker and public safety. Implementation of avoidance and minimization measures would offset any potential project effects, ensuring

that cumulative effects associated with hazardous materials are avoided. The project would not contribute to negative cumulative impacts because the project area would benefit from the removal of these materials according to state and federal safety standards.

No-Build Alternative

If selected, the No-Build Alternative would result in no construction activities disturbing or handling hazardous waste or materials. The interchanges would still lack the missing on- and off-ramps, and driving conditions would further deteriorate as previously discussed.

North Avenue

At North Avenue, of the 32 properties evaluated, 30 properties were found to potentially contain hazardous waste and/or materials that could be impacted by the project alternatives. See Table 2-10 Potential for Hazardous Waste at North Avenue for more detail on each property containing hazardous waste and a breakdown of which alternative could impact each property.

Analysis of the alternatives shows the potential impacts as follows:

- Alternative 2 potentially impacts 29 properties.
- Alternative 4 potentially impacts 25 properties.
- The No-Build Alternative would cause no impacts to properties containing hazardous materials, and therefore no cleanup would be required.

A property of concern (Assessor's Parcel Number 487-020-65) located in the northeast quadrant of North Avenue and Cedar Avenue is where a former pesticide formulation facility contaminated the area. The property is identified as a Cortese listed property. The property is currently under orders to investigate a release of contamination to the soil and groundwater. There are monitoring wells for contamination at the site. The project is not anticipated to impact this property, and the property should be avoided. If impacted, any new owner would potentially be required to work with the California Department of Toxic Substances Control and the Central Valley Regional Water Quality Control Board regarding monitoring well abandonment and/or replacement, and would be responsible for any remediation activity that is outstanding. As currently designed, Alternatives 2 and 4 avoid acquiring property from this site.

Table 2-10 Potential for Hazardous Waste at North Avenue

County Assessor's Parcel Number	Alternative with Potential to Impact	Potential Hazardous Concern
330-021-36S	2, 4	Historical Agricultural Use—Pesticides and heavy metals.
330-021-60S	2, 4	Historical Agricultural Use—Pesticides and heavy metals.
330-021-01	2, 4	Historical Agricultural Use—Pesticides and heavy metals.
330-021-13S	2, 4	Historical Agricultural Use—Pesticides and heavy metals. Monitoring wells for Orange Avenue land fill.
330-021-12T	2, 4	Historical Agricultural Use—Pesticides and heavy metals. Existing ponding basin.
330-021-04	2, 4	Historical Agricultural Use—Subsurface petroleum hydrocarbons associated with vehicle repair service.
330-021-05	2, 4	Historical Agricultural Use and Light Industrial Use—Subsurface petroleum hydrocarbons.
487-031-52	2	Historical Agricultural Use and Light Industrial/Commercial Use—Tetrahydropalmatine, volatile organic compounds, heavy metals, polychlorinated biphenyls.
487-031-54	2	Historical Agricultural Use and Light Industrial/Commercial Use—Pesticide, Tetrahydropalmatine, volatile organic compounds, heavy metals, polychlorinated biphenyls.
487-031-63	2	Historical Agricultural Use and Light Industrial/Commercial Use—Pesticide, Tetrahydropalmatine, volatile organic compounds, heavy metals, polychlorinated biphenyls.
487-031-62	2	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, Tetrahydropalmatine, volatile organic compounds, polychlorinated biphenyls.
487-140-51	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Tetrahydropalmatine, volatile organic compounds, heavy metals, polychlorinated biphenyls, underground storage tanks.
487-180-08T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-09T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-03	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-07T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.

County Assessor's Parcel Number	Alternative with Potential to Impact	Potential Hazardous Concern
487-180-06T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-14T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-18	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-17T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Possible heavy metals, pesticides.
487-180-16T	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
487-180-15	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Heavy metals, pesticides.
330-040-48S	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Tetrahydropalmatine, pesticides, heavy metals, volatile organic compounds, underground storage tanks.
330-040-60	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Site Investigation results pending. Tetrahydropalmatine, heavy metals, volatile organic compounds, pesticides.
330-040-36s	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Tetrahydropalmatine, volatile organic compounds, heavy metals, pesticides.
330-040-61	2, 4	Historical Agricultural Use and Light Industrial/Commercial Use—Sentry wells on the west side of the property.
330-040-24S	2, 4	Historic Gas Station and Diesel Repair Shop—Sentry well for Purity Oil site, evidence of gas station.
330-021-07T	2, 4	Historic Agricultural Use—Pesticides, heavy metals, volatile organic compounds, Tetrahydropalmatine.
330-040-57S	2, 4	On Cortese List as closed leaking underground storage tanks case associated with General Tire Service.

Source: May 2020 Initial Site Assessment.

Construction of the project, and other projects in the vicinity, would result in potential exposure to hazardous waste/materials related to ground-disturbing activities and the removal or modification of facilities and structures. Soils in the vicinity of roadways may be contaminated with aerially deposited lead, and agricultural soils may be contaminated with pesticides and other

materials. Structures may contain lead-based paint, asbestos, or other hazardous materials. Avoidance and minimization measures are included in the project to address the removal of these materials, including the requirement for a health and safety plan to test soils before construction and appropriately dispose of contaminated materials.

Other projects in the area would encounter many of the same potential effects associated with hazardous materials. However, all projects must comply with state and federal regulations to prevent releases of hazardous materials and ensure worker and public safety. Implementation of avoidance and minimization measures would offset any potential project effects, ensuring that cumulative effects associated with hazardous materials are avoided. The project would not contribute to negative cumulative impacts because the project area would benefit from the removal of these materials according to state and federal safety standards.

No-Build Alternative

If selected, the No-Build Alternative would result in no construction activities disturbing or handling hazardous waste or materials.

American Avenue and North Avenue

Aerially Deposited Lead

Results of the soil analysis found the top one-foot of soil from the southbound shoulder in the project area would be considered California Hazardous Waste. Soil below one-foot is considered non-hazardous. Depending on construction activities and the soil excavation depth, the northbound shoulder is considered California Hazardous Waste from zero to three-feet.

Asbestos-Containing Materials and/or Lead-Based Paint

Results of the analysis of lead in paint indicated that lead is present on the structures, but the paint would not be considered California or Federal hazardous waste based on lead content. Buildings and structures in the proposed project location may contain lead-based paint or asbestos-containing material. Buildings and structures will be surveyed prior to acquisition and/or demolition.

Results of the asbestos analysis indicate that chrysotile asbestos at concentrations of 40 percent exists in the sheet packing used as barrier rail shims on the structures below:

- American Avenue Overcrossing Bridge Number 42-0205
- Calwa Overhead Bridge Number 42-0208R and 42-0208L
- Cedar Avenue Overcrossing Bridge Number 42-0209
- North Avenue Overcrossing Bridge Number 42-0210

The asbestos-containing material in the sheet packing is a Category 1 nonfriable, nonhazardous material Studies also found the potential for asbestos-containing transit-pipe, typically associated with underground utilities, which could be encountered during construction of the planned roadway improvements as utilities are relocated.

An Asbestos Compliance Plan is required for this project.

The 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. The following standard measures will be implemented to avoid and minimize the potential impacts from the removal and handling of hazardous waste during construction:

- Further site investigations would be conducted once the “preferred” alternatives are selected.
- Residual organochlorine pesticides (and associated elevated arsenic concentrations) may be present in shallow soil within the project study area due to historical non-regulated agricultural operations. The pesticide and arsenic levels on properties that were for agricultural use are not anticipated to exceed regulatory health-based screening thresholds for commercial/industrial land use, but will be tested.
- A Lead Compliance Plan is required for this project to ensure proper handling of lead-containing soil prior to construction.
- If excess soil is generated from the Caltrans right-of-way, it is required to be reused at the same site or disposed of in accordance with the Department of Toxic Substances Control requirements as defined in established agreements made with Caltrans (2016). For properties adjacent to State Route 99 with the potential for aerially deposited lead, if excavated soil will not be reused at the same site of excavation, an aerially deposited lead study is required to determine levels and treatment of the soil removed. Soil being used at another site would not qualify to avoid conducting the study and treatment required.
- The top one-foot of soil from the southbound shoulder of State Route 99 would be considered California hazardous waste. Soil below one-foot is considered non-hazardous. Depending on construction activities and the soil excavation depth scenario, the northbound shoulder is considered California hazardous waste from zero to three feet. Soil, if generated from the median of State Route 99, would be considered non-hazardous. If imported borrow (soil) is needed for the project, Caltrans standard contract provisions are included in the contract to ensure borrow material comes from approved sites.
- Written notification to the San Joaquin Valley Unified Air Pollution Control District is required 10 working days prior to any demolition activity,

whether asbestos is present or not. This would be required if the bridge structures are to be demolished.

- If found during construction, material suspect of containing asbestos would be collected for laboratory analysis to determine proper handling and disposal in accordance with regulatory requirements. Buildings and structures will be surveyed for asbestos and lead prior to acquisition and/or demolition.
- This project would be subject to the San Joaquin Valley Air Pollution Control District Rule 9510 (Indirect Source Review Rule) that applies to construction equipment emissions for transportation projects that exceed two tons of either PM10 and/or NOX air pollutants. Compliance with the rule would ensure that any unexpected impacts are minimized. The construction contractor would be responsible for the Indirect Source Review Air Impact Analysis and any applicable fees. The analysis estimates the construction equipment emissions. The contractor can choose to reduce the emissions by using a construction fleet that is "cleaner than the California state average" or, if emissions exceed the limits, the contractor can make the payment of fees paid to the San Joaquin Valley Air Pollution Control District.
- Caltrans Standard Specifications pertaining to dust control and dust palliative requirement are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications Section 14-9.02 "Air Pollution Control" and Section 14-9.03 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.
- An Asbestos Compliance Plan is required for this project to ensure proper handling of asbestos material in bridge structures, transit-pipe, and underground utilities prior to construction.
- Appropriate standard specifications and plans addressing all hazardous waste concerns will be included into the construction package to ensure all regulatory requirements are met for proper handling and disposal of materials/wastes.

Avoidance, Minimization, and/or Mitigation Measures

American Avenue and North Avenue

No mitigation is required.

2.2.3 Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the main federal law that governs air quality. The California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency

(U.S. EPA) 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 (also known by the acronym NAAQS).

The national and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM10) and particles of 2.5 micrometers and smaller (PM2.5), Lead (Pb), and sulfur dioxide (SO2). In addition, state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H2S), and vinyl chloride.

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

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

Conformity

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

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

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter (PM10 and PM2.5), and in some areas (although not in

California), sulfur dioxide (SO2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

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

Affected Environment

An Air Quality Report was completed for the project in January 2021 to provide information on project compliance with air quality regulations and goals and on the potential air emissions from the project.

Components of the affected environment for air quality in the project area are conditions in the air basin where the project is located, the air quality constituents considered to be toxic to human health and the environment, and the current attainment status of the project to meet federal and state criteria pollutant standards.

Greenhouse gases are reported in Chapter 3, Section 3.3 Climate Change, of this document.

Air Basin

The project lies within the San Joaquin Valley Air Basin, which is one of 15 air basins in California established to regulate air emissions on a regional basis. The U.S. Environmental Protection Agency has delegated responsibility to air districts to establish local rules to protect air quality. Caltrans' Standard Specification 14-9.02 (Caltrans, 2015) requires compliance with all applicable air quality laws and regulations, including local and air district ordinances and rules. The San Joaquin Valley Air Pollution Control District has jurisdiction to oversee and implement air quality regulation in the basin.

In the region, air flow is channeled by mountain ranges, with the predominant wind direction following the valley's north-south axis in one direction. The second most prevalent wind follows this pattern as well, but in the opposite direction. California's coastal mountain ranges limit the inflow of maritime air into the interior of California. Due to subsidence inversion (discussed below), marine air flow over the mountains is stifled and air flow is limited to breaks or low points in the coastal range. The greatest portion of maritime air reaches the Central Valley through a major break in the coastal ranges through the Carquinez Straits of San Francisco Bay.

During the day, precursor emissions from the Bay Area and the northern basin move downwind into the interior San Joaquin Valley, accumulating in a region that extends roughly from the cities of Stockton to Bakersfield. Limited airflow allows an escape of some air over the Tehachapi Mountains into the Mojave Desert. At night, the wind pattern is much the same. However, cooler drainage winds at the Tehachapi Mountains force the air back northwards, in a circular air pattern known as the Fresno eddy. The pollutants swirl in a counterclockwise pattern and return the air back to the polluted urban areas, where more precursors are added the next day. Nighttime winds are caused by a jet stream of fast-moving air—up to 30 miles per hour—about 1,000 feet above the valley floor. Pollutants transported to higher altitudes due to daytime heating settle downwards due to the drainage winds.

Once marine air flows into the basin, it is relatively trapped. The San Joaquin Valley is an essentially closed basin surrounded by the coastal ranges on the west, the Tehachapi mountains to the south, and the Sierra Nevada range to the east. These conditions result in poor horizontal movement of pollutants;

meanwhile, high pressure hinders vertical pollutant movement, so pollutants settle and accumulate.

An air pattern that hinders the circulation of air in the basin is called an "inversion." Inversions occur when the air temperature increases with height, instead of decreasing. Pollutants will rise and disperse if they are warmer than the surrounding air. When pollutants encounter air of the same temperature or higher, they will remain at that elevation. Vertical movement is stifled, when the air above is warmer or higher, resulting in a stable atmosphere near the valley floor with poor vertical pollutant dispersion. As a result, air pollutant emissions build up and remain underneath inversions, sometimes for days. The inversion effect is a major factor, along with geography, contributing to air pollutants becoming trapped in the valley where the project is located.

Federal and State Ambient Air Quality Pollutants

The federal and state governments have established ambient air quality standards to define clean air for the protection of human health and the environment. An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harmful effects to human health or the environment.

See Table 2-11 to see the pollutants with their effects and typical sources.

Table 2-11 State and Federal Criteria Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases, volatile organic compounds and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Respirable Particulate Matter (PM_{10})	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Fine Particulate Matter ($PM_{2.5}$)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and reactive organic gases.
Carbon Monoxide (CO)	Carbon monoxide interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. Carbon monoxide also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. Carbon monoxide is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Visibility-Reducing Particles (VRP)	Reduces visibility. Produces haze. Note: Not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in national parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Sulfate	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide (H_2S)	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes, such as refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes.

Source: Caltrans, May 2020.

Criteria Pollutants and Attainment Status

The San Joaquin Valley Air Basin where the project is located is in nonattainment for the following pollutants:

- State: 1-hour and 8-hour ozone (O3), particulate matter 10 (PM10), and particulate matter 2.5 (PM2.5) standards.
- Federal: 8-hour ozone (O3), particulate matter – 2.5 (PM2.5) standards.

The basin is in attainment for the federal particulate matter 10 and carbon monoxide standards.

The following tables (Tables 2-13 through 2-15) present the state and federal attainment status for all regulated air pollutants in the San Joaquin Valley Air Basin. The tables show air quality trends in data collected at the Fresno Drummond Street and Fresno Pacific University monitoring stations for the past 5 years.

Table 2-12 State and Federal Attainment Status

Pollutant	State Attainment Status	Federal Attainment Status
1-Hour Ozone	Nonattainment/Severe	Not applicable
8-Hour Ozone (O_3)	Nonattainment	Nonattainment/Extreme
Respirable Particulate Matter (PM_{10})	Nonattainment	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment	Attainment/Unclassified
Sulfur Dioxide (SO_2)	Attainment	Nonattainment/Unclassified
Lead (Pb)	Attainment	No Designation/ Classification
Visibility-Reducing Particles	Unclassified	Not applicable
Sulfates	Attainment	Not applicable
Hydrogen Sulfide	Unclassified	Not applicable
Vinyl Chloride	Attainment	Not applicable

Source: January 2021, Air Quality Report.

Table 2-13 Ozone Concentrations for 2014 through 2018 at the Fresno Drummond Avenue Monitor

Ozone Standards	2014	2015	2016	2017	2018
Maximum 1-hour concentration	0.110	0.35	0.117	0.125	0.119
Number of days exceeded: State 0.09 ppm	9	12	13	8	6
Maximum 8-hour concentration	0.095	0.110	0.094	0.104	0.097
Number of days exceeded: State 0.070 ppm	44	41	60	31	34
Number of days exceeded: Federal 0.070 ppm	43	39	57	29	32

Source: January 2021, Air Quality Report.

Table 2-14 PM_{10} Concentrations for 2014 through 2018 at the Fresno Drummond Avenue Monitor

Particulate Matter 10 Standards	2014	2015	2016	2017	2018
State Maximum 24-hour concentration	107.3	116.7	86.3	120.5	154.8
Federal Maximum 24-hour concentration	102.9	120.7	88.3	115.6	152.2
Number of days exceeded: State: *50 µg/m³*	108.9	80.37	98.9	111.6	116.0
Number of days exceeded: Federal: *150 µg/m³*	0.0	0.0	0.0	0.0	0.0
State Maximum Annual concentration	41.8	39.4	38.0	44.2	45.7
Federal Maximum Annual concentration	41.4	39.6	38.0	44.0	45.8

Source: January 2021, Air Quality Report.

Table 2-15 $PM_{2.5}$ Concentrations for 2014 through 2018 at the Fresno Pacific Hamilton/Winery Avenue Monitor

Particulate Matter 2.5 Standards	2014	2015	2016	2017	2018
Maximum 24-hour concentration	58.2	46.4	53.3	74.5	189.8
Number of days exceeded: Federal: *35 µg/m³*	17.0	No data	9.0	25.1	21.5
State Maximum Annual concentration	11.4	No data	8.6	12.9	15.2
Federal Maximum Annual concentration	11.4	No data	11.1	12.9	15.2

Source: January 2021, Air Quality Report.

Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency regulate 188 air toxics, also known as hazardous air pollutants. The U.S. Environmental Protection Agency has assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Volume 72, Number 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of U.S. Environmental Protection Agency's Integrated Risk Information System (IRIS) (found online at https://www.epa.gov/iris). In addition, the U.S. Environmental Protection Agency identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-hazard contributors from the 2011 National Air Toxics Assessment (found online at https://www.epa.gov/national-air-toxics-assessment). These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While the Federal Highway Administration considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future U.S. Environmental Protection Agency rules.

The 2007 U.S. Environmental Protection Agency rule requires controls that will dramatically decrease mobile source air toxics emissions through cleaner fuels and cleaner engines. According to a Federal Highway Administration analysis using the U.S. Environmental Protection Agency's MOVES2014a model, even if vehicle activity (vehicle miles traveled) increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emission rate for the priority mobile source air toxics is projected for the same time period. The air quality studies for the project included a qualitative analysis for potential increased mobile source air toxics.

Asbestos and Lead

The project is in Fresno County, which has naturally occurring asbestos. However, the project is not in areas of ultramafic rock formations or soils where naturally occurring asbestos is usually present. The project is in an area that is in attainment for lead.

Regional and Project-Level Air Conformity

To achieve regional conformity status, a transportation project must be included in a Regional Transportation Plan. The regional plan is a list of projects that are modeled together to meet the region's air quality emissions goals. This project is in the Fresno Council of Governments 2018 Regional Transportation Plan and Formal Amendment number 3 as well as the 2019 Federal Transportation Improvement Program and Formal Amendment number 12.

The project is also subject to project-level conformity, as the project requires a routine Environmental Assessment under the National Environmental Policy Act and is considered a regionally significant project. A regionally significant project is a nonexempt transportation project that serves regional transportation needs. Therefore, under 40 Code of Federal Regulations Section 9.109, a project-level hot-spot analysis for conformity is required. The required project information was submitted for interagency consultation in July 2020, and the U.S. Environmental Protection Agency and Federal Highway Administration concurred in October 2020 that the project is not a "Project of Air Quality Concern."

Final project-level conformity determination includes coordination with the Federal Highway Administration to ensure any future formal amendments to the regional plans are in order and that they list the project scope, timeline, and funding accurately prior to signature of the final environmental document for this project. Project-level conformity documentation would require public notification, with documentation of Federal Highway Administration project-level determination included in the air quality report prior to signature of the final environment document.

Environmental Consequences

This section describes the results of the air quality analyses conducted for the project. The analyses conducted applied methodology and assumptions that are consistent with federal and state requirements for air quality. The analyses also used guidelines and procedures provided in applicable air quality analysis protocols, such as the Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) (Garza et al., 1997), Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM10 and PM2.5 Nonattainment and Maintenance Areas (U.S. Environmental Protection Agency, 2015), and the Federal Highway Administration Updated Interim Guidance on Air Toxics Analysis in the National Environmental Policy Act Documents (Federal Highway Administration, 2016).

Key findings from the air quality study are listed below:

- Regional Air Quality Conformity—The project has been modeled in the Fresno Council of Governments 2018 Regional Transportation Plan/Sustainable Communities Strategies. This means, when considered with a program (or group) of projects, the program projects together contribute to meet all of the ambient air quality emissions standards and goals for the San Joaquin Valley Air Basin.
- Carbon Monoxide (CO)—The project, individually, meets the carbon monoxide protocol standards to a satisfactory level, and no further analysis was required. In 1997, the San Joaquin Valley Air Basin was designated as a maintenance area for carbon monoxide (CO) by the Environmental Protection Agency, and the Valley was compelled to adhere to a 20-year maintenance plan to decrease the levels of CO to acceptable levels. This goal was achieved November 30, 2017.
- Ozone (O3)—While the project is in a nonattainment area for the federal and state 8-hour ozone levels, when projects are listed in an approved Regional Transportation Plan with associated conformity emissions analysis, the projects are considered to be conforming to the State Implementation Plan for ozone.
- Particulate Matter 2.5 (PM2.5)—The project at American Avenue, individually, has lower PM2.5 emissions in 2046 (a 20-year planning horizon), compared to the No-Build PM2.5 emissions if no project were built. At North Avenue, the 2046 PM2.5 emissions are less than if no project were built.
- Particulate Matter 10 (PM10)—The project at American Avenue, individually, has higher PM10 emissions in 2046 (a 20-year planning horizon), compared to the No-Build PM10 emissions if no project were built. At North Avenue, the 2046 PM10 emissions are the same or greater than if no project were built.

- Particulate Matter 10 (PM10) Hot-Spot Analysis—The project was submitted for interagency consultation on July 10, 2019. It was deemed not a "Project of Air Quality Concern" by the interagency consultation partners and therefore did not require a Particulate Matter 10 hot-spot analysis. Concurrence for "Not a Project of Air Quality Concern" was granted by the Environmental Protection Agency on September 16, 2019 and by the Federal Highway Administration on September 16, 2019.
- Mobile Source Air Toxics (MSAT)—The analysis conducted for the project, according to Federal Highway Administration guidance to assess mobile source air toxics, found the project is considered a "Project with No Meaningful Potential MSAT Effects" and best falls into the category of "Low Potential MSAT Effects." The proposed alternatives would not increase emissions substantially above the no-build scenario. Mobile source air toxics emissions in the study area are likely to be lower in the future, in all cases, because of improved technology, according to the Environmental Protection Agency's analysis.
- Construction Conformity—Emissions from construction equipment are expected and would include carbon monoxide (CO), nitrogen oxides (NOx), volatile organic compounds, directly emitted particulate matter (PM10 and PM2.5), and toxic air contaminants such as diesel exhaust particulate matter. However, implementation of Caltrans Standard Specifications in Section 14, as well as other measures included in the project, would lessen potential impacts from the project.
- Carbon Dioxide (CO2)—Carbon dioxide is a greenhouse gas and is discussed in Chapter 3, Section 3.3 Climate Change of this document.

Improvements to local roads and construction of complete interchanges at the American Avenue and North Avenue interchanges within the project area would allow the streamlined movement of goods along this segment of the State Route 99 corridor, which is the only major thoroughfare for the eastern portion of the Central Valley. In addition, with improvement of the American Avenue and North avenue interchanges from half interchanges to full interchanges, vehicles would have better access to local destinations without driver confusion due to non-standard interchange configurations. The traffic would move more efficiently on and off State Route 99, which would improve mainline operations as well as local road operations. Currently, traffic must circulate on local parallel roads due to lack of ramps to and from American Avenue and North Avenue.

The improved interchanges would improve stop-and-go traffic due to driver confusion and give drivers more direct access routes to their destinations. As air studies have documented, the highest vehicle emissions occur in stop-and-go traffic, while free-flowing traffic produces the least amount of vehicle emissions, regardless of the criteria pollutant.

Short-term air quality impacts would arise from construction activities and are considered unavoidable. However, construction emissions from the proposed project are negligible in terms of the overall project area and would not substantively impact the overall project area emissions.

Long-term air quality impacts from increased vehicle travel in the area due to population growth would be alleviated by construction of the project. The project improves safety and operational efficiency by giving truck traffic access to specific direct routes to and from the industrial areas, providing truck-specific traffic features (wider and longer turn lanes and lane-changing distances), and minimizing driving hazards. The improvements would result in less truck traffic delay and reduce the amount of truck emissions released.

The following section continues with more detailed discussion for each of the topics in the bulleted list above.

Regional and Project-Level Air Quality Conformity

The project is included in the Fresno Council of Governments 2018 Regional Transportation Plan/Sustainable Communities Strategies and Formal Amendment number 3 as well as the cost constrained 2019 Federal Transportation Improvement Program and Formal Amendment number 12.

This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and would have air quality impacts consistent with those identified in the State Implementation Plans for achieving the National Ambient Air Quality Standards.

Carbon Monoxide (CO)

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 and 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 because the key criterion (8-hour concentration) is the same as the federal standard: 9 parts per million for the federal standard and 9.0 parts per million for the state standard. See Table 2-16, which summarizes the project-level carbon monoxide analysis.

Table 2-16 Summary of Project-Level Carbon Monoxide Analysis

Protocol Question	South Fresno State Route 99 Corridor
3.1.1: Is the project exempt from all emissions analyses?	No. The project is not exempt because it does not fit any of the exemption categories identified in 40 Code of Federal Regulations 93.126.
3.1.2: Is the project exempt from regional emissions analyses?	No. The project does not align with any of the project types exempted from regional emissions analyses under 40 Code of Federal Regulations 93.127 (proceed to 3.1.3).
3.1.3: Is the project locally defined as regionally significant?	Yes. The project is considered a regionally significant transportation project, according to 40 Code of Federal Regulations 93.101, because it is included in the modeling of the area's transportation network (proceed to 3.1.4).
3.1.4: Is the project in a federal attainment area?	Yes. In 1997, the San Joaquin Valley Air Basin was designated as a maintenance area for carbon monoxide (CO) by the Environmental Protection Agency, and the San Joaquin Valley was compelled to adhere to a 20-year maintenance plan to decrease the levels of carbon monoxide to acceptable levels. This goal was achieved November 30, 2017.
3.1.9: Examine local impacts; Is the project in a CO nonattainment area?	No
3.1.9: Examine local impacts; Was the area redesignated as "attainment" after the 1990 Clean Air Act?	Yes
3.1.9: Examine local impacts; Has "continued attainment" been verified with the local Air District?	Yes
3.1.9: Examine local impacts; Does project worsen air quality?	No
Conclusion:	Project satisfactory, no further analysis needed.

Source: January 2021, Air Quality Report.

Ozone (O3)

The project is in a nonattainment area for the state 1-hour ozone level and the federal and state 8-hour ozone levels. Ozone is considered to be a regional pollutant. Currently, there are no project-level analysis tools or approved guidelines for ozone. When projects are listed in an approved Regional Transportation Plan with associated conformity emissions analysis, the projects are considered to be conforming to the State Implementation Plan for ozone.

Particulate Matter 2.5 and 10

American Avenue

Particulate matter is reported below in pounds per day, which is the amount of emissions generated during a day.

Table 2-17 Particulate Matter Emissions Alternative Comparison at American Avenue

American Avenue	$PM_{2.5}$ (pounds per day)	PM_{10} (pounds per day)
2019 Existing	0.022	0.093
2026 No-Build Alternative	0.024	0.100
2026 Alternative 1	0.037	0.171
2026 Alternative 2	0.035	0.159
2046 No-Build Alternative	0.100	0.024
2046 Alternative 1	0.050	0.229
2046 Alternative 2	0.050	0.233

Source: January 2021, Air Quality Report.

Particulate Matter 2.5 (PM2.5)

In a comparison of the future build alternatives with the No-Build Alternative scenario for PM2.5 emissions in 2026 Opening Day at American Avenue, the build alternatives are higher than the No-Build Alternative PM2.5 emissions. See Table 2-17 above.

The 2026 No-Build Alternative PM2.5 emissions are 0.024 pound per day. Alternative 1 PM2.5 emissions are 0.037 pound per day, which is 0.013 pound per day more than the no-build scenario. Alternative 2 emissions are 0.035 pound per day, which is 0.011 pound per day more than the no-build scenario.

In 2046, with the same comparison but for 20 years after Opening Day, the build alternatives are lower than the No-Build Alternative PM2.5 emissions. The 2046 No-Build Alternative PM2.5 emissions are 0.100 pounds per day. Alternative 1 PM2.5 emissions are 0.0498 pounds per day, which is 0.0502 pound per day less than the no-build scenario. Alternative 2 emissions are 0.050 pound per day, which is 0.050 pound per day less than the no-build scenario.

Particulate Matter 10 (PM_{10})

In a comparison of the future build alternatives with the No-Build Alternative scenario for PM10 emissions in 2026 Opening Day at American Avenue, the build alternatives are higher than the No-Build Alternative PM2.5 emissions. See Table 2-17 above.

The 2026 No-Build Alternative PM10 emissions are 0.100 pound per day. Alternative 1 PM10 emissions are 0.171 pound per day, which is 0.071 more than the no-build scenario. Alternative 2 PM10 emissions are 0.159 pound per day, which is 0.059 pound per day more than the no-build scenario.

In 2046, with the same comparison but for 20 years after Opening Day, the build alternatives are higher than the No-Build Alternative PM10 emissions. Alternative 1 PM10 emissions are 0.229 pound per day, which is 0.205 pound

per day more than the no-build scenario. Alternative 2 PM10 emissions are 0.233 pound per day, which is 0.209 pound per day more than the no-build scenario.

North Avenue

Table 2-18 Particulate Matter Emissions Alternative Comparison at North Avenue

North Avenue	$PM_{2.5}$ (pounds per day)	PM_{10} (pounds per day)
2019 Existing	0.149	0.623
2026 No-Build Alternative	0.211	0.885
2026 Alternative 2	0.161	0.783
2026 Alternative 4	0.174	0.857
2046 No-Build Alternative	0.295	1.01
2046 Alternative 2	0.206	1.01
2046 Alternative 4	0.211	1.04

Source: January 2021, Air Quality Report.

Particulate Matter 2.5 (PM2.5)

In a comparison of the future build alternatives with the No-Build Alternative scenario for PM2.5 emissions in 2026 Opening Day at North Avenue, the build alternatives are less than the No-Build Alternative PM2.5 emissions. See Table 2-18 above.

The 2026 No-Build Alternative PM2.5 emissions are 0.211 pound per day. Alternative 2 PM2.5 emissions are 0.161 pound per day, which is 0.050 pound per day less than the no-build scenario. Alternative 4 emissions are 0.174 pound per day, which is 0.037 pound per day less than the no-build scenario.

In 2046, with the same comparison but for 20 years after Opening Day, the build alternatives are lower than the No-Build Alternative PM2.5 emissions. The 2046 No-Build Alternative PM2.5 emissions are 0.295 pound per day. Alternative 2 PM2.5 emissions are 0.206 pound per day, which is 0.089 pound per day less than the no-build scenario. Alternative 4 emissions are 0.211 pound per day, which is 0.084 pound per day less than the no-build scenario.

Particulate Matter 10 (PM_{10})

In a comparison of the future build alternatives with the No-Build Alternative scenario for PM10 emissions in 2026 Opening Day at North Avenue, Alternative 2 has less emissions as the No-Build Alternative scenario, and Alternative 4 has less than the No-Build Alternative PM10 emissions. See Table 2-18 above.

The 2026 No-Build Alternative PM10 emissions are 0.885 pound per day. Alternative 2 PM10 emissions are 0.783 pound per day, which is 0.102 less than the no-build scenario. Alternative 4 PM10 emissions are 0.857 pound per day, which is 0.028 pound per day less than the no-build scenario.

In 2046, with the same comparison but for 20 years after Opening Day, the Alternative 2 is the same and Alternative 4 are greater than the No-Build Alternative PM10 emissions. The 2046 No-Build PM10 emissions are 1.010 pounds per day. Alternative 2 PM10 emissions are 1.010 pound per day, which is the same as the no-build scenario. Alternative 4 PM10 emissions are 1.04 pound per day, which is 0.03 pound per day more than the no-build scenario.

Particulate Matter 10 (PM10) Hot-Spot Analysis

In particulate matter 10 (PM10) nonattainment or maintenance areas, if a project is determined to be a project of air quality concern (also known by the acronym POAQC), a hot-spot analysis needs to be conducted under the conformity requirement. The U.S. Environmental Protection Agency guidance for particulate matter hot-spot analysis, in concert with interagency consultation (interagency consultation is required), is used to determine whether a project is a project of air quality concern.

The project was submitted for interagency consultation on July 10, 2019. It was deemed not a “project of air quality concern” by the interagency consultation partners and therefore did not require a particulate matter 10 hot-spot analysis. Concurrence for the finding of “not a project of air quality concern” was granted by the Environmental Protection Agency on September 16, 2019 and by the Federal Highway Administration on September 16, 2019.

Mobile Source Air Toxics (MSAT)

The Federal Highway Administration provides guidance on how mobile source air toxics (known by the acronym MSAT) should be addressed in National Environmental Policy Act documents for highway projects. The Federal Highway Administration has developed a tier approach for analyzing mobile source air toxics in National Environmental Policy Act documents. Depending on the specific project circumstances, the Federal Highway Administration has identified three levels of analysis:

- No analysis for exempt projects with no potential for meaningful mobile source air toxics effects
- Qualitative analysis for projects with low potential mobile source air toxics effects
- Quantitative analysis to differentiate alternatives for projects with higher potential mobile source air toxics

Exempt Projects or Projects with No Meaningful Potential Mobile Source Air Toxics Effects

The types of projects included in this category are as follows:

- Projects qualifying as a categorical exclusion under 23 Code of Federal Regulations 771.117(c);
- Projects exempt under the Clean Air Act conformity rule under 40 Code of Federal Regulations 93.126; or
- Other projects with no meaningful impacts on traffic volumes or vehicle mix.

The South Fresno State Route 99 Corridor project best falls into the category of Low Potential mobile source air toxics effects, which requires a qualitative analysis. There are no sensitive land uses (i.e., schools, daycare facilities, senior living) within 500 feet of the proposed project for any of the build alternatives.

Build Alternatives

For each build alternative in the proposed project, the amount of mobile source air toxics emitted would be slightly higher than that for the No-Build Alternative because the additional capacity of the interchanges increases the efficiency of the interchanges and allows more direct access to local areas along State Route 99. This increase in emissions along the new ramps at the interchanges, along with a corresponding decrease in mobile source air toxics emissions along the parallel local roads, is offset somewhat by lower mobile source air toxics emission rates due to increased speeds.

According to the Environmental Protection Agency's MOVES2014 model, as well as the EMFAC (Emissions FACtors) model used in California, emissions of all the priority mobile source air toxics decrease as the vehicle speed increases. Because the estimated vehicle miles traveled under each of the build alternatives is nearly the same, it is expected there would be no appreciable difference in overall mobile source air toxics emissions among the various alternatives.

Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year because of the Environmental Protection Agency's national control programs that are projected to reduce annual mobile source air toxics emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in the National Environmental Policy Act Documents, Federal Highway Administration, October 12, 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the Environmental Protection Agency-projected reductions is so great (even after accounting for vehicle miles traveled growth) that mobile source air toxics

emissions in the study area are likely to be lower in the future in nearly all cases.

No-Build Alternative

If selected, the No-Build Alternative would result in no improvement in traffic conditions and air emissions would increase with increased traffic volume.

Construction Conformity

Construction is anticipated to last 18 months to build both interchanges. Construction activities would not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 Code of Federal Regulations 93.123(c)(5)).

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment are expected and would include carbon monoxide (CO), nitrogen oxides (NOx), volatile organic compounds, directly emitted particulate matter (PM10 and PM2.5), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that comes from nitrogen oxides and volatile organic compounds in the presence of sunlight and heat.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough PM10, PM2.5, and small amounts of carbon monoxide, SO2, nitrogen oxides and volatile organic compounds to be of concern.

Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an added source of airborne dust after it dries.

PM10 emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM10 emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction activities for large development projects are estimated by the U.S. Environmental Protection Agency to add 1.2 tons of fugitive dust per acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Caltrans Standard Specifications (Section 14) on dust minimization require use of water or dust palliative compounds and will reduce potential fugitive dust emissions during construction.

In addition to dust-related PM10 emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate carbon monoxide, SO2, nitrogen oxides, volatile organic compounds and some soot particulate (PM10 and PM2.5) in exhaust emissions. If construction activities were to increase traffic congestion in the area, carbon monoxide and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO2 is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and Air Resources Board regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 parts per million sulfur), so SO2-related issues due to diesel exhaust will be minimal.

Some phases of construction, particularly asphalt paving, may result in short-term odors in the immediate area of each paving site. Such odors would quickly disperse to below detectable levels as distance from the site increases.

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

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

- The construction contractor must comply with Caltrans Standard Specifications in Section 14. Section 14 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. Section 14 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are described in Section 18.
- Water or dust palliative will be applied to 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 will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.
- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter emissions.
- To the extent feasible, 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.
- Mulch will be placed or vegetation planted as soon as practical after grading to reduce windblown particulate matter in the area.

The 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.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

Climate Change

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

Environmental Policy Act determination for the project. See section 3.3 Climate Change.

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

- Caltrans Standard Specification 14.9.02 Air Pollution Control shall be followed by the contractor. The specification requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions also help reduce greenhouse gas emissions.
- The project will include the following Complete Street features: sidewalks, crosswalks, signalization, and wider shoulders. These features will safely accommodate bicycles, support use of non-motorized modes of travel, and fill gaps in the local Active Transportation Network described in the City of Fresno 2014 Active Transportation Plan.
- Any landscaping removed by the project will be replaced following construction of the project according to specifications described in 2.1.5 Visual/Aesthetics section of this document. Landscaping including trees and other vegetation provide shade and absorb carbon dioxide, a greenhouse gas, from the atmosphere.
- The project will replace and install new Intelligent Transportation System elements. These are as follows: update existing traffic signals and install traffic monitoring stations, ramp meters, and closed-circuit televisions. Information from these systems feed back into Caltrans' QuickMap mobile web-based travel alert system. QuickMap provides travelers with real-time road information thereby giving them opportunities to make informed decisions to improve travel conditions. Intelligent Transportation System (ITS) elements improve operational efficiency and reduce congestion-related greenhouse gas emissions.
- Limit idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment during construction.
- The contractor will be responsible for submitting a Solid Waste Disposal and Recycling Report per Caltrans Standard Specification 14-10.02 so the recycling efforts can be monitored. Reducing construction waste and maximizing the use of recycled materials reduces consumption of raw materials, reduces landfill waste, and encourages cost savings.
- Non-Potable water will be used during construction. A potential source for the contractor will be the City of Fresno Recycled Water system that is currently being developed. There are plans to extend the system to the North Avenue Interchange. Alternatively, the contractor may secure non—potable water from another water purveyor such as the Fresno Irrigation District which operates a canal just outside the project limits. Additionally,

the landscape irrigation system at North Avenue will be designed to use the City of Fresno Recycled Water system. If the City's system has not been extended to the North Avenue Interchange at time of construction, then the irrigation system will be connected to potable water with the provision that it can be switched to non-potable water in the future.

- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- Alternative bridge construction (ABC) will be used where possible to reduce construction windows. Use of more precast elements reduces the need for additional falsework, forms, bracing, etc, and reduces the overall duration of construction and greenhouse gas emissions.
- Where lighting is required, higher efficiency LED lights will be used. Reducing the need for electric lighting by using ultra-reflective sign materials and other alternate lighting reduces energy use and therefore reduces greenhouse gas emissions.
- Implement a construction traffic management plan. 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.

2.3 Biological Environment

A Natural Environment Study was completed in July 2019 to study the potential impacts of the project on biological resources. This section of the document discusses biological resources within the project area. While there are six possible subsections in Caltrans environmental documents—Natural Communities, Wetlands and Other Waters, Plant Species, Animal Species, Threatened and Endangered Species, and Invasive Species—this document focuses on one subsection, Animal Species, to address migratory birds and bats. As studies found, there are no other biological resources of concern in the project area. See the beginning of Chapter 1 for explanation regarding the other five subsection topics.

A biological study area was established in early 2019. Literature searches were conducted on January 30 and 31, 2019 to obtain information from databases maintained by resource agencies that study the health of species and their habitat. Field studies were conducted on February 11, 2019, and April 2 and April 9, 2019. Species lists were obtained from the U.S. Fish and Wildlife Service, the Natural Diversity Database from the California Department of Fish and Wildlife, and the Rare and Endangered Plant Inventory from the California Native Plant Society, updated December 30, 2020.

Climate in the project area is typical of the San Joaquin Valley, with hot summers and mild winters, and an average rainfall of 11.5 inches per year, occurring mostly during the winter months. The topography in the area is generally flat with elevations between 313 and 320 feet above sea level. The University of California, Davis' Soil Resource Data describes the soil in the project area as fine sandy loam.

The project area sits on the border between the city of Fresno and Fresno County where intensive farming has been practiced since 1875. Industrial uses developed within the project area following relocation of State Route 99 and construction of the existing interchanges in about 1965. Industrial uses have gathered in the southern area of the city of Fresno since construction of the Central Valley railroad lines.

No rivers or creeks occur in the project vicinity, but several concrete-lined irrigation canals cross through the area. The project would enclose a portion of the North Colony Canal by installing a box culvert. The canal is located on the north side of North Avenue, in the east quadrant of the North-Cedar Avenue intersection. Caltrans would coordinate further with the Fresno Irrigation District. A 1600 Permit and Waste Discharge Requirement (WDR) from the California Department of Fish and Wildlife would be required for work on the canal.

The project footprint (40 properties studied) is dominated by medium-high intensity development especially along State Route 99 and North Avenue. The areas with agriculture are in the surrounding area off American Avenue. The landscape and habitat types are characterized as ruderal (weedy) and agricultural land. Ruderal vegetation is vegetation on land that is highly disturbed by human activity. Agricultural land is vegetated with crops grown for mostly human consumption, along with some non-native grasses. The project area contains orchards and vineyards; the area also contains some fallow fields that have little natural vegetation due to farming practices to prepare the land for planting and use of herbicides to control vegetation.

2.3.1 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. If potentially present, species listed or proposed for listing as threatened or endangered would be discussed in a separate

section, but no threatened or endangered species are in the area for this project, so no further discussion is provided in this document.

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 Species or National Oceanic and Atmospheric Administration Fisheries 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 2019 Natural Environment Study defined the biological study area as the direct impact area of the project plus a greater buffer area to study the presence of potentially suitable habitat (approximately 600 feet in some areas).

There is potential for the following migratory birds and bats to be present or to nest in the project area:

- Migratory birds such as red-tail hawks and Swainson's hawk (*Buteo swainsoni*)
- Bat species such as pallid bat (*Antrozous pallidus*) and western mastiff bat (*Eumops perotis californicus*)

Bird species protected by the Migratory Bird Treaty Act (16 U.S.C. 703-711), may use the study area for roosting, nesting, and foraging year-round. These birds are protected from hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any bird, or any part, nest or egg. Similarly, California Fish and Game Code section 3511 provides that with few exceptions, State fully protected species, including their parts, may also use the study area and also may not be taken or possessed at any time.

Migratory birds within California have an approximate breeding and nesting season from February 1 to September 30. The Swainson's hawk is a summer migrant in the Central Valley of California, breeding in stands with few trees in

juniper-sage flats, riparian areas, and in oak savannah. In California, the Swainson's hawk is listed as threatened. It is protected by additional laws that prohibit the destruction of bird and raptor nests and prohibit the take or possession of any migratory nongame bird as designated in the Migratory Bird Treaty Act. During surveys in the study area inventorying migratory bird species, one red-tailed hawk nest was seen at the American Avenue interchange. No Swainson's hawk or nests were observed in the biological study area. Additionally, one red-tailed hawk nest was seen at the American Avenue interchange.

California has 24 indigenous bat species throughout the state. At least 17 of these bat species are known to use human-made structures, including buildings and bridges. Fifteen California bat species are ranked as having a rare status with state and federal agencies; ten are listed as California Species of Special Concern by the California Department of Fish and Wildlife. Bats are also protected by the California Fish and Game Code, Sections 4150–4154, which prohibits the take or possession of any nongame mammals naturally occurring in the state. The interactions of bats with the transportation system can be positive (roosting opportunities) or negative (physical injury from moving vehicles). Widespread losses of bat roosts and colonies have been occurring through direct and indirect causes such as pest control activities and lawful eviction of bats from structures.

Surveys conducted on April 9, 2019 in the project area found no signs of roosting at the American Avenue and North Avenue bridges.

Environmental Consequences

Build Alternatives

No potential impacts are anticipated from any of the proposed build alternatives to migratory birds or bats that may build nests or roosts within the project area prior to construction. Potential cumulative impacts to migratory birds include those past, present, and future projects that would impact the habitat and potential nesting trees within the project area. Construction of the project would not add to a cumulative loss of potential habitat with the implementation of measures to avoid and minimize potential impacts. The project would avoid the red-tailed hawk nest found at American Avenue with the implementation of measures. Avoidance and minimization measures would be implemented prior to and during construction.

No-Build Alternative

The No-Build Alternative would result in no vegetation removal or disturbance of nests and no birds would be taken. The interchanges would still lack the missing on- and off-ramps, and driving conditions would further deteriorate with increased vehicle delay, as previously discussed.

The 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.

With implementation of the following avoidance and minimization measures, direct and indirect impacts to migratory birds and bats are not expected to occur:

- A preconstruction survey for migratory birds and bats would be conducted 30 days before the start of construction.
- If migratory birds are found nesting within the project footprint, minimization efforts would be coordinated with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife and may include a no-work buffer zone (300 feet) around an active nest and/or a qualified biologist would monitor the active nest during construction activities within the established buffer.
- If an active nest is detected, an environmentally sensitive area (ESA) around the nest area may be established to prevent nesting disturbance.
- Work may be temporarily suspended if nesting activity cannot be prevented. Standard Specifications would be included in the construction bid package to avoid impacts to migratory birds.
- If removal of nest trees were deemed necessary, the removal would occur during the time of year when the nests are not used, between October 1 to January 30.

Since Swainson's hawks are not expected but could potentially occur in the project area, implementation of the following avoidance and minimization measures to avoid direct and indirect impacts are recommended including some additional surveys:

- Prior to construction, Caltrans would conduct preconstruction surveys according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Commission, 2000).
- The surveys would be conducted no less than 30 days prior to construction.
- If an active Swainson's hawk nest is detected, minimization efforts would be coordinated with the California Department of Fish and Wildlife and may include a no-work buffer zone (600 feet) around an active nest and/or a qualified biologist would monitor an active nest during construction activities within the established buffer.
- If the 600-foot no-work buffer zone cannot be maintained, an Incidental Take Permit may be required by the California Department of Fish and Wildlife.

With implementation of the following avoidance and minimization measures, potential impacts to bats are not expected to occur:

- Pre-construction surveys would be conducted to ensure the bridge remains free of roosting bats.
- If roosts are identified within impacted structures, one-way exclusionary devices or deterrents would be installed outside of the maternity roost season to exclude bats prior to beginning construction activities on the structure.
- If roosts are identified outside of impacted structures but within the project area, construction activities that may disturb a maternity roost or seasonal roost for bats will be prohibited or conducted in a manner that minimizes disturbance to bats.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance Under the California Environmental Quality Act

The project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act and the National Environmental Policy Act. The Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project is being, or has been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 (23 USC 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 the California Environmental Quality Act and the National Environmental Policy Act.

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

The California Environmental Quality Act, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the California Environmental Quality Act

Guidelines list a number of “mandatory findings of significance," which also require the preparation of an Environmental Impact Report. There are no types of actions under the National Environmental Policy Act that parallel the findings of mandatory significance of the California Environmental Quality Act. This chapter discusses the effects of this project and the California Environmental Quality Act significance.

3.2 The California Environmental Quality Act Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A “No Impact” answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to the California Environmental Quality Act, not the National Environmental Policy Act, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices 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 the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

The California Environmental Quality Act Significance Determinations for Aesthetics

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

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

No Impact—There are no scenic vistas in the project area. (May 2020, Visual Impact Analysis)

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

No Impact—There are no scenic resources that would be impacted. State Route 99 is not a designated scenic highway in the project area. (May 2020, Visual Impact Analysis)

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?

No Impact—There are no impacts to visual character. The project aligns with applicable zoning and regulations governing scenic quality. Replacement planting and aesthetic treatments would be coordinated with the Fresno 99 Beautification Master Plan and consistent with improvements constructed on State Route 99 north of the project area. (May 2020, Visual Impact Analysis)

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

No Impact—The analysis determined there would be no new sources of light or glare that would adversely affect daytime or nighttime views in the area. (May 2020, Visual Impact Analysis)

3.2.2 Agriculture and Forest Resources

The California Environmental Quality Act Significance Determinations for Agriculture and Forest Resources

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

Would the project:

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

No Impact—A Farmland Conversion Rating form (NRCS-CPA-106) was submitted to the Natural Resources Conservation Service for evaluation. The Service agreed that the land is considered to be "committed to urban development" because the land converted would be narrow strips along the highway, where most properties are zoned for industrial and commercial use, with only one property zoned for agricultural use, and no properties under Williamson Act contract. According to the Farmland Protection Policy Act, as amended, the land is therefore "not to be considered as farmland." (Farmland Conversion Rating form [NRCS-CPA-106] with Natural Resources Conservation Service concurrence October 10, 2019)

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

No Impact—There is no conflict with Fresno County and City of Fresno zoning in the transportation corridor. There are no properties under Williamson Act contract. (Fresno County Planning Department confirmed list of properties October 10, 2019)

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

No Impact—There is no forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)) in the project area.

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

No Impact—There would be no loss of forest or conversion of forest land to non-forest use.

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

No Impact—The project would convert a sliver of land next to the existing American Avenue interchange from agriculture to transportation. The project improves an existing transportation facility that currently serves the farming

activity in the area and provides for the transportation of farming goods and services. No forest land would be impacted.

3.2.3 Air Quality

The California Environmental Quality Act 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?

Significant and Unavoidable Impact—The project would increase carbon dioxide emissions, a greenhouse gas, and therefore conflict with current air quality plans that require reduction of greenhouse gas emissions.

By all regulatory standards, as reported in section 2.2.3 Air Quality of this document, this project is in compliance with all regulatory requirements for regional air-quality conformity, caron monoxide (CO), ozone (O3), particulate matter 2.5 and 10, mobile source air toxics (MSATS), emissions during construction, and for reporting carbon dioxide.

However, emerging requirements and methods to measure greenhouse gas emissions and mitigation are narrowly defined and limited. Caltrans requires projects to attain zero increase of emissions above existing modeled emissions. Based on the current requirement, Caltrans has determined there would be significant impacts from this project, as air emission modeling for carbon dioxide results show increased emissions for 2026, opening day, and 2046, a planning horizon, above the existing 2019 emissions for each of the proposed alternatives at both interchanges.

The project does include features and measures that reduce greenhouse gas emissions, such as: Complete Streets elements with landscaping, bicycle and pedestrian facilities to encourage active transportation over use of gasoline powered vehicles. The installation of Intelligent Transportation System elements designed to improve traffic efficiency and reduce congestion on roadways thereby lowering vehicle emissions. Also, roundabouts proposed under several alternatives contribute to smoother, more efficient traffic circulation resulting in less stop-and-go travel and lower vehicle emissions. Caltrans applies a large list of standard measures on most, if not all, projects during construction that require practices and restrict equipment that reduces dust and equipment emissions. The project proposes an electric charging station toward mitigation of the project impacts. The charging station would

contribute to emerging local, regional, and state programs to promote electric vehicle use instead of gasoline powered vehicles. However, Caltrans currently does not have established regulatory, industry-wide methods to accurately measure whether the project features and measures would reduce emissions enough to mitigate the project impacts. Therefore, the project impacts remain significant and unavoidable. (January 2021 Air Quality Report)

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

Less Than Significant Impact—The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under applicable federal or state ambient air quality standards. While the region is in nonattainment for ozone, particulate matter 10 (PM10) and particulate matter 2.5 (PM2.5), the project would not result in a cumulatively considerable net increase of any criteria pollutants. The project improves the operations of an existing interchange along with local intersections. The project is not considered a Project of Air Quality Concern and is modeled in the 2018 Regional Transportation Plan and Sustainable Communities Strategies. No mitigation is required. (January 2021 Air Quality Report)

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact—The project would not expose sensitive receptors to substantial pollutant concentrations. The project does not cause substantial emissions, and there are no sensitive receptors in range of the project. The project does include feasible project features and construction measures to reduce greenhouse gas emissions, within federal and state regulations, such as: complete street components, waste and air emissions reduction strategies, and the implementation of an electric vehicle charging station. The project's Complete Streets elements include wide shoulders to accommodate bicycles and pedestrians and landscaping that encourage active transportation, and Intelligent Transportation System elements that improve operational efficiency. Roundabouts are proposed under several alternatives that would also contribute to smoother, more efficient traffic circulation. No mitigation is required. (January 2021 Air Quality Report)

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

No Impact—The project would not result in other emissions such as odors adversely affecting a substantial number of people. The project is in an industrial area within a transportation corridor with a major highway, railroads, and the California High-Speed Rail. (January 2021 Air Quality Report)

3.2.4 Biological Resources

The California Environmental Quality Act 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?

No Impact—Field surveys and literature and record searches found there would be no impacts to species, habitat, candidate species, or sensitive or special-status species because there are no such species or habitat in the project area. (July 2019, Natural Environment Study–Minimal Impact)

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact—No riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service are in the project area. (July 2019, Natural Environment Study–Minimal Impact)

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

No Impact—There would be no adverse effect on state or federally protected wetlands because none are found in the project area. (July 2019, Natural Environment Study–Minimal Impact)

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—The project would not interfere with the movement of fish or wildlife species. To ensure this, preconstruction surveys would be done for migratory birds during the nesting season. (July 2019, Natural Environment Study–Minimal Impact)

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

No Impact—There would be no conflicts with any local policies or ordinances protecting biological resources. (July 2019, Natural Environment Study–Minimal Impact)

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—No habitat conservation plans exist for the project area. The land is in a transportation corridor and is planned and zoned for commercial and/or industrial uses by Fresno County (2000 General Plan) and the City of Fresno (2014 General Plan, as amended).

3.2.5 Cultural Resources

The California Environmental Quality Act Significance Determinations for Cultural Resources

Would the project:

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

No Impact—The project would not cause a substantial change to the significance of a historical resource pursuant to Section 15064.5. (April 2020 Archaeological Study Report, April 2020 Historic Resource Evaluation Report, and May 2020 Historic Property Survey Report; State Historic Preservation Officer concurrence letter dated June 23, 2020)

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

No Impact—There would be no substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. (April 2020 Archaeological Study Report, April 2020 Historic Resource Evaluation Report, and May 2020 Historic Property Survey Report; State Historic Preservation Officer concurrence letter dated June 23, 2020)

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

No Impact—No human remains are expected, but if human remains are discovered in construction, the Caltrans policy to comply with California Health and Safety Code Section 7050.5 requires activities would stop and the county coroner would be contacted. The Native American Heritage Commission would be notified if the remains are Native American, pursuant to Public Resources Code Section 5097.98, and the Most Likely Descendent would be notified, as well as Caltrans District 6 Native American Coordinator

to facilitate respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable. (2018, Caltrans Standard Plans and Specifications, as amended)

3.2.6 Energy

The California Environmental Quality Act Significance Determinations for Energy

Would the project:

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

No Impact—The project would not result in a significant impact, during construction or operation, for wasteful, inefficient, or unnecessary consumption of energy. Caltrans is required to meet an extensive array of requirements to conserve, reuse and recycle materials and to require conservation practices during operation and construction activities, as overseen by agencies with regulatory oversight responsibility. (2018, Caltrans Standard Plans and Specifications, as amended)

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

No Impact—The project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency. The project would comply with all federal, state and local rules and regulations to this effect. (2018, Caltrans Standard Plans and Specifications, as amended)

3.2.7 Geology and Soils

The California Environmental Quality Act Significance Determinations for Geology and Soils

Would the project:

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

No Impact—The project would not directly or indirectly cause substantial adverse effects, or risk of loss, injury or death. Caltrans safety standards for design, construction and maintenance require the highest geotechnical standards for transportation.

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 is not near any major topographic or geologic features or faults. The project is not in a known earthquake fault area. (California Geological Survey, Seismic Hazard Zones and Alquist-Priolo Earthquake Fault Zone Interactive Map accessed October 2020)

ii) Strong seismic ground shaking?

No Impact—The project improves existing transportation facilities in an area that has not historically had strong seismic ground shaking. Some minor shaking has been felt from earthquakes located in Southern California and areas on the east side of the Sierra Nevada Mountain Range. (U.S. Geological Survey U.S. Quaternary Faults interactive map accessed October 2020)

iii) Seismic-related ground failure, including liquefaction?

No Impact—The project would improve existing transportation facilities where there are no major topographic or geologic features or faults within or near the project area. The area does not currently support conditions for liquefaction as groundwater is deep in the project area. (U.S. Geological Survey U.S. Quaternary Faults interactive map accessed October 2020)

iv) Landslides?

No Impact—The project lies in an area where the topography is flat, and there is no risk of landslides from the project or to the project. The project does not include large cuts and fills or steep excavation. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project)

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

No Impact—The project would not cause substantial soil erosion or loss of topsoil because the project would abide by Caltrans Statewide Storm Water Permit requirements, which include features and measures to be included into the project design and during construction to prevent soil erosion or topsoil loss. The project would include appropriate Best Management Practices to prevent soil erosion or loss of topsoil. Also, disturbed areas will be reestablished with compost and native hydroseed mix to promote revegetation success and provide erosion control. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project; 2018, Caltrans Standard Plans and Specifications, as amended)

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

No Impact—The project would not be located on a geologic unit or soil that is unstable or would become unstable as a result of the project. The project rebuilds an existing facility. All Caltrans engineering standards are followed to design and construct the project to ensure stability, and not cause instability, landslides, lateral spreading, subsidence, liquefaction or collapse. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project; Caltrans Highway Design Manual – Seventh Edition; 2018, Caltrans Standard Plans and Specifications, as amended)

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

No Impact—The project rebuilds an existing facility and would not be located on expansive soil as defined in the Uniform Building Code (1994) and would not create substantial direct or indirect risk to life or property. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project; Caltrans Highway Design Manual – Seventh Edition; 2018, Caltrans Standard Plans and Specifications, as amended)

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

No Impact—The project reconstructs existing interchanges and does not install septic tanks or wastewater disposal systems for the disposal of wastewater.

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

Less Than Significant Impact—Paleontological resources could potentially lie in sediments beneath the project area, as paleontological resources have been recovered during construction of a project on State Route 99 in Madera County, north of the project area. Discovery is unlikely, though, because the project improves an existing facility, in an area that is highly disturbed by farming practices, canals, underground pipelines and utilities, and the recent construction of the California High-Speed Rail crossing over State Route 99 through the Cedar Avenue interchange with no record of finding significant fossils. Caltrans has adopted standard measures, from previous projects, to monitor and recover, study, and preserve any fossils of scientific significance.

Caltrans measures to protect resources will be implemented during construction of this project, therefore, there would be less than significant impact to paleontological resources from the project. No mitigation is required. (February 2020, Paleontological Evaluation Report)

3.2.8 Greenhouse Gas Emissions

The California Environmental Quality Act Significance Determinations for Emissions

Would the project:

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

Significant and Unavoidable Impact—The project would increase carbon dioxide emissions, a greenhouse gas, and therefore conflict with current air quality plans that require reduction of greenhouse gas emissions.

The analysis found carbon dioxide emissions would increase by 3,414 tons per year at the American Avenue interchange and by 4,281 tons per year at the North Avenue interchange by 2046 with construction of the project as compared to the existing (2019) carbon dioxide emissions.

The increase in emissions would mainly come from population growth in the county along with the implementation of planned development in the area. Improvement of the existing partial interchanges at American and North avenues would provide more direct access and redistribute future traffic that would otherwise use circuitous routes on local roads and adjacent interchanges traveling to and from the project area. The carbon dioxide modeling does not include the benefits gained from the improved efficiencies on the local road system from the project.

The emerging requirements to model and measure mitigation to reduce greenhouse gas emissions are narrowly defined and limited, the modeling results focus on the State highway only, don’t consider the local street system and effectively require zero increase from existing emissions to meet California’s emissions reduction goals.

Based on the current requirement, Caltrans has determined there would be significant impacts from this project, as air emission modeling results show increased emissions for 2026, opening day, and 2046, a planning horizon, above the existing 2019 emissions for each of the proposed alternatives at both interchanges.

The project does include features and measures that reduce greenhouse gas emissions, such as: Complete Streets elements with landscaping to promote

bicycle and pedestrian use and encourage active transportation over gasoline powered vehicles. The installation of Intelligent Transportation System elements designed to improve traffic efficiency and reduce congestion on roadways thereby lowering vehicle emissions. Also, roundabouts proposed under several alternatives contribute to smoother, more efficient traffic circulation resulting in less stop-and-go travel and lower vehicle emissions. Caltrans applies a large list of standard measures on most, if not all, projects during construction that require practices and restrict equipment that reduces dust and equipment emissions. The project proposes an electric charging station toward mitigation of the project impacts. The charging station would contribute to emerging local, regional, and state programs to promote electric vehicle use instead of gasoline powered vehicles. However, Caltrans currently does not have established regulatory, industry-wide methods to accurately measure whether the project features and measures would reduce emissions enough to mitigate the project impacts. Therefore, the project impacts remain significant and unavoidable. (January 2021 Air Quality Report)

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

Significant and Unavoidable Impact—See previous response to a).

3.2.9 Hazards and Hazardous Materials

The California Environmental Quality Act 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?

No Impact—The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project)

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

No Impact—The project would improve operations of the interchanges to reduce the risk of conditions that have the potential to release hazardous materials into the environment. (2018, Caltrans Standard Plans and Specifications, as amended; 2020 Initial Site Assessment and Preliminary Site Investigations)

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—The project would not emit hazardous emissions. There are no schools within one-quarter mile of the project. Caltrans projects are required to follow strict regulations to avoid and minimize the generation of hazardous waste, materials, and emissions. Contingency funding is set aside for any late discovery of hazardous waste and to handle materials during construction according to state and federal standards. (2018, Caltrans Standard Plans and Specifications, as amended)

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact—An Initial Site Assessment was completed in May 2020, and Preliminary Site Investigations have been conducted to identify properties containing hazardous materials. The project alternatives, as they are currently designed, would not be on a site listed under Government Code Section 65962 (Cortese List). (2018, Caltrans Standard Plans and Specifications, as amended; May 2020 Initial Site Assessment)

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

No Impact—The project is not within an airport land use plan or where such a plan has not been adopted, nor within 2 miles of a public airport or public use airport, and would not result in a safety hazard for excessive noise for people residing or working in the project area, according to the August 2020, Noise Impact Study.

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

No Impact—The project would improve conditions for emergency responders and related response plans. Caltrans received letters from emergency responders in March and April 2019 endorsing the proposed project improvements. (Letters came from Fresno Community Medical Center, the Fresno Fire Department, and the California Highway Patrol)

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

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

urban developed area, though some land is irrigated and planted with orchard trees. The project is not considered in an area identified as vulnerable to wildfires on the Caltrans District 6 Climate Change Vulnerability Map.

3.2.10 Hydrology and Water Quality

The California Environmental Quality Act 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 or ground water quality?

No Impact—With implementation of the Caltrans Statewide Stormwater Program, the project would not violate water quality standards, waste discharge requirements or degrade surface or groundwater. The project would comply with and follow the State Water Resources Control Board - Order Number 99-06-DWQ, NPDES Number CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements for Caltrans.

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

No Impact—The project does not decrease groundwater supply or interfere with groundwater recharge or substantially impede groundwater management. The project would improve an existing facility and install an upgraded stormwater system, including stormwater basins to capture storm water.

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

i) Result in substantial erosion or siltation on- or off-site;

No Impact—The project would not substantially alter existing drainage of the area to result in substantial erosion or siltation on or off the site. Storm water policies and practices are implemented and managed during construction to ensure all measures to control erosion and siltation are followed. (State Water Resources Control Board - Order Number 99-06-DWQ, NPDES Number CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements for Caltrans)

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

No Impact—The project would not increase the rate or amount of surface runoff. The project is not in an area known for flooding. The project would install a storm water system to capture all runoff from the state facility. Storm water policies and practices are managed during construction to ensure all measures to control surface runoff are followed. (State Water Resources Control Board - Order Number 99-06-DWQ, NPDES Number CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements for Caltrans)

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

No Impact—The project would not create or contribute runoff water that would exceed the capacity of the drainage systems or add substantial additional sources of polluted runoff because a stormwater system is proposed to address this concern, to capture all runoff from the state facility, which includes treatment of the runoff water. Storm water policies and practices are managed during construction to ensure all measures to control surface runoff are followed. (State Water Resources Control Board - Order Number 99-06-DWQ, NPDES Number CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements for Caltrans)

iv) Impede or redirect flood flows?

No Impact—The project would not impact a floodplain. A Location Hydraulic Study and Floodplain Evaluation Report was completed in November 2018 for the project. Flood Insurance Rate Maps (FIRM) dated February 18, 2009 indicate the project area lies in “Zone X,” defined as outside the 0.2 percent annual chance floodplain. The project complies with Executive Order 11988 (Floodplain Management) as outlined in 23 Code of Federal Regulations 650 Subpart A, which directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains.

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

No Impact—The project is not in an area where flood hazard, tsunami, seiche, or inundation is likely to occur. (November 2018, Location Hydraulic Study and Floodplain Evaluation Report)

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

No Impact—The project does not conflict with or obstruct any known water quality control plan or sustainable groundwater management plan. No concerns regarding flooding, conflicting or obstructing surface water or groundwater, or plans has been identified. (November 2018, Location Hydraulic Study and Floodplain Evaluation Report)

3.2.11 Land Use and Planning

THE CALIFORNIA ENVIRONMENTAL QUALITY ACT Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project does not divide an established community. The project upgrades two existing interchanges that serve all users. (Community studies conducted throughout 2019 and 2020; August 2020, Community Impact Memo)

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

No Impact—The project aligns with city and county land use plans, policy, and regulations, as well as applicable state and federal plans, policies, and regulations regarding land use planning. The Fresno Council of Governments, the City and County are proponents of the project. (2018 Regional Transportation Plan; Investigations of land use documents conducted during 2019 and 2020; August 2020, Community Impact Memo)

3.2.12 Mineral Resources

The California Environmental Quality Act Significance Determinations for Mineral Resources

Would the project:

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

No Impact—The project reconstructs an existing facility. There are no known mineral resources of value in the project area. (California Department of Conservation On-line Mineral Land Classification Interactive Map accessed December 2020)

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact—The project reconstructs an existing facility. There are no recovery sites for important mineral resources on a local general plan, specific plan or other land use plan that includes the project area. (California Department of Conservation On-line Mineral Land Classification Interactive Map accessed December 2020)

3.2.13 Noise

The California Environmental Quality Act Significance Determinations for Noise

Would the project result in:

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

No Impact—The project would comply with local noise ordinances. There are no substantial permanent increases in noise or vibration anticipated from the project, and temporary noise would be managed by application of measures to avoid and minimize construction noise according to local noise ordinances. (August 2020, Noise Study Report)

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

No Impact—The project would not generate excessive groundborne vibration or noise, and there would be no excessive temporary increase with application of measures during construction. (August 2020, Noise Study Report)

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact—The project does not lie within a designated flight plan. There are no private airstrips or public airports within 2 miles of the project area.

3.2.14 Population and Housing

The California Environmental Quality Act Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact—The project would not induce unplanned growth in the area. The County and City have no plans for housing in this area (2000 Fresno County General Plan, 2014 City of Fresno General Plan, and research conducted in 2019 and 2020). No housing or residential neighborhoods exist within or near the project area. The project reconstructs existing infrastructure and does not extend a road or other infrastructure. (Investigations of land use documents conducted during 2019 and 2020; August 2020, Community Impact Memo.)

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

No Impact—The project does not displace or replace substantial numbers of people or housing. (July 2020, Draft Relocation Impact Study)

3.2.15 Public Services

The California Environmental Quality Act 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 improve conditions for fire protection and improve response times. (Letter from the Fresno Fire Department dated April 12, 2019, responding to Caltrans the California Environmental Quality Act Scoping outreach)

Police protection?

No Impact—The project would improve conditions for police protection and improve response times. (Letter from the California Highway Patrol dated

April 17, 2019, responding to Caltrans the California Environmental Quality Act Scoping outreach)

Schools?

No Impact—No schools sit in the project area, but various schools lie in the outlying area. Motorists going to and from those schools would experience improved access when using the interchanges. (Community Impact Assessment Memo dated August 2020, 12 schools in the surrounding area were sent the California Environmental Quality Act Scoping information.)

Parks?

No Impact—There are no parks in the project area. A few parks and recreational centers occur in the outlying area. Motorists going to and from those parks that would experience improved access when using the interchanges. (Community Impact Assessment Memo dated August 2020)

Other public facilities?

No Impact—There are no other public facilities that could be impacted by the project. (Community Impact Assessment Memo dated August 2020)

3.2.16 Recreation

The California Environmental Quality Act Significance Determinations for Recreation

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

No Impact—The project would not cause an increase in use of existing neighborhood or regional parks, or other recreational facilities so that physical deterioration of the facilities would occur or be accelerated. (Community Impact Assessment Memo dated August 2020)

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact—The project does not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse effect on the environment. (Community Impact Assessment Memo dated August 2020)

3.2.17 Transportation

The California Environmental Quality Act Significance Determinations for Transportation

Would the project:

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

No Impact—The project aligns with all transportation programs, ordinances, and policies addressing traffic circulation in the project area, and where relevant has considered improvements for transit, roadway, bicycle and pedestrian facilities.

b) Conflict with or be inconsistent with the California Environmental Quality Act Guidelines Section 15064.3, subdivision (b)?

No Impact—This project is in compliance with the California Environmental Quality Act Guidelines Section 15064.3, Caltrans Policy Memo (September 10, 2020) regarding analysis of transportation impacts under the California Environmental Quality Act for projects on the State Highway System, as well as the Caltrans Transportation Analysis Framework and Transportation Analysis under the California Environmental Quality Act guide to implementation of Senate Bill 743 (Steinberg, 2013) codified at Public Resources Code Section 21099. This project meets criteria set forth in the policy memo that the project is considered a project type that is "*unaffected by the use of vehicle miles traveled as a measure of transportation impacts*" because the impacts are assumed "*not to lead to a measurable and substantial increase in vehicle travel"*.

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 is categorically compatible with existing uses and meets all safety standards, policies and guidelines for transportation facilities.

d) Result in inadequate emergency access?

No Impact—The project improves access for emergency service providers, as stated in letters submitted by the Fresno Fire Department, Fresno Medical Center, and California Highway Patrol in March and April 2019.

3.2.18 Tribal Cultural Resources

The California Environmental Quality Act 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—There are no resources that are listed or eligible for the California Register of Historical Resources, or resources in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). (April 2020 Archaeological Study Report, April 2020 Historic Resource Evaluation Report, and May 2020 Historic Property Survey Report; State Historic Preservation Officer concurrence letter dated June 23, 2020)

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact—No resources were identified as significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. (April 2020 Archaeological Study Report, April 2020 Historic Resource Evaluation Report, and May 2020 Historic Property Survey Report; State Historic Preservation Officer concurrence letter dated June 23, 2020)

3.2.19 Utilities and Service Systems

The California Environmental Quality Act 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—Construction and/or relocation of water, and storm water drainage, electric power, natural gas, and telecommunications facilities are included in the project but would not cause significant environmental effects. These utilities are within public land, primarily within state, city and county transportation right-of-way where negative impacts are not anticipated. The main impact identified would be temporary and intermittent interruption of services while utilities are being relocated and upgraded. No mitigation is required. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project)

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

No Impact—The project does not use water for operational activities. During construction, water is available from outside sources, by contractors, to meet all requirements during construction, including conservation requirements. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project; 2018, Caltrans Standard Plans and Specifications, as amended)

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—No wastewater treatment providers would be needed for this project. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project; 2018, Caltrans Standard Plans and Specifications, as amended)

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

No Impact—The project would not generate solid waste in excess of state or local standards, or in excess of capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. (2018, Caltrans Standard Plans and Specifications, as amended)

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

No Impact—The project complies with all federal, state, and local management and reduction statutes and regulations related to solid waste. (2018, Caltrans Standard Plans and Specifications, as amended)

3.2.20 Wildfire

The California Environmental Quality Act 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?

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

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

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

a, b, c, and d) No Impact—The project would not impair an adopted emergency plan or exacerbate wildfire risks. The project would not require the installation or maintenance of infrastructure that may exacerbate fire risk or that may result in temporary or ongoing fire risk to the environment. The project is not within or near a designated high fire hazard severity zone or in an area identified as vulnerable to wildfires. This project would provide for improved response to emergency and evacuation plans. The project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. (November 2018, Caltrans Project Initiation Document and information from Caltrans design team assigned to the project; Caltrans District 6 Climate Change Vulnerability Map)

3.2.21 Mandatory Findings of Significance

The California Environmental Quality Act 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—The environmental studies conducted for this project found the project would not substantially degrade the quality of the environment. The project would not reduce the habitat of fish or wildlife, cause fish or wildlife population to drop, threaten to eliminate plant or animal communities, reduce the number or restrict the range of rare or endangered plant or animal species, or eliminate important examples of California history or prehistory.

Biological and cultural studies conducted during 2019 and 2020 using data research and field reviews for species, habitat and historical resources found no evidence of the presence of special-status species, and/or of historic resources in the project area. The area is highly disturbed by agriculture and industrial development with no native plant species found. There are no rivers or creeks in the project vicinity so no fish would be affected. There is a potential that migratory birds such as red-tail hawks and Swainson's hawk (Buteo swainsoni) could migrate into the area and nest in trees in the project area, or for bats such as pallid bat (Antrozous pallidus) and western mastiff bat (Eumops perotis californicus) to establish roosts on the existing overcrossing structures. A red-tail hawk nest was found near the American Avenue interchange. Caltrans has measures to avoid and minimize impacts to existing nests according to regulatory requirements. Pre-construction surveys would be conducted to identify any new arrivals and protect them if they do appear. Also, exclusionary measures will be implemented to discourage species safely from roosting prior to and during construction. The State Historic Preservation Officer agreed with Caltrans determination, in a letter dated June 23, 2020, that no sensitive historic or prehistoric resources would be impacted by the project. No mitigation is required.

(2018 Caltrans Standard Plans and Specifications, as amended; July 2019 Natural Environment Study-Minimal Impact; January 2021 Air Quality Report; May 2020 Initial Site Assessment and Preliminary Site Investigations; April 2020 Archaeological Study Report, April 2020 Historic Resource Evaluation Report, and May 2020 Historic Property Survey Report; State Historic Preservation Officer concurrence letter dated June 23, 2020; August 2020 Community Impact Memo; State Water Resources Control Board - Order Number 99-06-DWQ, National Pollutant Discharge Elimination System Number CAS000003, National Pollutant Discharge Elimination System Permit, Statewide Storm Water Permit and Waste Discharge Requirements for Caltrans)

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—The environmental studies found the project would not have individually limited, but cumulatively considerable impacts.

Human activity in the project area began in the 1870's with the completion of the Central Pacific Railroad in 1870 and development of the city of Fresno as a train stop established in 1872. Followed by construction of the "Golden State Highway" in 1927, that was later relocated west to the existing alignment as State Route 99 in 1965. As people came to the area to farm, the city of Fresno and the project area developed industrial and commercial business along the transportation corridor. Today the land use in the project area represents this history and land use decisions made by Fresno County and the City of Fresno, which are generally to support businesses that would utilize the existing transportation corridor to improve the local economy and provide jobs. An Amazon Fulfillment Center and an Ulta Beauty Distribution Center, are two of the more recent (2018) developments located in the area, along with on-going construction of the California High-Speed Rail today, with one section constructed that crosses State Route 99 through the project area over the existing Cedar Avenue interchange.

The proposed improvements maintain an existing facility in a highly urbanized transportation corridor with very small, if any, potential negative environmental impact. Construction of complete interchanges would reduce stop-and-go traffic and provide more direct access to and from the highway. It would reduce the traffic driving in-direct routes on local roads to destinations. Air studies document the highest vehicle emissions occur in stop-and-go traffic, while free-flowing traffic produces the least amount of vehicle emissions. While the 2020 traffic study projections show traffic will increase in the project area, which correlates with the predicted increase in carbon dioxide emissions, this is primarily from predicted increased population growth and implementation of approved local planned developments, and not from construction of the project. The impacts from the individual project are not cumulatively considerable. No mitigation for cumulative impact is required.

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

Significant and Unavoidable Impact—The environmental studies conducted to assess potential impacts to human beings indicate the project would not have substantial effects to human beings, either directly or indirectly.

There are no neighborhoods with residents living within the project area, nor within approximately one and a half miles away from either interchange. There is one farmhouse with a farm business and orchard near the American

Avenue interchange that is potentially impacted by the project. Alternative1, as currently designed, would directly impact the farm buildings and Alternative 2 would relocate the driveway access. There are businesses potentially impacted at the North Avenue interchange. Alternative 2 potentially impacts three businesses, and Alternative 4 potentially affects two businesses. Impacted owners would be eligible for services from Caltrans Relocation Assistance Program designed to reduce impacts to affected property owners. Businesses in the project area would benefit from the improved access and interchange dimensions, especially large trucks. Early assessment by Caltrans Right-of-Way Department indicates there are comparable properties in the project vicinity to relocate affected businesses. Air, noise, water and community studies indicate there would be no negative impacts to sensitive resources, such as, residents, parks, 4(f) properties, to schools, churches, or community centers. No environmental justice populations have been identified within the project area, and therefore would not be affected by the proposed improvements. Negative visual impacts were assessed, and studies found low impact to drivers, as the project replaces existing interchange structures and the project features are consistent with all local, regional, and state transportation planning and land use planning for the area. Landscaping will be added to replace removal of vegetation. The project would have no to low potential for negative cumulative impact, direct or indirect, according to the environmental study results because the project scope matches the existing transportation facilities.

However, this project does disclose increased carbon dioxide, which is a greenhouse gas, which conflicts with current air quality plans that require reduction of greenhouse gas emissions. As presented earlier in this document, emerging requirements and methods to measure greenhouse gas emissions and mitigation are narrowly defined and limited, and there are no regulatory or industry-wide established methods to accurately measure whether the project features and measures would reduce emissions enough to mitigate the project impacts.

By all regulatory standards, as reported in section 2.2.3 Air Quality of this document, this project is in compliance with all regulatory requirements for regional air-quality conformity, carbon monoxide (CO), ozone (O3), particulate matter 2.5 and 10, mobile source air toxics (MSATS), emissions during construction, and for reporting carbon dioxide.

Caltrans and regional partner agencies have determined the project is needed. The project maintains existing facilities, with improvements to local roads and with construction of complete interchanges the project would reduce stop-and-go traffic by providing more efficient direct access to and from the highway. It would reduce the traffic driving in-direct routes on local roads to destinations. As air studies have documented, the highest vehicle emissions occur in stop-and-go traffic, while free-flowing traffic produces the least amount of vehicle emissions, regardless of the criteria pollutant.

The project does include features and measures that reduce greenhouse gas emissions, such as: Complete Streets elements with landscaping that facilitate bicycle and pedestrian use, which encourages active transportation over use of vehicles thereby reducing emissions. The installation of Intelligent Transportation System elements designed to improve traffic efficiency and reduce congestion on roadways which lowers vehicle emissions. Also, roundabouts proposed under several alternatives contribute to smoother, more efficient traffic circulation resulting in less stop-and-go travel and lower vehicle emissions. Caltrans applies a long list of standard measures on most, if not all, projects during construction that require practices and restrict equipment reducing dust and equipment emissions. The project also proposes an electric charging station toward mitigation of the potential impacts. The charging station would contribute to emerging local, regional, and state programs to promote electric vehicle use instead of gasoline powered vehicles.

The project increases greenhouse gas and therefore conflicts with current air quality plans that require reduction of greenhouse gas emissions. Without established regulatory, industry-wide methods to accurately measure whether the project features and measures would reduce emissions enough to mitigate the project impacts, Caltrans must therefore determine that the project impacts for increased greenhouse gas emissions are significant and unavoidable.

3.3 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) 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 gases generated by human activity, including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), tetrafluoromethane (CF4), hexafluoroethane (C2F6), sulfur hexafluoride (SF6), and various hydrofluorocarbons (HFCs). Carbon dioxide is the most abundant; 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 Caltrans addresses the impacts of climate change: “mitigation” and “adaptation.” Mitigation covers the

activities and policies aimed at reducing greenhouse gas emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.3.1 Regulatory Setting

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

Federal

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

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

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

Various efforts have been made at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 U.S. Code Section 6201) and Corporate Average Fuel Economy (also known by the acronym CAFE) Standards. The act established 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 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: This bill 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 (LCFS) 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 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 (MPO) for each region must then develop a "Sustainable Communities Strategies" 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): This order directs State entities under the direction of the Governor, including the California Air Resources Board, the California Energy Commission, and the California 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): This order 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 (MMTCO2e). Finally, it requires the California Natural Resources Agency to update the state's climate adaptation strategies, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, Chapter 249, 2016: This bill codifies the greenhouse 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: This bill declared "it to be the policy of the state that the protection and management of natural and working lands is an important strategies 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: This bill 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 the California Environmental Quality Act from a focus on automobile delay to alternative methods focused on vehicle miles traveled to promote the state's goals of reducing emissions and traffic-related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires the California Air Resources Board to prepare a report that assesses progress made by each Metropolitan Planning Organization in meeting its established regional greenhouse gas emission reduction targets.

Executive Order B-55-18 (September 2018): This order 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 emissions.

Executive Order N-19-19 (September 2019): This order 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.

3.3.2 Environmental Setting

The proposed project lies in Fresno County, California, within the central San Joaquin Valley, which sits approximately in the center of the state. The project improves two existing interchanges on State Route 99, with an alignment that travels through the project area in a northwest-southeast orientation, crossing a local road system that forms a north-south-oriented grid pattern. The project would improve the operations of the half-interchanges at American Avenue and North Avenue by making them full-interchanges, closing the existing Cedar Avenue northbound off-ramp and southbound on-ramp and moving the off-ramps to North Avenue. The project improvements would rebuild standard

interchange configurations with updated dimensions for vehicles and trucks, reduce out-of-direction travel, provide for safer vehicle movement, and accommodate predicted future increases in traffic volume.

American Avenue is a half interchange at post mile 14.512 in a rural agricultural area of the county. North Avenue and Cedar Avenue are separated from each other by 0.33 mile as two half-interchanges at post miles 17.255 and 16.925 in an urban industrial area inside the southern sphere of influence boundary for the City of Fresno.

The population of Fresno County is 1,023,353 people as reported by the California Department of Finance on May 1, 2020. The county has experienced steady continuous growth at an average rate of 8 percent per year. In 2020 and 2021, the area has seen a recent surge in new residents fleeing high housing costs in the larger coastal and urban metropolitan areas; new residents coming from other parts of the state might also reflect the greater flexibility for workers to “telework” (resulting from the COVID-19 pandemic) desiring more affordable locales to live in. The City of Fresno is the eighth largest city in the state and the largest city in Fresno County, with a current population of 557,320 (2020) and predictions of 614,011 in 2026, and 745,045 in 2046.

The project is within an existing transportation corridor that includes State Route 99, the Burlington Northern and Santa Fe (BNSF) railroad line and Golden State Boulevard. The corridor connects the major cities inland from the California coast such as Bakersfield, Fresno, and Sacramento. Other railroads also crisscross the project area. The Calwa railroad transfer yard sits within the corridor northeast of the North Avenue interchange with multiple railroad spurs designed to manage train traffic through the area.

The Fresno Council of Governments guides transportation development in the project area. Fresno County and the City of Fresno are the jurisdictional planning agencies for land use in the project area. The County and the City have established planning for an industrial priority area along State Route 99 and between State Route 99 and State Route 41 to the west, and they are implementing programs to attract new businesses and a skilled workforce to the project region. The project interchanges serve as main points of access for the existing and developing industrial and commercial businesses sitting along this portion of State Route 99 as part of an area dubbed “The Industrial Triangle.” Peak-hour congestion is expected to increase over time.

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

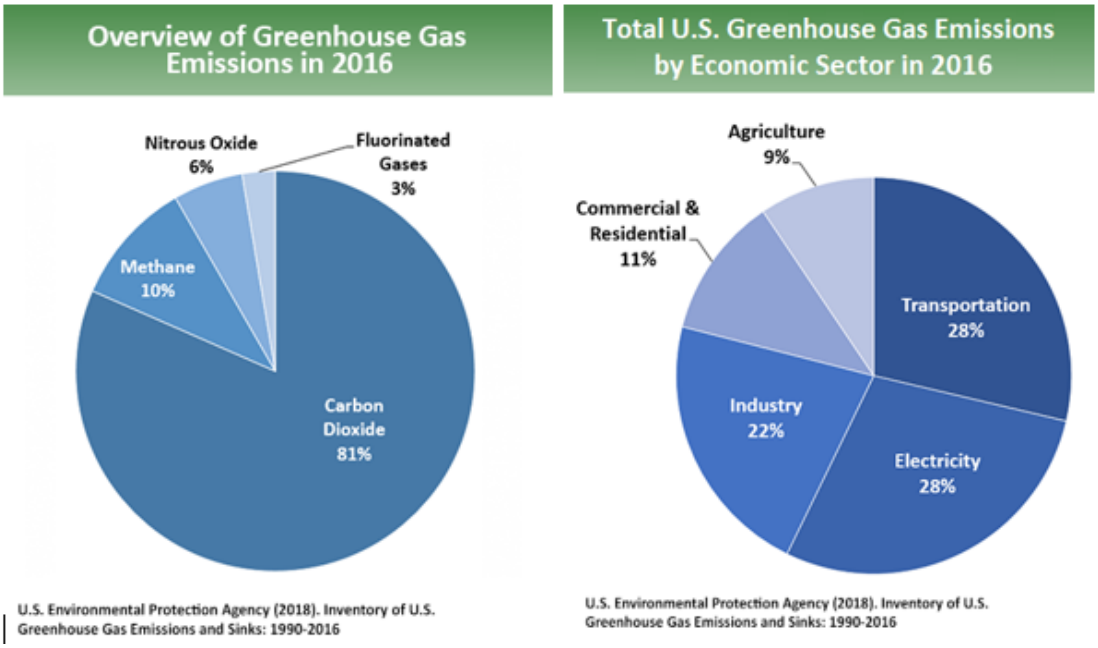
documenting greenhouse gas emissions nationwide, and the Air Resources Board does so for the state, as required by Health and Safety Code Section 39607.4.

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 6 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. emissions. See Figure 3-1 U.S. 2016 Greenhouse Gas Emissions.

Figure 3-1 U.S. 2016 Greenhouse Gas Emissions



U.S. Environmental Protection Agency (2018). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016

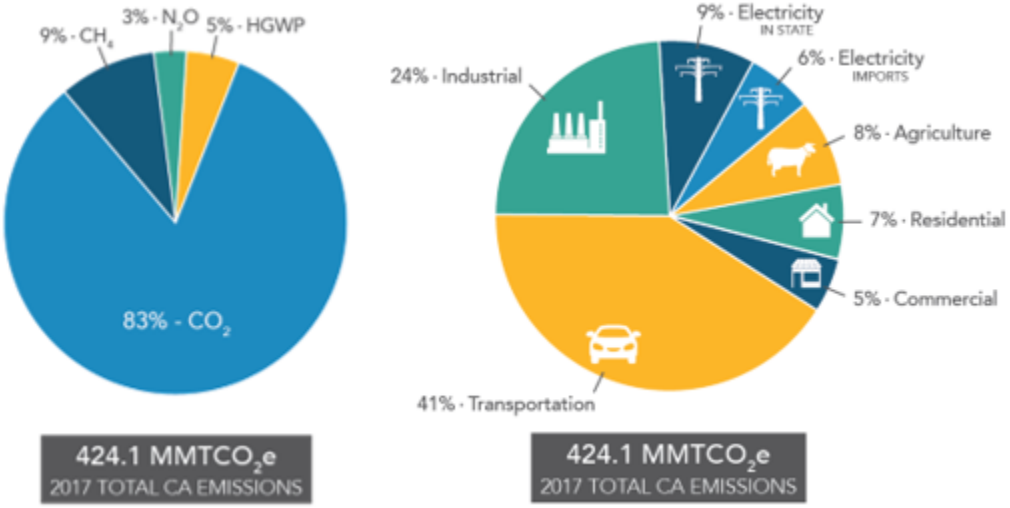
U.S. Environmental Protection Agency (2018). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016

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

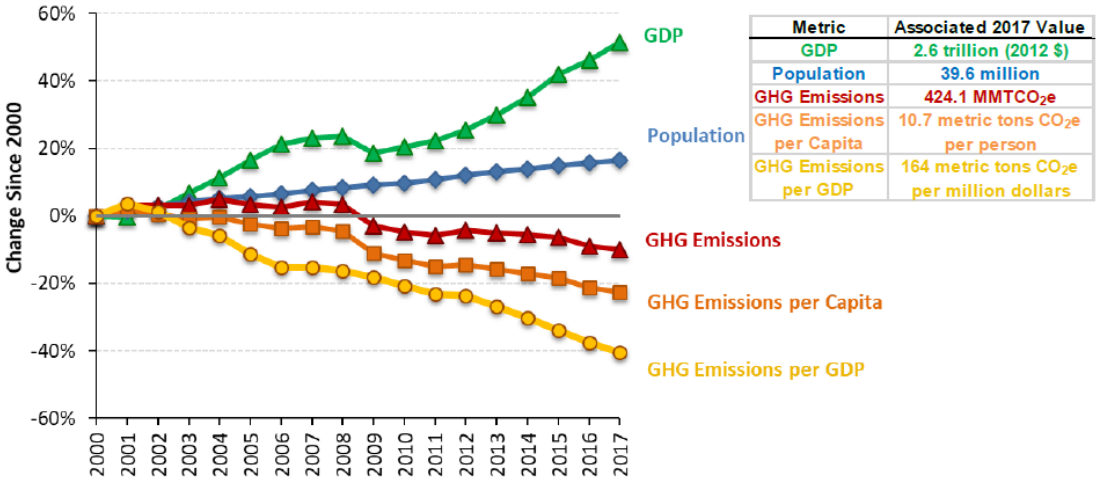
major annual changes and trends to demonstrate the state's progress in meeting its greenhouse gas reduction goals. The 2019 edition of the greenhouse gas emissions inventory found total California emissions of 424.1 million metric tons of carbon dioxide equivalent for 2017, with the transportation sector 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 (Air Resources Board 2019a). See Figure 3-2 California 2016 Greenhouse Gas Emissions and Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000.

Figure 3-2 California 2017 Greenhouse Gas Emissions



Source: Air Resources Board (ARB 2019b)

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



Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every five years. The California Air Resources Board adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in Executive Order B-30-15 and Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California 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 Strategies 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 Fresno Council of Governments Regional Transportation Plan/Sustainable Community Strategies 2018–2042. The regional reduction target for the Fresno Council of Governments is 5 percent per capita by 2020, 10 percent by 2035, and 12 percent by 2042 using an Alternative Planning Strategies.

The proposed project is included in the 2018 Regional Transportation Plan/Sustainable Communities Strategies and consistent with the Greenhouse Gas Reduction Plan through reduction in emissions with intersection operational improvements that include traffic signal synchronization. See Table 3-1 Regional and Local Greenhouse Gas Reduction Plan to see a list of the proposed investments in the Revenue Constrained Transportation Network in the 2018 Regional Transportation Plan/Sustainable Communities Strategies plan.

In addition to greenhouse gas reduction policies and strategies implemented by the Fresno Council of Governments shown in Table 3-1, various other local efforts (not listed in the table) by other agencies are underway to implement vehicle technology in Fresno County, such as electric vehicles and charging stations.

Table 3-1 Regional and Local Greenhouse Gas Reduction Plan

Agency/Plan	Greenhouse Gas Reduction Policies or Strategies
Fresno Council of Governments 2014 Regional Transportation Plan/Sustainable Communities Strategies for Fresno County (adopted June 2018), as amended	To accelerate alternative fuel vehicles as well as fueling and recharging station development. Invest in public transit as well as facilities that encourage walking and bicycling. Make local streets and roads investments to function more efficiently, including access to regional airports, goods movement projects, Transportation Demand Measures, and Transportation System Measure. Proposed investments in the Revenue Constrained Transportation Network in the 2018 Regional Transportation Plan/Sustainable Communities Strategies include: 400 percent increase in Active Transportation Projects, Measure C's Carpool Incentive program provides commuter incentives for sharing rides to work or school, Measure C's Commuter and Agricultural Worker Vanpool Subsidy programs provide funding to new and existing commuter vanpools, CalVans, a Joint Powers Public Transportation Agency—comprising local transportation planning agencies and operating a multi-county vanpool program, Intersection operational improvements, including traffic signal synchronization, Geometric changes and bottleneck alleviation, Arterial access management, Traffic/freeway management system.
Fresno Council of Governments Fresno County Regional Transportation Network Vulnerability Assessment Draft Adaptation Strategies Summary Memorandum (2020)	Plant shade trees along street and sidewalk to ensure bicyclist and pedestrian comfort/health and safety during high heat events. Install tree wells, bioswales, and rain gardens to mitigate flash flooding and re-direct surface runoff. Increase gutter/drainage capacity based on future projections to accommodate heavy precipitation.

3.3.3 Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the State Highway System and those produced during construction. The main greenhouse gases produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. In addition, a small amount of hydrofluorocarbon emissions is included in the transportation sector.

The California Environmental Quality Act Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Public Resources Code, Section 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation versus San Diego Association of Governments (2017) 3 California 5th 497, 512.) In assessing cumulative impacts, it must be determined if a project's incremental effect is

"cumulatively considerable" (The California Environmental Quality Act Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. 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.

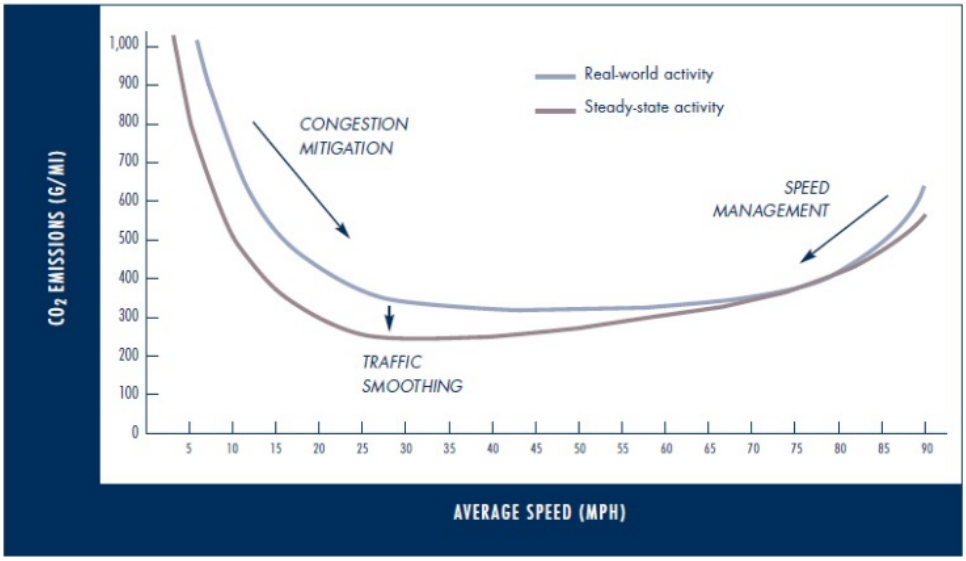
Operational Emissions

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 (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 3-4). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

Four main strategies can reduce greenhouse gas emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower greenhouse gas-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently. Figure 3-4 shows how these efficiencies work together to reduce carbon dioxide emissions.

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



Source: Barth and Boriboonsomsin 2010

Carbon dioxide emissions for the project were analyzed using EMFAC 2017, which is the model Caltrans uses to predict carbon dioxide emissions for projects. The emissions results from the model are summarized in Table 3-2.

Quantitative Analysis

An Air Quality Report prepared in January 2021 for the project includes a quantitative analysis of potential carbon dioxide emissions from the project using the Caltrans CT-EMFAC 2017 modeling tool to determine tons-per-year for each of the alternatives proposed at each interchange. The analysis uses direct input from a June 2020 Traffic Operations Report along with additional traffic data prepared by the Caltrans District 6 Traffic Operations and Planning units to assess the potential impacts from the project. The results are shown in Table 3-2 EMFAC Modelled Carbon Dioxide Emissions for American Avenue and Table 3-3 EMFAC Modelled Carbon Dioxide Emissions for North Avenue. The tables show emissions for the 2019 Existing Year and predicted future emissions for 2026 Opening Year and 2046 Planning Horizon Year.

American Avenue

Modeling results show that for each of the two build alternatives at the American Avenue interchange, there is an increase of emissions from 2019 to 2046, and that there is no difference in emissions when comparing Alternative 1 and Alternative 2. The model shows that emissions from the build alternatives are higher than the 2019 Existing/Baseline emissions, and they are higher than the 2046 No-Build Alternative, which portrays the year 2046 with no project.

The modeling results for the American Avenue interchange show that for the 2019 Existing/Baseline Year, carbon dioxide emissions are approximately 4,709 tons per year.

The projected 2026 No-Build emissions are 5,694 tons per year, which is 985 tons per year more than the 2019 Existing/Baseline emissions. For Alternatives 1 and 2 at American Avenue, the 2026 emissions are 7,258 tons per year, which is 2,549 tons more than the 2019 Existing/Baseline emissions if the project is constructed.

The projected 2046 No-Build emissions are 5,254 tons per year, which is 545 tons more than the Existing/Baseline emissions. For Alternatives 1 and 2, 2046 emissions are 8,123 tons per year, which is 3,414 tons more carbon dioxide emissions than the Existing/Baseline emissions.

Table 3-2 EMFAC Modeled CO_2 Emissions for American Avenue

American Avenue Interchange	Emissions (U.S. Tons per Year)
2019 Existing	4,709
2026 No-Build	5,694
2026 Alternatives 1 and 2	7,258
2046 No-Build	5,254
2046 Alternatives 1 and 2	8,123

North Avenue

Modeling results show that for each of the two build alternatives at the North Avenue interchange, there is an increase of emissions from 2019 to 2046, and that there is no difference in emissions when comparing Alternative 2 and Alternative 4. The model shows that emissions from the build alternatives are higher than the 2019 Existing/Baseline emissions, and they are higher than the 2046 No-Build Alternative, which portrays the year 2046 with no project.

The modeling results for the North Avenue interchange show that for the 2019 Existing/Baseline Year carbon dioxide emissions are 5,606 tons per year.

The projected 2026 No-Build emissions are 6,890 tons per year. This is 1,284 tons per year more than the 2019 Existing/Baseline emissions. For the North Avenue build Alternatives 2 and 4, the 2026 emissions are 8,912 tons per year, which is 3,306 tons more than the Existing/Baseline emissions.

The projected 2046 No-Build emissions are 7,727 tons per year, which is 2,121 tons more than the Existing/Baseline carbon dioxide emissions. For the North Avenue build Alternatives 2 and 4, 2046 emissions are 9,887 tons per year, which is 4,281 tons more than the Existing/Baseline emissions.

Table 3-3 EMFAC Modeled CO_2 Emissions for North Avenue

North Avenue Interchange	Emissions (U.S. Tons per Year)
2019 Existing	5,606
2026 No-Build	6,890
2026 Alternatives 2 and 4	8,912
2046 No-Build	7,727
2046 Alternatives 2 and 4	9,887

Traffic operations would improve at the interchanges. Additional traffic already in the area is expected to use the interchanges instead of driving on local streets to and from destinations in the project area. The increased emissions at the interchanges are considered to be mostly from a redistribution of traffic. The adjacent interchanges of Central Avenue and Chestnut Avenue would see a decrease in traffic due to the improvements, and so would local roads and intersections near the highway in the project area. With removal of the Cedar Avenue on- and off-ramps, traffic that would have used the Cedar ramps would be redirected to the North Avenue interchange. Also, traffic volume would increase along with emissions from population growth and implementation of local planned development through time. The EMFAC Model method to estimate emissions is limited and does not consider traffic emissions from traffic on the local streets or at the other interchanges in the project vicinity.

While CT-EMFAC has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its greenhouse gas emission rates are based on tailpipe emission test data. [This analysis does not currently account for the effects of the U.S. National Highway Traffic Safety Administration and Environmental Protection Agency SAFE (Safer Affordable Fuel-Efficient) Vehicles Rule. Part One revoking California's authority to set its own greenhouse gas emissions standards was published on September 27, 2019 and effective November 26, 2019. The SAFE Vehicles Rule Part 2 would amend existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026. The proposal would retain the model year 2020 standards for both programs through model year 2026. Although the California Air Resources Board has not yet provided adjustment factors for greenhouse gas emissions to be used in light of the SAFE Rule, modeling these estimates with EMFAC2017 or CT-EMFAC2017 remains the most precise means of estimating future greenhouse gas emissions.] Moreover, the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. Greenhouse gas emissions quantified using CT-EMFAC are therefore estimates and may not reflect actual physical emissions. Though CT-EMFAC is currently the best available tool for calculating greenhouse gas 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 would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction greenhouse gas emissions for the project were calculated using the Department of Transportation's Construction Emissions Tool (CALCET v1.1). Project construction is expected to generate approximately 2,450 tons of CO2 during the 440 working days (less than 264 working days per 1 year) duration.

All construction contracts include Caltrans Standard Specifications Sections 7-1.02A and 7 1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all 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 analysis found carbon dioxide emissions would increase by 3,414 tons per year at the American Avenue interchange and by 4,281 tons per year at the North Avenue interchange by 2046 with construction of the project as compared to the existing (2019) carbon dioxide emissions.

The increase in emissions would mainly come from population growth in the county along with the implementation of planned development in the area. Improvement of the existing partial interchanges at American and North avenues would provide more direct access and redistribute future traffic that would otherwise use circuitous routes on local roads and adjacent interchanges traveling to and from the project area. The carbon dioxide modeling does not include the benefits gained from the improved efficiencies on the local road system from the project.

The emerging requirements to model and measure mitigation to reduce greenhouse gas emissions are narrowly defined and limited. Requirements limit projects to zero increase from existing emissions to meet California's emissions reduction goals. The modeling results focus on the State highway only and don't consider the local street system. There are no regulatory or industry-wide established methods to accurately measure whether the project features and measures would reduce emissions enough to mitigate the project impacts.

By all regulatory standards, as reported in section 2.2.3 Air Quality of this document, this project is in compliance with all regulatory requirements for regional air-quality conformity, caron monoxide (CO), ozone (O3), particulate matter 2.5 and 10, mobile source air toxics (MSATS), emissions during construction, and for reporting carbon dioxide.

Caltrans and regional partner agencies have determined the project is needed. The improvements to local roads and construction of complete interchanges would reduce stop-and-go traffic and provide more direct access to and from the highway. It would reduce the traffic driving in-direct routes on local roads to destinations. As air studies have documented, the highest vehicle emissions occur in stop-and-go traffic, while free-flowing traffic produces the least amount of vehicle emissions, regardless of the criteria pollutant.

The project does include features and measures that reduce greenhouse gas emissions, such as: Complete Streets elements with landscaping to promote bicycle and pedestrian use and encourage active transportation over use of vehicles. The installation of Intelligent Transportation System elements designed to improve traffic efficiency and reduce congestion on roadways thereby lowering vehicle emissions. Also, roundabouts proposed under several alternatives contribute to smoother, more efficient traffic circulation resulting in less stop-and-go travel and lower vehicle emissions. Caltrans applies a large list of standard measures on most, if not all, projects during construction that require practices and restrict equipment that reduces dust and equipment emissions. The project also proposes an electric charging station toward mitigation of the potential impacts. The charging station would contribute to emerging local, regional, and state programs to promote electric vehicle use instead of gasoline powered vehicles.

The project increases greenhouse gas and therefore conflicts with current air quality plans that require reduction of greenhouse gas emissions. Without established regulatory, industry-wide methods to accurately measure whether the project features and measures would reduce emissions enough to mitigate the project impacts, Caltrans must therefore determine that the project impacts for increased greenhouse gas emissions are significant and unavoidable.

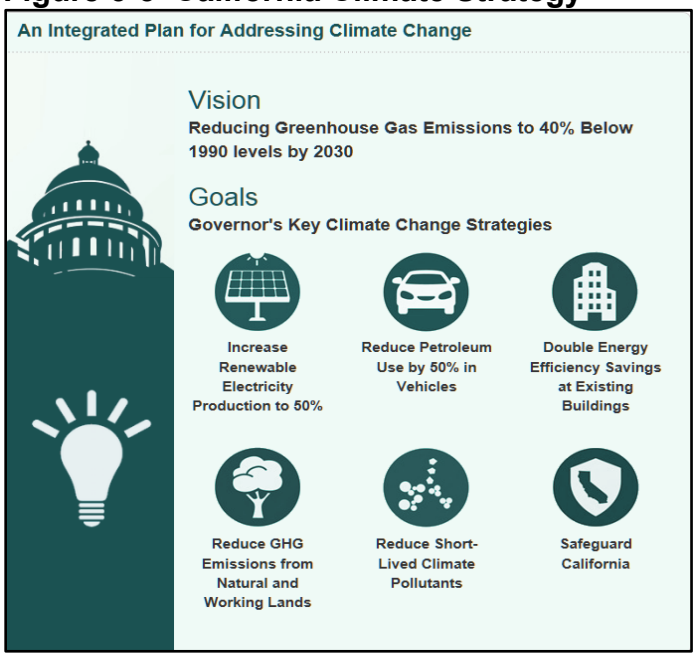
Caltrans is committed to implementing measures to help reduce greenhouse gas emissions. Project features and construction greenhouse gas reduction measures and strategies incorporated into this project to reduce greenhouse gas emissions and potential climate change impacts are outlined in the following sections.

3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, would need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. Former Governor Edmund G. Brown Jr promoted 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 coming 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, the California Transportation Plan 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce greenhouse gas emissions, among other goals. Specific performance targets in the plan that will help to reduce greenhouse gas emissions include:

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

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategies; contribute to the State's reduction targets and advance transportation-related 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 Caltrans 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 emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

The following would be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project:

- One Level 2, Electric Vehicle charging station would be installed within Fresno County.
- Caltrans Standard Specification 14.9.02 Air Pollution Control shall be followed by the contractor. The specification requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions also help reduce greenhouse gas emissions.
- The project will include the following Complete Street features: sidewalks, crosswalks, signalization, and wider shoulders. These features will safely accommodate bicycles, support use of non-motorized modes of travel, and fill gaps in the local Active Transportation Network described in the City of Fresno 2014 Active Transportation Plan.

- Any landscaping removed by the project will be replaced following construction of the project according to specifications described in 2.1.5 Visual/Aesthetics section of this document. Landscaping including trees and other vegetation provide shade and absorb carbon dioxide, a greenhouse gas, from the atmosphere.
- The project will replace and install new Intelligent Transportation System elements. These are as follows: update existing traffic signals and install traffic monitoring stations, ramp meters, and closed-circuit televisions. Information from these systems feed back into Caltrans' QuickMap mobile web-based travel alert system. QuickMap provides travelers with real-time road information thereby giving them opportunities to make informed decisions to improve travel conditions. Intelligent Transportation System (ITS) elements improve operational efficiency and reduce congestion-related greenhouse gas emissions.
- Idling will be limited to 5 minutes for delivery and dump trucks and other diesel-powered equipment during construction.
- The contractor will be responsible for submitting a Solid Waste Disposal and Recycling Report per Caltrans Standard Specification 14-10.02 so the recycling efforts can be monitored. Reducing construction waste and maximizing the use of recycled materials reduces consumption of raw materials, reduces landfill waste, and encourages cost savings.
- Non-Potable water will be used during construction. A potential source for the contractor will be the City of Fresno Recycled Water system that is currently being developed. There are plans to extend the system to the North Avenue Interchange. Alternatively, the contractor may secure non—potable water from another water purveyor such as the Fresno Irrigation District which operates a canal just outside the project limits. Additionally, the landscape irrigation system at North Avenue will be designed to use the City of Fresno Recycled Water system. If the City's system has not been extended to the North Avenue Interchange at time of construction, then the irrigation system will be connected to potable water with the provision that it can be switched to non-potable water in the future.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- Alternative bridge construction (ABC) will be used where possible to reduce construction windows. Use of more precast elements reduces the need for additional falsework, forms, bracing, etc, and reduces the overall duration of construction and greenhouse gas emissions.
- Where lighting is required, higher efficiency LED lights will be used. Reducing the need for electric lighting by using ultra-reflective sign materials and other alternate lighting reduces energy use and therefore reduces greenhouse gas emissions.

- A construction traffic management plan will be implemented. 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.

3.3.5 Adaptation

Reducing greenhouse gas emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and 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 National Environmental Policy Act assignment, Caltrans is obligated to comply with all applicable federal environmental laws and Federal Highway Administration National Environmental Policy Act regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every four years, in accordance with the Global Change Research Act of 1990 (15 U.S. Code Chapter 56A Section 2921 et seq.). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (U.S. Global Change Research Program 2018).

The U.S. Department of Transportation Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation

to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of 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 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 (SLR) projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California—An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This order recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of Executive Order B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017 to encourage a uniform and systematic approach. 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 produced climate change vulnerability assessments that 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.

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. 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 reduce the costs of storm damage and provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

The 2018 Regional Transportation Plan/Sustainable Communities Strategies includes consideration of future climate conditions. Caltrans District 6 has prepared a Climate Change Vulnerability Assessment 2018 and created an online mapping program to provide information for users across the state, using data assembled for the project area. The Caltrans Climate Change Vulnerability Assessment Map can be accessed via the vulnerability assessment web page at: http://www.dot.ca.gov/transplanning/ocp/vulnerability-assessment.html.

The project area may be subject to climate change effects from climate stressors such as rain causing flooding, drought lowering the water table and causing ground subsidence and compaction, increased temperatures, and wildfires. A review of the project area on the vulnerability map shows flooding in the valley could affect the project area, as could rising temperatures, compaction and subsidence, which would undermine the roadway and cause cracking of State Route 99 in the project area.

Caltrans District 6's portion of the State Highway System serves critical functions for the movement of agriculture and other goods. Given the importance of this system, understanding the potential impacts of climate

change and extreme weather on system performance is a key step in creating a resilient highway system.

In District 6, adaptive responses would be needed to address the wildfire, precipitation, and increased temperature effects that are expected to occur. These strategies may include the following:

- Increasing drainage structures and capacity in areas where wildfires are projected to occur and installing slope stabilization strategies outside of the roadway right-of-way where landslides are an additional concern.
- Increasing culvert size or installing new, larger culverts where there are anticipated increases in precipitation and flows. Bridges may need to accommodate larger river flows and increased scour.
- Extending pavement life by installing pavement that retains its strength and quality when exposed to higher temperature conditions.
- Ensuring the project is in conformance with all local planning assessments.

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

A Location Hydraulic Study and Floodplain Evaluation Summary Report (November 2018) was prepared for the project. Flood Insurance Rate Maps (FIRM) dated February 18, 2009 indicate the location of the project area as being in “Zone X.” “Zone X” is defined as areas determined to be outside of the 0.2 percent (1-in-500) annual chance floodplain. The Location Hydraulic Study determined the project location was at low risk of flooding.

The Caltrans District 6 Climate Change Vulnerability Map of projected change in 100-year storm precipitation depth shows that the project area is likely to experience a less than 5 percent increase in storm precipitation depth for the years 2025 and beyond. The project would install an upgraded stormwater system. Considering the location in a low flood-risk area and the relatively small projected increase in storm precipitation through 2085, the project is expected to be resilient to changes in precipitation under climate change scenarios.

Wildfire

The project is in a large valley, mostly surrounded by urban development, with some land irrigated and planted with orchard trees. On the Caltrans District 6 Climate Change Vulnerability Map, the project is not considered to be in an area identified as vulnerable to wildfires. Caltrans 2018 revised Standard Specification 7-1.02M(2) will be implemented; this specification

mandates fire prevention procedures during construction, including a fire prevention plan.

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Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements.

Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, and Project Development Team meetings. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

According to California Environmental Quality Act guidelines, a Notice of Preparation (known by the acronym NOP) was distributed by certified mail to 83 potentially interested property owners, agencies and organizations beginning March 4, 2019. The Notice of Preparation included a description of the project and project area with a map of the area and a copy of the public notice posted for the Public Scoping/Information Meeting held on March 20, 2019. A copy was sent to the State Clearinghouse and Planning Unit of the State of California Governor's Office of Planning and Research; that unit distributed the Notice of Preparation to a separate list of agencies as checked in its returned form. The State Clearinghouse date-stamped its copy of the Notice of Preparation on March 21, 2019.

See Chapter 6 Distribution List of the agencies and organizations who were sent copies of the Notice of Preparation. See a copy of the original Notice of Preparation in Appendix D of this document.

In response to the California Environmental Quality Act scoping information distributed in March 2019, Caltrans received nine letters about the project from the following parties:

- Balderas Elementary School
- Fresno Community Medical Center
- California Rural Legal Assistance, Inc.
- California Native American Heritage Commission
- California Department of Toxic Substances Control
- Fresno Fire Department
- San Joaquin Valley Air Pollution Control District

- U.S. Environmental Protection Agency
- California Highway Patrol

In addition, a Public Information/Scoping Meeting was held on March 20, 2019 at the Robert J. Arriago Community Center located in Malaga which is about 1.5 miles east of the North Avenue interchange.

A public notice was posted in English and Spanish in local newspapers and on the Caltrans webpage. The Notice of Preparation that went to 83 parties included a copy of the public notice announcing the meeting. Prior to the meeting, Caltrans staff also hand-delivered copies to local businesses in the project area and residents of the Flamingo Mobile Home Park.

The purpose of the meeting was to provide information on the preliminary project alternatives being considered and to get feedback from attendees. Ten alternatives were proposed at that time. Displays and information stations explained the project goals, timeline, and environmental studies required. Displays by the local funding agency were also on view. A table where attendees could provide written comments was provided, and a court reporter was present to record spoken comments. Two interpreters were present to help anyone needing translations in Spanish or Hmong.

Caltrans received five written and six spoken comments from those who attended the meeting; the comments are summarized below:

- Relocation of business—Two comments received in writing at the meeting opposed the four build alternatives proposed at Central Avenue that could potentially affect their businesses negatively.
- Requested to be added to the mailing list—Three comments requested to receive further notification about the project.
- Increased traffic—One commenter had concerns that the project would increase traffic in their area.
- Property tax—One commenter asked if the project would affect property taxes.
- Hard copy of preliminary alternatives—One commenter requested a printed copy of the proposed alternatives.
- Congestion at Central Avenue—A comment mentioned the heavy traffic from the Amazon and Ulta businesses.
- Roundabouts not compatible for trucks—One commenter stated the proposed roundabout alternative at Central Avenue would not be compatible for trucks.
- Widening Central Avenue—One comment wanted Caltrans to widen Central Avenue and leave the on- and off-ramps alone.

Note: The alternatives proposed at Central Avenue were subsequently removed from the project due to funding issues. Most of the comments received at the meeting were concerning the alternatives proposed at Central Avenue.

The following text describes some of the agencies and community members Caltrans coordinated with through face-to-face meetings, phone calls, and email to research and gather information about the project area and to share information about the project.

Fresno Council of Governments—Responsibility for regional transportation planning is performed by the Fresno Council of Governments (Fresno COG). The Fresno Council of Governments is a policy board composed of 15 members representing the incorporated cities within Fresno County and the chairman of the Fresno County Board of Supervisors.

The Fresno Council of Governments plays a major role in building regional consensus among the region's transit systems. State and federal laws as well as local tax measures have given the Fresno Council of Governments an important role in financing numerous transportation improvements. The Fresno Council of Governments coordinates the countywide sales tax measure, Measure C, which was passed in 1986 and extended for an additional 20 years by the voters in 2006. The Fresno Council of Governments also conducts transportation planning, delivers projects, and manages various transportation programs.

The agency is responsible for overseeing the implementation of Measure C is the Fresno County Transportation Authority (FCTA). A citizen oversight committee is responsible for ensuring Measure C funding program revenues and expenditures are spent as mandated by the Fresno County Transportation Authority. Cooperative Agreements with the FCTA may be necessary regarding Measure C funding.

Representatives from the Fresno COG did attend the Caltrans Public Scoping/Information Meeting held on March 20, 2019 with a booth to present information about transportation planning in the region.

Fresno County Department of Public Works and Planning—The Department of Public Works and Planning is responsible for a wide range of services provided to county residents. Its main responsibilities include road maintenance, building permitting, parks and recreation, tourism, recycling, code enforcement, land use development, and community development.

Representatives from the Department of Public Works and Planning have coordinated with Caltrans to plan this project. Department staff participates on the Project Development Team, which is a multi-disciplinary team of managers, engineers, and planners established to problem solve and gather

information. Department staff are liaisons, working on behalf of the interests of the County for this project. The County has focused mostly on decisions made for the improvements at the American Avenue interchange.

Representatives from the Fresno County Department of Public Works and Planning attended the Caltrans Public Scoping/Information Meeting held on March 20, 2019 with a booth to present information about planning in the region and to answer questions about the project.

Cooperative agreements with the County would be necessary. A superseding freeway agreement would likely be required between Caltrans and the County of Fresno to address the modified connection to State Route 99. Maintenance agreements would likely be needed. A relinquishment agreement would be needed for the right-of-way of the removed ramps at Cedar Avenue.

City of Fresno Public Works Department—The Public Works Department is responsible for the design, construction and maintenance of streets, sidewalks, traffic signals, streetlights, trails, public buildings, street trees and landscaping throughout the city.

Staff from the Public Works Department have coordinated with Caltrans to plan this project. Department staff participate on the multi-disciplinary team to problem solve and gather information. They are liaisons working on behalf of the interests of the City for this project. The City has focused mostly on decisions made for the improvements at the North Avenue interchange.

Representatives from the City of Fresno Public Works Department attended the Caltrans Public Scoping/Information Meeting held on March 20, 2019 with a booth to present information about planning in the region and to answer questions about the project.

Cooperative agreements with the city would be necessary. A superseding freeway agreement would likely be required between Caltrans and the City of Fresno to address the modified connection to State Route 99. Maintenance agreements would likely be needed.

Tribal Governments—Ten Native American groups and the Native American Heritage Commission were contacted for the project. None of the Native American groups showed an interest in participating in consultation for the project.

Native American consultation was initiated on July 20, 2018 with a letter sent to the Native American Heritage Commission requesting a search of the commission’s 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.

The Native American Heritage Commission responded to Caltrans on July 31, 2018, stating that its sacred land files found no Native American cultural resources in the immediate project area. The Native American Heritage Commission provided a list of contacts who could be interested in the project as well as recommendations for further tribal consultation. See Chapter 6 for a listing of the tribes contacted.

The Native American contacts were also sent copies of the Notice of Preparation, which included a copy of the public notice of the Public Scoping/Information Meeting held on March 20, 2019. No contacts signed the meeting sign-in sheet or submitted comments regarding the project.

Natural Resources Conservation Service—The Natural Resources Conservation Service (NRCS) generally administers conservation programs to reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. The service also provides funding opportunities and services for agricultural producers and other landowners.

The Natural Resources Conservation Service maintains a soil survey, for which Caltrans coordinates with the Service to assess soils and complete Farmland Conversion Rating forms (NRCS-CPA-106) for projects to assess impacts to farmland.

Malaga County Water District and **Robert J. Arriago Community Center**—The Malaga County Water District is a California Special District-Public Agency in Fresno County just south of the City of Fresno. The district covers an area of about 2.5 square miles and includes the community of Malaga. The office and separate community park with recreation center are about 1.5 miles by vehicle east of the North Avenue interchange. The district originally organized to deliver water and manage wastewater, but through time has evolved as a public entity to manage a wide variety of services for the community, including responsibility for water treatment, distribution and waste collection as well as operating and managing a Park and Recreation Center and Senior Citizen's Center.

Caltrans coordinated with the district office and the community center to plan the public scoping meeting and to post the public notice of the meeting held on March 20, 2019. Staff members at both locations were interviewed on several occasions for information about the community of Malaga and the history of the development of the district to gather information for the community impacts studies conducted for the project during 2019 and 2020.

San Joaquin Valley Air District—The San Joaquin Valley Air District is a public health agency whose mission is to improve the health and quality of life for all valley residents through efficient, effective and entrepreneurial air quality management strategies. Its core values have been designed to ensure that its mission is accomplished through commonsense, feasible measures that are based on sound science. The San Joaquin Valley Air District is responsible for administering air quality standards for the San Joaquin Valley Air Basin.

A representative from the San Joaquin Valley Air District attended the Caltrans Public Scoping/Information Meeting held on March 20, 2019 with a booth to provide information about the district's programs and what is available to help reduce toxic air quality emissions.

On July 10, 2019, Caltrans staff attended a San Joaquin Valley Air District meeting featuring the South-Central Fresno Community Steering Committee. The regular meeting was being held twice a month with subject experts, such as Caltrans, to inform the committee on different topics as committee members developed Community Emissions Reduction Programs. The committee was made up of community members tasked with adopting Community Emissions Reduction Programs per Assembly Bill 617. Under Assembly Bill 617, the district's role includes the development and adoption of a Community Emission Reduction Plan for each selected community, in consultation with the California Air Resources Board and residents and local governmental bodies in affected communities. The Community Emissions Reduction Programs would, at a minimum, itemize clean air projects and identify funding for those projects, including investments in replacements of fireplaces, trucks, automobiles, and other polluting equipment, and vehicles with cleaner equipment. Significant funding has recently been made available for investment in community-level clean air projects, and Community Emissions Reduction Programs, developed in consultation with the community steering committees, identify where those funds will be spent.

Flamingo Mobile Home Park—The mobile home park sits in the southwest quadrant of the interchange at State Route 99 and Central Avenue. Prior to removal of the proposed alternatives at Central Avenue and Chestnut Avenue from the project (October 2019), outreach was conducted on several occasions to learn about the mobile home park and the community members, to invite them to the Caltrans Public Scoping/Information Meeting held on March 20, 2019 and to assess potential impacts from the proposed alternatives at Central Avenue.

Fresno County Juvenile Justice Campus—The Juvenile Justice Campus is a detention facility to hold minors who have committed a law violation while they are being processed through the Juvenile Court facilities at the campus.

Caltrans has coordinated with the County regarding the improvements proposed at the property and intersection where the campus sits. A noise specialist contacted the campus to investigate whether noise levels would need to be taken for the noise study. None were required based on the information gathered. The campus was also sent a copy of the Notice of Preparation for the project and the public notice inviting its representatives to the Public Scoping/Information Meeting held on March 20, 2019.

Chapter 5 List of Preparers

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

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 18 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Conducted noise studies and preparation of the Noise Study Report.

Larry E. Bonner, Senior Environmental Planner. B.S., Natural Resources Management, California Polytechnic State University, San Luis Obispo; 21 years of environmental planning and biological studies experience. Contribution: Division of Environmental Analysis Coordinator and advised on environmental document type and other key decisions.

Jon L. Brady, Associate Environmental Planner. M.A., History, California State University, Fresno; B.A., Political Science and Anthropology; 41 years of experience in environmental planning (archaeology and architectural history). Contribution: Historic Property Survey Reports, Historic Resource Evaluation Reports, Findings of Effects documents.

Ezekiel Currier, Environmental Planner (Natural Sciences). B.S., Biology (Ecology and Biodiversity), Humboldt State University, Arcata; 7 years of botany and biology experience. Contribution: Preparation of the Natural Environment Study.

David Ewing, Staff Services Manager I. B.A., Graphic Design, Minor in Business Administration, California State University, Fresno; more than 20 years of graphic design, transportation graphics, and public participation experience. Contribution: Preparation of maps and diagrams for this document, and materials such as public notices and information boards for public meetings.

David Gould, Environmental Planner. B.S., Environmental Management and Protection, Minor in Geospatial Analysis, Humboldt State University, Arcata; 2 years of environmental planning experience. Contribution: Data collection for community studies.

Susan Greenwood, Engineering Geologist. B.S., Environmental Health Science, California State University, Fresno; more than 20 years of environmental health, hazardous waste, and hazardous material management experience. Contribution: Conducted oversight of studies, prepared the Initial Site Assessment and oversight of Preliminary Site Assessments for properties.

Nathaniel Heilmann, Associate Environmental Planner (Air Quality Coordinator). B.S., Geology, Utah State University; 6 years of air quality analysis and 5 years of combined geological/environmental hazards experience. Contribution: Conducted architecural history studies and prepared the Historic Resources Evaluation Report and Historic Property Survey Report.

Maya Hildebrand, Associate Environmental Planner (Air Quality Coordinator). B.S., Geology, Utah State University; 6 years of air quality analysis and 5 years of combined geological/environmental hazards experience. Contribution: Performed air quality analysis and prepared the Air Quality Report.

David Johnson, Senior Environmental Planner (Natural Sciences). M.S., Public Administration, Central Michigan University; B.S., Environmental Science and Biology, Central Michigan University; 8 years of combined experience in environmental and biological studies. Contribution: Management of biological studies and preparation of the Natural Environment Study-Minimal Impact.

Wendy Kronman, Associate Environmental Planner. M.A., Linguistics, California State University, Fresno; Certificate in Horticulture, Merritt College, Oakland; B.A., Anthropology, Sonoma State University; 14 years of environmental planning experience. Contribution: Performed data collection for community studies.

Rogerio Leong, Engineering Geologist. B.S., Geology, University of Sao Paulo, Brazil; 18 years of environmental site assessment and investigation experience. Contribution: Conducted water quality investigation and prepared Water Quality Report.

Mike Leongson, Senior Transportation Engineer. B.S., Civil Engineering, California State University, Fresno; over 15 years of engineering experience with 1 year of environmental technical studies experience. Contribution: Management of hazardous waste studies and preparation of the Initial Site Assessment and Preliminary Site investigations for properties.

Joseph Llanos, Graphic Designer III. B.A., Graphic Design, California State University, Fresno; 21 years of visual design and public participation experience. Contribution: Preparation of maps and diagrams for this document, and materials such as public notices and information boards for public meetings.

Mandy Macias, Associate Environmental Planner (Archaeology). B.A., Anthropology, California State University, Fresno; more than 20 years of California and Great Basin archaeology and cultural resources

management experience. Contribution: Prehistoric Archaeology and Native American consultation.

David Meyers, Audio Visual Specialist. Fine Arts/Music, California State University, Fresno; A.A., Liberal Studies, College of the Sequoias, Visalia; more than 25 years of visual design, public participation, multimedia and fine arts/music experience. Contribution: Preparation of maps and diagrams for this document, and materials such as public notices and information boards for public meetings.

Madeleine Nay, Editorial Specialist. B.S., Counterterrorism and Homeland Security, Southern New Hampshire University; M.S., Cybercrime Investigation and Cybersecurity, Boston University; 4 years of document review, design, and preparation experience. Contribution: Performed document review and technical editing.

G. William “Trais” Norris, III, Senior Environmental Planner. B.S., Urban Regional Planning, California State Polytechnic University, Pomona; 19 years of land use, housing, redevelopment, and environmental planning experience. Document review of the California Environmental Quality Act and the National Environmental Policy Act documents, including Caltrans Web Accessibility for All (CWAA) requirements. Contribution: Performed document review and technical editing.

Tamra Nunes, Associate Environmental Planner (Natural Sciences). B.A., Biology, California State University, Fresno; 24 years of biology experience. Contribution: Performed document review and technical editing.

Kai Pavel, Engineering Geologist. Professional Geologist (P.G.). M.A., Geography, Geology, Heinrich Heine Universitaet Dusseldorf, Germany; 14 years of hazardous waste/materials, water quality, environmental technical studies experience. Contribution: Conducted studies and prepared the Paleontological Identification Report and Paleontological Evaluation Report.

Som Phongsavanh, Associate Environmental Planner. B.S., Biology/Physiology, California State University, Fresno; 18 years of environmental planning experience. Contribution: Management of environmental process.

Ken J. Romero, Senior Transportation Engineer. B.S., Civil Engineering, California State University, Fresno; 14 years of environmental technical studies experience. Contribution: Provided supervision and particiated in decision-making for air quality studies, noise study, and water qualtiy study.

Paul G. Roybal, Transportation Engineer. B.S., Civil Engineering, California State University, Fresno; 6 years of environmental engineering experience. Contribution: Conducted studies and contributed to Water Quality Report.

Travis Samonas, Environmental Planner (Archaeology). M.A., Anthropology, California State University, Northridge; B.A., Anthropology, California State University, Northridge; 7 years of prehistoric and historic archaeological experience in Southern and Central California. Contribution: Conducted archaeological studies and prepared Archaeological Survey Report.

Jane Sellers, Associate Environmental Planner. B.A., Journalism, California State University, Fresno; 20 years of environmental compliance experience, focusing on QA/QC and reviewing and editing NEPA and The California Environmental Quality Act environmental documents, including Caltrans Web Accessibility for All (CWAA) requirements. Contribution: Performed document review and technical editing.

Raychel Skeen, Associate Environmental Planner. B.A., Geography, California State University, Humboldt; more than 20 years of transportation and environmental planning experience. Contribution: Conducted environmental studies and prepared the Environmental Impact Report/Environmental Assessment.

Chelsea Starr, Environmental Planner. B.S., Biology, University of Washington; 2 years of environmental planning experience. Contribution: Performed data collection and economic assessment for community studies.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; more than 30 years of hazardous waste and water quality experience; 18 years of paleontology/geology experience. Contribution: Management of the palentological studies and reports.

Jennifer H. Taylor, Environmental Office Chief. Double Bachelor of Arts in Political Studies and Organizational Sciences, Pitzer College; more than 30 years of experience in environmental and land use planning. Contribution: Oversight review of the environmental document.

John Thomas, Senior Environmental Planner. B.A., Geography, California State University, Fresno; 22 years of environmental planning experience. Contribution: Early coordination and preparing estimates.

Sylvère CM Valentin, Associate Environmental Planner (Archaeology). 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: Conducted archaeology studies for Archaeological Survey Report.

Philip Vallejo, Supervising Environmental Planner/Office Chief. B.A., History, California State University, Fresno; 12 years of experience in architectural history field. Contribution: Management of cultural studies.

Juergen Vespermann, Senior Environmental Planner. Civil Engineering Degree, Fachhochschule Muenster, Germany; more than 30 years of experience in transportation planning/environmental planning. Contribution: Management of environmental process.

Chapter 6 Distribution List

In compliance with the National Environmental Policy Act and the California Environmental Quality Act, the Draft Environmental Impact Report/ Environmental Assessment was distributed to key interested agencies, elected and appointed officials, tribes and tribal communities, as well as to all parties requesting it.

A public notice of availability of the draft environmental document was provided to all parties on the distribution list and posted in local newspapers and on the Caltrans website. Public notifications were sent to the owners of the 40 properties identified as potentially directly impacted by the project, as well as to those individuals who submitted comments on the Notice of Preparation. The names and addresses of individuals are not disclosed here to protect their privacy.

Hard copies of the environmental document and the related technical studies were made available for review at the Caltrans district office at 1352 West Olive Avenue, Fresno, California 93728. An online electronic copy was made available on the following website: https://dot.ca.gov/caltrans-near-me/district-6. Copies of the environmental document were made available upon request.

The Draft Environmental Impact Report/Environmental Assessment was made available to the following parties, broken down by agency or group.

Federal Agencies

- Federal Highway Administration—California Division, 650 Capitol Mall, Suite 4-100, Sacramento, CA 95814-4708
- Office of the Secretary, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250
- U.S. Army Corps of Engineers, Sacramento District, 1325 J Street, Room 1513, Sacramento, CA 95814
- Regional Administrator, U.S. Environmental Protection Agency, Pacific Southwest – Region-9, 75, Hawthorne Street, San Francisco, CA 94105
- State Conservationist, U.S. Department of Agriculture, Natural Resources Conservation Service, 430 G Street #4164, Davis, CA 95616-4164
- Regional Director, Federal Transit Administration, 201 Mission Street, San Francisco, CA 94105-1839

Native American Tribes, Agencies, Communities

- Native American Heritage Commission, Cultural and Environmental Department, 1550 Harbor Boulevard, Suite 100, West Sacramento, CA 93691

- Tribal Chair, Big Sandy Rancheria of Mono Indians, P.O. Box 337, Auberry, CA 93602
- Chair, Cold Springs Rancheria of Mono Indians, P.O. Box 209, Tollhouse, CA 93667
- Chairperson, North Fork Mono Rancheria, P.O. Box 929, North Fork, CA 93643
- Tribal Chair, North Fork Mono Tribe, 13396 Tollhouse Road, Clovis, CA 93619
- Chairwoman, Picayune Rancheria, P.O. Box 2226, Oakhurst, CA 93644
- Chairperson, Eshom Valley Band of Indians/Wuksachi Indian Community, 1179 Rock Haven Court, Salinas, CA 93906
- Chairman, Dumna Wo-Wah Tribal Government, 2191 West Pico Avenue, Fresno, CA 93703
- Chairman, Dunlap Band of Mono Indians, P.O. Box 14, Dunlap, CA 93621
- Table Mountain Rancheria, P.O. Box 410, Dunlap, CA 93621
- Chairman, Traditional Choinumni Tribe, 2415 Houston, Fresno, CA 93720

State Agencies

- District Conservationist, Natural Resources Conservation Service, 4625 West Jennifer Avenue, Suite 109, Fresno, CA 93722-6424
- Director, California Transportation Commission, 1120 N Street, Sacramento, CA 95814
- Director, California Department of Conservation, 801 K Street, MS 24-01, Sacramento, CA 95814
- Commissioner, California Highway Patrol, 601 North 7th Street, Sacramento, CA 95811
- Director, California Department of General Services, 707 Third Street, Sacramento, CA 95605
- Director, California Department of Water Resources, 1416 9th Street, Sacramento, CA 95814
- Director, California Department of Resources Recycling and Recovery, 1001 I Street, P.O. Box 4025, Sacramento, CA 95812-4025
- Director, California Department of Community Services and Development, 2389 Gateway Oaks, Suite 100, Sacramento, CA 95833
- Chairperson, California High-Speed Rail Authority, 770 L Street, Sacramento, CA 95814
- Director, California Department of Housing and Community Development, 2020 West El Camino Avenue, Sacramento, CA 95833

- Secretary, California Department of Food and Agriculture, 1220 N Street, Sacramento, CA 95814
- Director, California Department of Parks and Recreation, 1416 9th Street, Sacramento, CA 95814
- Chairperson, California Office of State Historic Preservation, 1725 23rd Street, Suite 100, Sacramento, CA 95816
- Director, California Department of Public Health, P.O. Box 997377, MS 0500, Sacramento, CA 95899-7377
- Regional Manager, California Department of Fish and Wildlife, 1234 E. Shaw Avenue, Fresno, CA 93710
- Director, California Department of Motor Vehicles, 2415 1st Avenue, Mail Station F101, Sacramento, CA 95814
- Director, California Department of Health Care Services, P.O. Box 997413, MS 0000, Sacramento, CA 95899-7413
- Executive Director, California Public Utilities Commission, 770 L Street, Suite 620, Sacramento, CA 95814
- Director, California Department of Toxic Substances Control, 1001 I Street, P.O. Box 806, Sacramento, CA 95814-2828
- Secretary for Environmental Protection, California Environmental Protection Agency, 1001 I Street, Sacramento, CA 95812-2815
- Director, Cal-FIRE, 1416 9th Street, P.O. Box 944246, Sacramento, CA 94244
- California Regional Water Quality Control Board, 11020 Sun Center Drive, Suite 200, Rancho Cordova, CA 95670
- California High-Speed Rail Authority, 770 L Street, Sacramento, CA 95814

Regional and Local Agencies

- Director, Fresno County Department of Public Works and Planning, 2220 Tulare Street 6th Floor, Fresno, CA 93721
- Director, Fresno County Department of Public Health, 1221 Fulton Street, Third Floor, Fresno, CA 93775
- Director, City of Fresno, Economic Development, 2601 Fresno Street, Room 2075, Fresno, CA 93721
- Director, City of Fresno, Development and Planning, 2600 Fresno Street, Room 3065, Fresno, CA 93721
- Fire Chief, City of Fresno, Fire Department, 911 H Street, Fresno, CA 93761
- Executive Director, Fresno Historical Society, 7160 West Kearney Boulevard, Fresno, CA 93706

- Chairman, Fresno Local Agency Formation Commission, 2607 Fresno Street, Suite B, Fresno, CA 93721
- Board Chair, Calwa Recreation and Park District, 4545 East Church Avenue, Fresno, CA 93725
- President, Malaga County Water District, 3580 South Frank Street, Fresno, CA 93725
- Executive Director/APCO, San Joaquin Air Pollution Control District, 1990 East Gettysburg Avenue, Fresno, CA 93726
- Police Chief, City of Fresno, Police Department, 2323 Mariposa Street, Room 2075, Fresno, CA 93721
- Director, City of Fresno Department of Transportation, 2223 G Street, Fresno, CA 93706
- Executive Director, Fresno County, Fresno Council of Governments, 2035 Tulare Street, Suite 201, Fresno, CA 93721
- General Manager, Fresno County Rural Transit Agency, 2035 Tulare Street, Suite 201, Fresno, CA 93721
- Executive Director, Fresno County Transportation Authority, 2220 Tulare Street, Suite 411, Fresno, CA 93721
- Unit Fire Chief, Fresno County Fire Department, 210 South Academy, Sanger, CA 93657
- Director, City of Fresno, Department of Public Works, 2600 Fresno Street, Room 4016, Fresno, CA 93721
- Director, City of Fresno, Department of Public Utilities, 2600 Fresno Street, Fresno, CA 93721
- Sheriff, Fresno County Sheriff, 2200 Fresno Street, Fresno, CA 93721
- Chairman, Fresno Metropolitan Flood Control District, 5469 East Olive Avenue, Fresno, CA 93727
- Chairman, Selma-Kingsburg-Fowler County Sanitation District, 11301 East Conejo Avenue, Kingsburg, CA 93631
- Division 3 Director, Fresno Irrigation District, 2907 South Maple Avenue, Fresno, CA 93725
- President, Fresno County Superior Court: Juvenile Delinquency Court, 3333 East American Avenue, Building 704, Fresno, CA 93725
- Executive Director, San Joaquin Valley Air Pollution Control District, 1990 East Gettysburg Avenue, Fresno, CA 93726-0244
- Presiding Judge, Fresno County Superior Court, 3333 East American Avenue, Suite A, Fresno, CA 93725

State and Local Elected Officials

- Senator Dianne Feinstein, Fresno Office, 2500 Tulare Street, Suite 4290, Fresno, CA 93721
- Senator Alex Padilla, Fresno Office, 2500 Tulare Street, Suite 5290, Fresno, CA 93721
- Representative D-4, Roseville District Office, 2200A Douglas Boulevard, Suite 240, Roseville, CA 95661
- Representative D-16, Fresno District Office, 855 M Street, Suite 940, Fresno, CA 93721
- Representative D-21, 2117 Selma Street, Selma, CA 93662
- Representative D-22, Clovis District Office, 264 Clovis Avenue, Suite 206, Clovis, CA 93612
- Supervisor, District 1, Fresno County, 2281 Tulare, Room #301, Fresno, CA 93721
- Supervisor, District 2, Fresno County, 2282 Tulare, Room #301, Fresno, CA 93721
- Assemblyman 53 District, Fresno Office, 6245 North Fresno Street, Suite #106, Fresno, CA 93710
- Supervisor, District 3, Fresno County, 2283 Tulare, Room #301, Fresno, CA 93721
- Supervisor, District 4, Fresno County, 2284 Tulare, Room #301, Fresno, CA 93721
- Assemblyman 31 District, Fresno Office, Hugh Burns State Building, 2550 Mariposa Mall, Suite 5031, Fresno, CA 93721
- Supervisor, District 5, Fresno County, 2285 Tulare, Room #301, Fresno, CA 93721
- Mayor, City of Fresno, 2600 Fresno Street, Room 2075, Fresno, CA 93721
- Councilmember, Fresno City Council, District 3, 2600 Fresno Street, Room 2097, Fresno, CA 93721

Nonprofits – Interest Groups

- Director, Kings River Conservation District, 4886 East Jensen Avenue, Fresno, CA 93725
- Chairperson, Community Regional Medical Center, 2823 Fresno Street, Fresno, CA 93721
- CEO, Central California Food Bank, 4010 East Amendola Drive, Fresno, CA 93725

- President, Turning Point of Central California, Inc., 615 South Atwood Street, Visalia, CA 93277
- Director of Public Affairs, Veterans Affairs Medical Center, 2615 East Clinton Avenue, Building 34, Fresno, CA 93703
- Director of Operations, American Relief Foundation/Cars for Breast Cancer Car Donation, 1255 East Central Avenue, Fresno, CA 93725
- Director of Operations, American Ambulance, 2911 East Tulare Street, Fresno, CA 93721
- Center Operations Director, Concentra Urgent Care, 2555 South East Avenue, Fresno, CA 93706
- California Rural Legal Assistance, Inc., 3747 East Shields Avenue, Fresno, CA 93726
- Robert J. Arriago Community Center, 3582 South Winery Avenue, Fresno, CA 93725
- Regional Policy Manager, Leadership Counsel for Justice and Accountability. 2210 San Joaquin St, Fresno, CA 93721

Education

- Board President, Fowler Unified School District, 658 East Adams Avenue, Fowler, CA 93625
- Board President, Fresno Unified School District, 2309 Tulare Street, Fresno, CA 93721
- State Superintendent of Public Instruction, California Department of Education, 1430 N Street, Suite 5602, Sacramento, CA 95814-5901
- Board President, Orange Center School District, 3530 South Cherry Avenue, Fresno, CA 93706
- Board President, Washington Unified School District, 7950 South Elm Avenue, Fresno, CA 93706
- Principal, Malaga Elementary School Facilities/Playground, 3910 South Ward, Fresno, CA 93725
- Fresno County Schools (Alice M. Worsley School, Violet Heintz - Education Academy), 1111 Van Ness Avenue, Fresno, CA 93721
- President, Fresno City College, 1101 East University Avenue, Old Administration Building 259, Fresno, CA 93741
- Principal, Calwa Elementary School, 4303 East Jensen Avenue, Fresno, CA 93725
- Principal, Orange Center Elementary School, 3530 South Cherry Avenue, Fresno, CA 93706

- Principal, West Fresno Elementary/Middle School, 2910 South Ivy Avenue, Fresno, CA 93706
- Vice Principal, Ezekiel Balderas Elementary School, 4625 East Florence Avenue, Fresno, CA 93725
- Principal, Aynesworth Elementary School, 4765 East Burns Avenue, Fresno, CA 93725

Appendix A Title VI Policy Statement

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

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

Making Conservation a California Way of Life.

November 2019

NON-DISCRIMINATION POLICY STATEMENT

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

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

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

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

Toks Omishakin
Director

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

Appendix B Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

DECLARATION OF POLICY

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

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

FAIR HOUSING

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

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance

Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

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

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

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

RESIDENTIAL RELOCATION PAYMENTS

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

Moving Costs

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

Purchase Differential

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

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

Rent Differential

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

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

Down Payment

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

Last Resort Housing

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

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

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

NONRESIDENTIAL RELOCATION ASSISTANCE

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

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

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

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

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

ADDITIONAL INFORMATION

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

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

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from the Department’s Division of Right of Way and Land Surveys. California’s law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Appendix C Farmland Conversion Impact Rating Form NRCS-CPA-106

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 9/25/19	4. Sheet 1 of _____
1. Name of Project **South Fresno Interchange Project**	5. Federal Agency Involved **Caltrans on behalf of FHWA**	
2. Type of Project **Freeway Interchange Rehabilitation**	6. County and State **Fresno County, California**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 9/25/19	2. Person Completing Form **Luis Alvarez**
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 **968,727** Average Farm Size **303ac**
5. Major Crop(s) **Orchards**	6. Farmable Land in Government Jurisdiction Acres: **992,479** % **25.7**	7. Amount of Farmland As Defined in FPPA Acres: **1,514,402** % **39.3**
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 **10/10/19**

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		12.84ac	8.92ac		
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0	0		
C. Total Acres In Corridor		12.84ac	8.92ac		
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland		13	9		
B. Total Acres Statewide And Local Important Farmland		0	0		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.0009	0.0006		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		5.2	5.2		
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)*		94	94		
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	9	9		
2. Perimeter in Nonurban Use	10	5	5		
3. Percent Of Corridor Being Farmed	20	5	1		
4. Protection Provided By State And Local Government	20	20	20		
5. Size of Present Farm Unit Compared To Average	10	5	8		
6. Creation Of Nonfarmable Farmland	25	0	0		
7. Availablility Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	1	1		
9. Effects Of Conversion On Farm Support Services	25	0	0		
10. Compatibility With Existing Agricultural Use	10	0	0		
TOTAL CORRIDOR ASSESSMENT POINTS	160	50	49	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	94	94	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	50	49	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	144	143	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

Appendix D Notice of Preparation

SCH NO. _____

NOTICE OF PREPARATION

To: _____

From: California Dept. of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Project Title: **South Fresno Interchange Project – 06-0H240**

Project Location: **On State Route 99 in the southwest area of the City of Fresno at American Ave, Central Ave, and North Ave in Fresno County, CA.**

Project Description: **The reconfiguration of three existing interchanges to improve traffic flow and operations, increase the capacity of the interchanges, reduce traffic delay, enhance traffic safety and provide compatibility with local planning for the project area.**

This is to inform you that the California Department of Transportation will be the lead agency and will prepare an environmental impact report for the project described below. Your participation as a responsible agency is requested in the preparation and review of this document.

Caltrans needs to know the views of your agency as to the scope and content of the environmental information that 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.

A more detailed project description, location map, and the potential environmental effects are contained in the attached materials. Also, there is a Public Information/Scoping Meeting scheduled to be held on March 20, 2019 to present preliminary options to improve the interchanges. Please see the accompanying Public Notice in this packet.

A copy of the Initial Study 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 direct your response to: **Raychel Skeen, Associate Environmental Planner, Caltrans, Central Region Environmental Division, 855 M Street, Suite 200, Fresno CA 93721;** Telephone: **559-445-6132**. Please supply us with the name of a contact person in your agency and their phone number and address.

Date 3/8/2019

Signature _____
Title Caltrans, Senior Env. Planner

The South Fresno Interchange Project proposes to reconfigure three existing interchanges on the State Route 99 (SR 99) freeway located at American Avenue, Central Avenue, and North Avenue, in Fresno County between Post Miles 12.5 and 19.1. Currently, there are several preliminary alternatives being considered at each of the interchange locations. Generally, each alternative proposes to 1) reconstruct and widen the overcrossings, 2) construct new and/or reconstruct the on- and off-ramps, and 3) provide improvements to adjacent local roads and intersections.

SR 99 is a major north/south transportation route running through the Central Valley of California. This region is known historically as one of the largest, most productive agricultural valleys in the world. The project lies on the southern edge of the city of Fresno, where SR 99 runs north/south through the City of Fresno and Fresno County planning jurisdictions. The interchanges were originally built in the early to mid-1960s.The land use in the project footprint is predominantly industrial with some commercial. The city began implementing these uses since the early 1960s, but the surrounding area within a quarter of a mile radius varies. Roughly 100 properties are in the immediate project area, including a mobile home park. Immediately, north and east there are mostly dense industrial and commercial uses with pockets of residential. These communities have some city infrastructure such as water, sewer, sidewalks, gas stations, a few small restaurants and fast food, and a couple of elementary schools; grocery stores, hospitals, public transportation and emergency services are provided north in the city of Fresno. Some of the residents have lived in their homes for generations. South and southwest of the project area are open fields and orchards, where agriculture has been the practiced land use historically. Running alongside the freeway there are several railroad alignments, as well as sections of the newly constructed High Speed Rail, which is a large overhead structure crossing over the freeway between Central and North avenues. There are irrigation canals crossing through the area delivering irrigation water to farmland. Scattered through the industrial properties are rusted old grain silos, remnants of the area's agricultural past.

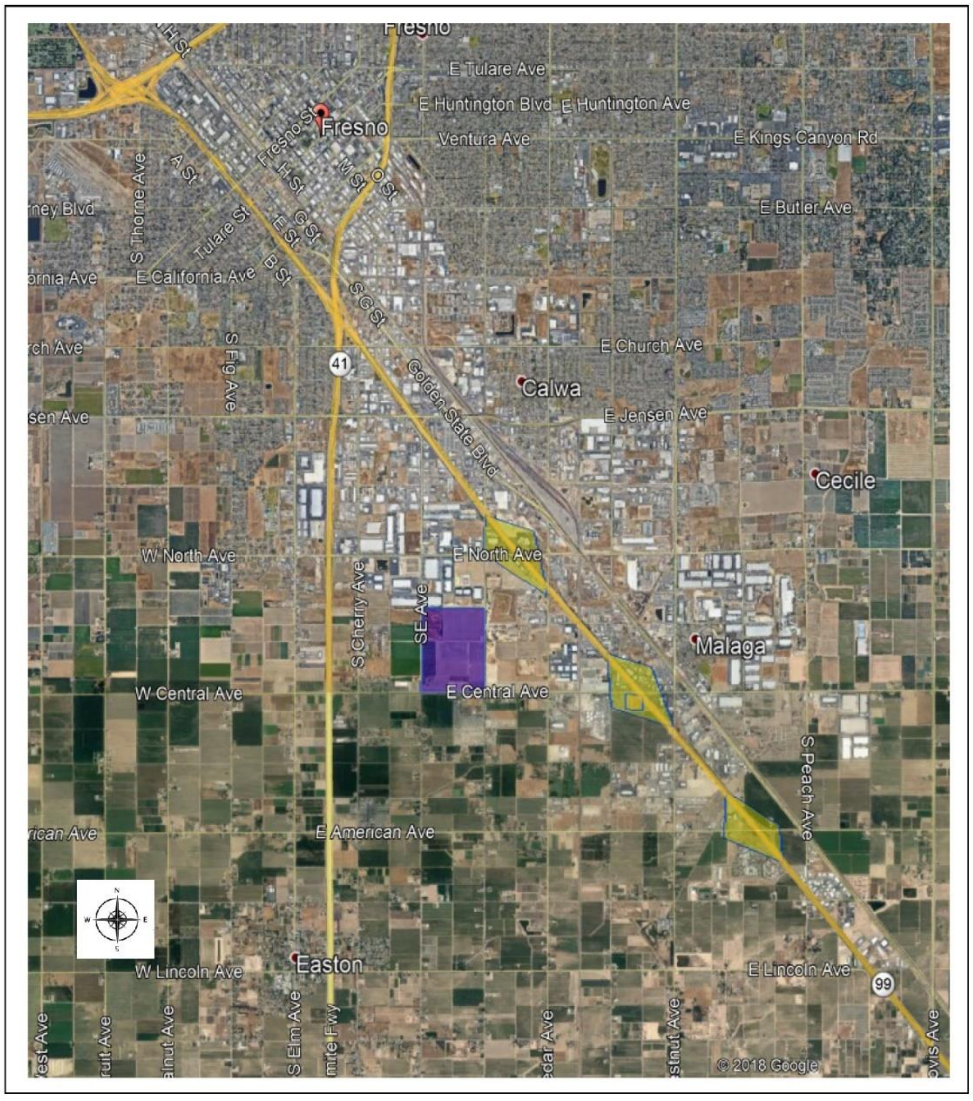
Currently, in the project area, the existing partial-interchange at American Avenue and the split-interchanges at Central/Chestnut Avenues and North/Cedar Avenues do not meet current design standards. The interchange configurations are non-standard. The pavement is old and cracked. There are only two lanes, one in each direction for traffic to cross over the freeway. Vehicles using the American Avenue interchange cannot go south or north on the freeway because there are no southbound and northbound on-ramps, so vehicles must wind their way on local streets to get onto the freeway. Vehicles using the Central/Chestnut Avenue and North/Cedar Avenue interchanges must take slow and circuitous routes, and are forced to stop at multiple intersections before arriving at their destinations located only a couple of blocks from the freeway. In addition, when the rail lines are in use, traffic is backed up on the local streets, which contributes to congestion and travel delay. Caltrans traffic studies show the interchange performance will continue to decline at the interchanges and on the intersecting local streets with continued development in and around the project area. The City of Fresno and the Fresno County general plans show continued development planned for the area, with increases in traffic, and especially large trucks. The purpose of this project is to improve the operations of the existing interchanges to accommodate the anticipated increase in traffic volume.

Caltrans is in the early "scoping" phase of the environmental process for the South Fresno Interchange Project. The environmental process for this project will include compliance with the California Environmental Quality Act and the National Environmental Policy Act (CEQA and NEPA), and all substantive state and federal environmental laws, as they are relevant to the project. Caltrans has a statewide program to conduct environmental studies which includes analysis for a wide range of environmental topics, all of which will be studied for this project with the results presented in a Draft Environmental Document. In consideration of CEQA's "Fair Argument Standard" and NEPA's consideration of Public Controversy, Caltrans has determined that an Environmental Impact Report to comply with CEQA and an Environmental Assessment to comply with NEPA are the appropriate level of environmental analysis and documentation to be prepared to assess the potential impacts resulting from construction of this project.

The interchange locations are shown as yellow diamonds in the view below (Google Earth, 12/2016). The diamonds indicate only a general area of the anticipated project footprint.

The purple box indicates where several businesses have recently developed in the project vicinity, such as Ultra Beauty and Amazon, which have contributed to increased vehicle traffic in the area.

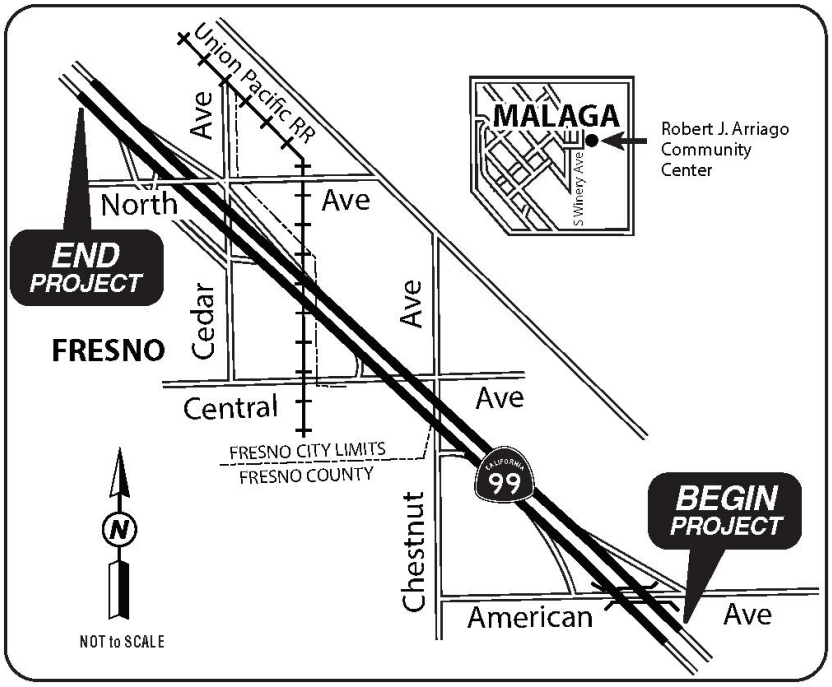
Missing from view is the High Speed Rail line, which is now a dominant feature running through this area.



PUBLIC NOTICE

Announcement of Public Information/Scoping Meeting

South Fresno Interchange Project on State Route 99



WHEN AND WHERE

Date: March 20, 2019
Time: 5:30 p.m. - 7:30 p.m.

Location: Robert J. Arriago Community Center
3582 S. Winery Ave.
Fresno, CA 93725

WHAT IS BEING PLANNED?

The California Department of Transportation (Caltrans), in coordination with the Fresno Council of Governments (Fresno COG), the Fresno County Transportation Authority (FCTA), the City of Fresno, and Fresno County, are proposing to reconfigure three interchanges on State Route 99—at American Avenue, Central Avenue, and North Avenue—in Fresno County. The project proposes to construct new overcrossing structures with additional through-lanes, construct and/or reconstruct the on- and off-ramps, add improvements to adjacent local roads and intersections, and provide for improved bicycle and pedestrian circulation and accessibility at each interchange location.

WHY THIS PUBLIC NOTICE?

This public notice is to inform you that Caltrans will hold an open forum public information/scoping meeting to provide information on the project and gather input and feedback from the public.

WHERE DO YOU COME IN?

Please come to the meeting, ask questions about the project, and give your comments to the project team. View the informative displays and project maps. Hmong and Spanish language interpreters will be on hand to translate, if needed. Comment cards will be available for you to submit written comments. A court reporter will also be present to take spoken comments.

CONTACT

For information about the project, please contact the Project Manager, Neil Bretz, at (559) 243-3465 or by email at neil.bretz@dot.ca.gov. If you are not able to attend the meeting but still want to provide written comments, you can send them by U.S. mail to Juergen Vespermann, Senior Environmental Planner, Half Dome Environmental Analysis Branch, 855 M Street, Suite 200, Fresno, CA 93721, or by email to juergen.vespermann@dot.ca.gov.

SPECIAL ACCOMMODATIONS

Individuals who require special accommodation (American Sign Language interpreter, accessible seating, documentation in alternate formats, etc.) are requested to contact the District 6 Public Information Office at (559) 444-2518 at least 21 days prior to the scheduled scoping meeting date. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or 711. (1-800-855-3000 for Spanish version).

Gavin Newsom
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Kate Gordon
Director

Notice of Preparation

March 22, 2019

To: Reviewing Agencies

Re: South Fresno Interchange Project
SCH# 2019039121

Attached for your review and comment is the Notice of Preparation (NOP) for the South Fresno Interchange Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Raychel Skeen
Caltrans 6 (Fresno)
855 M Street, Suite 200
Fresno, CA 93721

with a copy to the State Clearinghouse in the Office of Planning and Research at state.clearinghouse@opr.ca.gov. Please refer to the SCH number noted above in all correspondence concerning this project on our website: https://ceqanet.opr.ca.gov/2019039121/2.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov www.opr.ca.gov

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2019039012

Project Title: South Fresno Interchange Project
Lead Agency: California Department of Transportation (Caltrans) **Contact Person:** Raychel Skeen
Mailing Address: 855 M Street, Suite 200 **Phone:** (559) 445-6132
City: Fresno **Zip:** 93721 **County:** Fresno

Project Location: County: Fresno **City/Nearest Community:** Malaga
Cross Streets: State Route 99 and North Ave, Central Ave, and American Ave **Zip Code:** 93725
Longitude/Latitude (degrees, minutes and seconds): ___ ° ___ ′ ___ ″ N / ___ ° ___ ′ ___ ″ W **Total Acres:** TBD
Assessor's Parcel No.: Multiple **Section:** ___ **Twp.:** ___ **Range:** ___ **Base:** ___
Within 2 Miles: State Hwy #: 99 **Waterways:** none
Airports: closest is Turner Field (private) **Railways:** several **Schools:** 2 elementary in 1 mile ra

Document Type:

CEQA: ☒ NOP ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ___ ☐ Neg Dec ☐ Mit Neg Dec ☐ Other: ___

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI ☐ Other: ☐ Joint Document ☐ Final Document ☐ Other: ___

Governor's Office of Planning & Research
MAR 21 2019
STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan ☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.) ☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other: ___

Development Type:

☐ Residential: Units ___ Acres ___
☐ Office: Sq.ft. ___ Acres ___ Employees ___
☐ Commercial: Sq.ft. ___ Acres ___ Employees ___
☐ Industrial: Sq.ft. ___ Acres ___ Employees ___
☐ Educational: ___
☐ Recreational: ___
☐ Water Facilities: Type ___ MGD ___
☒ Transportation: Type Reconstruct 3 existing interchanges
☐ Mining: Mineral ___
☐ Power: Type ___ MW ___
☐ Waste Treatment: Type ___ MGD ___
☐ Hazardous Waste: Type ___
☐ Other: ___

Project Issues Discussed in Document:

☐ Aesthetic/Visual ☐ Agricultural Land ☐ Air Quality ☐ Archeological/Historical ☐ Biological Resources ☐ Coastal Zone ☐ Drainage/Absorption ☐ Economic/Jobs ☐ Fiscal ☐ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☐ Geologic/Seismic ☐ Minerals ☐ Noise ☐ Population/Housing Balance ☐ Public Services/Facilities ☐ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☐ Sewer Capacity ☐ Soil Erosion/Compaction/Grading ☐ Solid Waste ☐ Toxic/Hazardous ☐ Traffic/Circulation ☐ Vegetation ☐ Water Quality ☐ Water Supply/Groundwater ☐ Wetland/Riparian ☐ Growth Inducement ☐ Land Use ☐ Cumulative Effects ☒ Other: Affected Environment

Present Land Use/Zoning/General Plan Designation:

Immediate project area: Industrial and commercial; Broader study scope: Industrial, commercial, Ag, pockets of Residential

Project Description: *(please use a separate page if necessary)*

The South Fresno Interchange Project proposes to reconfigure three existing interchanges on State Route 99 (SR 99) freeway located at American Avenue, Central Avenue, and North Avenue, in Fresno County, CA between Post Miles 12.5 and 19.1. Currently, there are ten preliminary alternatives being considered for the interchange locations. Generally, each alternative proposes to 1) reconstruct and widen the over-crossings, 2) construct new and/or reconstruct existing on and off-ramps, and 3) provide improvements to adjacent local roads and intersections.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

NOP Distribution List

County: Fresno **SCH#** 2019039121

Sources Agency

- [ ] **Resources Agency** Nadell Gayou
- [ ] **Dept. of Boating & Waterways** Denise Peterson
- [ ] **California Coastal Commission** Allyson Hitt
- [ ] **Colorado River Board** Elsa Contreras
- [ ] **Dept. of Conservation** Crina Chan
- [ ] **Cal Fire** Dan Foster
- [ ] **Central Valley Flood Protection Board** James Herota
- [ ] **Office of Historic Preservation** Ron Parsons
- [ ] **Dept of Parks & Recreation** Environmental Stewardship Section
- [ ] **S.F. Bay Conservation & Dev't. Comm.** Steve Goldbeck
- [ ] **Dept. of Water Resources** Resources Agency Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife** Scott Flint Environmental Services Division
- [ ] **Fish & Wildlife Region 1** Curt Babcock
- [ ] **Fish & Wildlife Region 1E** Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2** Jeff Drongesen
- [ ] **Fish & Wildlife Region 3** Craig Weightman
- [ ] **Fish & Wildlife Region 4** Julie Vance
- [ ] **Fish & Wildlife Region 5** Leslie Newton-Reed Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6** Tiffany Ellis Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M** Heidi Calvert Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M** William Paznokas Marine Region

Other Departments

- [ ] **California Department of Education** Lesley Taylor
- [ ] **OES (Office of Emergency Services)** Monique Wilber
- [ ] **Food & Agriculture** Sandra Schubert Dept. of Food and Agriculture
- [ ] **Dept. of General Services** Cathy Buck Environmental Services Section
- [ ] **Housing & Comm. Dev.** CEQA Coordinator Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission** Erik Vink
- [ ] **Delta Stewardship Council** Anthony Navasero
- [ ] **California Energy Commission** Eric Knight
- [ ] **Native American Heritage Comm.** Debbie Treadway
- [ ] **Public Utilities Commission** Supervisor
- [ ] **Santa Monica Bay Restoration** Guangyu Wang
- [ ] **State Lands Commission** Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)** Cherry Jacques

Cal State Transportation Agency CalSTA

- [ ] **Caltrans - Division of Aeronautics** Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR** Christian Bushong
- [ ] **California Highway Patrol** Suzann Ikeuchi Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1** Rex Jackman
- [ ] **Caltrans, District 2** Marcelino Gonzalez
- [ ] **Caltrans, District 3** Susan Zanchi
- [ ] **Caltrans, District 4** Patricia Maurice
- [ ] **Caltrans, District 5** Larry Newland
- [ ] **Caltrans, District 6** Michael Navarro
- [ ] **Caltrans, District 7** Dianna Watson
- [ ] **Caltrans, District 8** Mark Roberts
- [ ] **Caltrans, District 9** Gayle Rosander
- [ ] **Caltrans, District 10** Tom Dumas
- [ ] **Caltrans, District 11** Jacob Armstrong
- [ ] **Caltrans, District 12** Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight** Jack Wursten
- [ ] **Transportation Projects** Nesamani Kalandiyur
- [ ] **Industrial/Energy Projects** Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery** Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board** Regional Programs Unit Division of Financial Assistance
- [ ] **State Water Resources Control Board** Cindy Forbes – Asst Deputy Division of Drinking Water
- [ ] **State Water Resources Control Board** Div. Drinking Water #_____
- [ ] **State Water Resources Control Board** Student Intern, 401 Water Quality Certification Unit Division of Water Quality
- [ ] **State Water Resources Control Board** Phil Crader Division of Water Rights
- [ ] **Dept. of Toxic Substances Control** Reg. #_____ CEQA Tracking Center
- [ ] **Department of Pesticide Regulation** CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1** Cathleen Hudson North Coast Region (1)
- [ ] **RWQCB 2** Environmental Document Coordinator San Francisco Bay Region (2)
- [ ] **RWQCB 3** Central Coast Region (3)
- [ ] **RWQCB 4** Teresa Rodgers Los Angeles Region (4)
- [ ] **RWQCB 5S** Central Valley Region (5)
- [ ] **RWQCB 5F** Central Valley Region (5) Fresno Branch Office
- [ ] **RWQCB 5R** Central Valley Region (5) Redding Branch Office
- [ ] **RWQCB 6** Lahontan Region (6)
- [ ] **RWQCB 6V** Lahontan Region (6) Victorville Branch Office
- [ ] **RWQCB 7** Colorado River Basin Region (7)
- [ ] **RWQCB 8** Santa Ana Region (8)
- [ ] **RWQCB 9** San Diego Region (9)

- [ ] Other_____
- [ ] _____ Conservancy

Last Updated 5/22/18

List of Technical Studies

Environmental studies included analysis of a full range of environmental topics to study the effects of this project. The following technical documents were prepared for some of the topics studied:

Draft Relocation Impact Study

Air Quality Report

Noise Study Report

Water Quality Report

Natural Environment Study-Minimal Impact

Location Hydraulic Study and Floodplain Evaluation Report

Historic Property Survey Reports

- Historic Resources Evaluation Report
- Archaeological Survey Report

Hazardous Waste Reports

- Initial Site Assessment
- Preliminary Site Investigation
- Aerially Deposited Lead Study

Visual Impact Assessment

Paleontological Evaluation Report

Community Impact Memorandum

Traffic Operations Report

To obtain a copy of one or more of these technical studies and reports or the Draft Environmental Impact Report/Environmental Assessment, please send your request to the following email address: d6.public.info@dot.ca.gov

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