

Interchange Improvements at I-580 at International Parkway/Patterson Pass Road

10-SJ-580-PM 12.6/14.3

EA Number 10-1E220

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation
and the City of Tracy

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 United States Code 327 and the Memorandum of Understanding dated December 23, 2016 and executed by the Federal Highway Administration and Caltrans.

July 2020



General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study/Proposed Mitigated Negative Declaration, which examines the potential environmental impacts of alternatives being considered for the proposed project in San Joaquin County in California. Caltrans is the lead agency under the National Environmental Policy Act and the California Environmental Quality Act. A Categorical Exclusion will be prepared for National Environmental Policy Act compliance. The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and mitigation measures.

What you should do:

- Please read the document. The document can be downloaded at the following website: <https://dot.ca.gov/caltrans-near-me/district-10/district-10-current-projects>. If you would require a printed version of this document, please contact David Farris at david.farris@dot.ca.gov.
- Tell us what you think. If you have any comments regarding the proposed project, send your written comments to Caltrans by the deadline. Submit comments via United States mail to: Jennifer Lugo, Senior Environmental Planner, Central Region Environmental, California Department of Transportation, 855 M Street, Suite 200, Fresno, California 93721.
- Submit comments via email to internationalparkwayinterchanges@dot.ca.gov.
- Submit comments by the deadline: July 30, 2020.

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.

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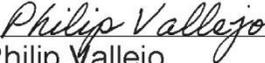
Interchange Improvements at I-580 at
International Parkway and Patterson Pass Road

INITIAL STUDY with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation
and
The City of Tracy

Responsible Agencies: California Transportation Commission


Philip Vallejo
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NEPA and CEQA Lead Agency

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DRAFT

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to improve the Interstate 580 interchange at International Parkway/Patterson Pass Road between post mile 12.6 and post mile 14.3 in San Joaquin County.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This Mitigated Negative Declaration is subject to change based on comments received from interested agencies and the public. Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons.

The proposed project would have no effect on land use, coastal zones, wild and scenic rivers, parks and recreation, timberland, growth, community character and cohesion, environmental justice, traffic, natural communities, population and housing, and minerals.

The proposed project would have no significant effect on farmland, relocation and real property, utilities and emergency services, visual resources, cultural resources, hydrology and floodplain, water quality and stormwater, geology and soils, hazards and hazardous materials, air quality, energy, noise and vibration, wildfire, animal species, and invasive species.

The proposed project would have no significantly adverse effect on paleontological resources, wetlands and other waters, threatened and endangered species, and plant species because the following mitigation measures would reduce potential effects to insignificance:

- Write a Paleontological Evaluation Report and Prepare and Implement a Paleontological Mitigation Plan, if needed.
- Compensate for Loss of Wetlands.
- Mitigate for Permanent Impacts on Special-Status Plants.
- Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species through participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

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

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), in cooperation with the city of Tracy, proposes to improve the existing compact diamond (Type L-1) interchange at Interstate 580 (I-580) and International Parkway/Patterson Pass Road (hereafter I-580/International Parkway Interchange) between post mile 12.6 and post mile 14.3. Increased traffic demand due to existing commercial development and planned future growth in San Joaquin County is creating the need to improve the interchange. Figure 1-1 and Figure 1-2 show the project location and project area.

Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and under the California Environmental Quality Act (CEQA).

The existing I-580/International Parkway Interchange is next to the *Cordes Ranch Specific Plan* area. The *Cordes Ranch Specific Plan Final Environmental Impact Report* found that some specific plan area project elements would cause a significant impact on the intersections of International Parkway and the westbound ramps of I-580, and Patterson Pass Road and the eastbound I-580 ramps. Therefore, the environmental impact report recommended improvements to the interchange as mitigation to reduce impacts to a less-than-significant level.

A Build and a No-Build Alternative are analyzed in this document.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of this project is to reduce congestion resulting from ongoing and planned development of the *Cordes Ranch Specific Plan* and to improve local circulation.

1.2.2 Need

This project is needed to accommodate the increase in traffic demand projected as part of the planned development in the *Cordes Ranch Specific Plan* area and nearby areas in Tracy, and to discourage highway traffic from using local roadways, thereby improving local circulation.

The *Cordes Ranch Specific Plan Environmental Impact Report* concluded that traffic resulting from the specific plan development would cause a significant

impact on the intersections of International Parkway and the on-ramps and off-ramps of I-580. The environmental impact report identified mitigation measures to reduce potential impacts to a less-than-significant level. The interchange improvements would be implemented to support compliance with the environmental impact report mitigation measures. The information provided below is based on the Traffic Operations Analysis Report prepared for this project in July 2019.

Level of service is a measure of the quality of performance of intersections and road or highway segments related to traffic flow and time delay. Letters from A to F are assigned, with “Level of Service A” being the best operation (free flowing traffic) and “Level of Service F” being the worst operation (traffic jam). State and local agencies adopt thresholds of acceptable levels of service. Caltrans and the city of Tracy identify “Level of Service D” as the minimum acceptable operations criteria for intersections and road or highway segments.

Under existing conditions, the I-580/International Parkway Interchange serves a combination of traffic to and from the *Cordes Ranch Specific Plan* area (located north of I-580) and regional traffic from Schulte Road in the city of Tracy. Because of congestion on I-580, I-205, and the Altamont Pass to and from the San Francisco Bay Area, a significant amount of commuter traffic uses the I-580/International Parkway Interchange and Patterson Pass Road to bypass Altamont Pass during the morning peak period (5 a.m. to 9 a.m.) and during the evening peak period (3 p.m. to 7 p.m.). This results in congestion and delays at the existing side street intersections during both morning and evening peak hours. Currently, three of the four intersections examined operate at an unacceptable level of service: International Parkway/Schulte Road and International Parkway/I-580 westbound ramps during the morning peak hours, and Patterson Pass Road/Frontage Road during the evening peak hours (see Table 1-1). All freeway segments operate at acceptable level of service (see Table 1-2).

Table 1-1. Intersection Demand Volume Operations—Existing Conditions

Intersection (Control)—Movement	Morning Peak Hour Level of Service	Morning Peak Hour Delay (seconds)	Evening Peak Hour Level of Service	Evening Peak Hour Delay (seconds)
International Parkway/Schulte Road (Signal) Eastbound Left Turn	E	57.7	E	58.5
International Parkway/Schulte Road (Signal) Eastbound Through	E	65.5	E	55.2
International Parkway/Schulte Road (Signal) Eastbound Right Turn	B	12.6	A	5.7
International Parkway/Schulte Road (Signal) Westbound Left Turn	F	389.7	E	68.7
International Parkway/Schulte Road (Signal) Westbound Through	F	114.2	E	56.4
International Parkway/Schulte Road (Signal) Westbound Right Turn	F	104.1	B	11.5
International Parkway/Schulte Road (Signal) Northbound Left Turn	E	65.3	E	60.6
International Parkway/Schulte Road (Signal) Northbound Through	C	34.2	C	28.0
International Parkway/Schulte Road (Signal) Northbound Right Turn	B	12.0	B	11.0
International Parkway/Schulte Road (Signal) Southbound Left Turn	F	154.7	E	58.2
International Parkway/Schulte Road (Signal) Southbound Through	F	214.3	C	23.0
International Parkway/Schulte Road (Signal) Southbound Right Turn	F	132.9	A	6.1
International Parkway/Schulte Road (Signal) Overall	F	208.0	C	31.7
International Parkway/I-580 Westbound Ramp (Signal) Westbound Left Turn	E	83.7	D	47.5
International Parkway/I-580 Westbound Ramp (Signal) Westbound Right Turn	B	11.5	A	1.6
International Parkway/I-580 Westbound Ramp (Signal) Northbound Left Turn	F	143.2	A	9.4
International Parkway/I-580 Westbound Ramp (Signal) Northbound Through	F	101.7	B	10.0
International Parkway/I-580 Westbound Ramp (Signal) Southbound Through	F	135.0	F	133.6
International Parkway/I-580 Westbound Ramp (Signal) Southbound Right Turn	C	29.6	B	10.8
International Parkway/I-580 Westbound Ramp (Signal) Overall	E	75.2	D	39.2
International Parkway/I-580 Eastbound Ramp (Signal) Eastbound Left Turn	F	100.8	E	55.2
International Parkway/I-580 Eastbound Ramp (Signal) Eastbound Right Turn	B	18.1	A	5.5
International Parkway/I-580 Eastbound Ramp (Signal) Northbound Through	E	55.1	C	24.6
International Parkway/I-580 Eastbound Ramp (Signal) Northbound Right Turn	A	6.4	B	18.4
International Parkway/I-580 Eastbound Ramp (Signal) Southbound Left Turn	A	9.8	D	46.0
International Parkway/I-580 Eastbound Ramp (Signal) Southbound Through	B	14.3	D	49.7

Intersection (Control)—Movement	Morning Peak Hour Level of Service	Morning Peak Hour Delay (seconds)	Evening Peak Hour Level of Service	Evening Peak Hour Delay (seconds)
International Parkway/I-580 Eastbound Ramp (Signal) Overall	C	20.1	C	29.3
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	D	28.8	D	26.2
Eastbound Patterson Pass Road/Frontage Road (Side Street Stop)—Right Turn	D	34.0	A	3.9
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	B	14.3	D	27.1
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	A	0.6	E	45.1
Southbound Patterson Pass Road/Frontage Road (Side Street Stop)—Through	A	4.6	A	4.6
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	A	1.8	A	5.2
Patterson Pass Road/Frontage Road (Side Street Stop)— Overall	A	4.6	E	41.6

Note: Level of service/average delay in seconds per vehicle and (volume and percent served) is reported from an average of 12 runs from SimTraffic 10.

Table 1-2. Freeway Operations—Existing Conditions

Location	Type	Morning Peak Hour Level of Service	Evening Peak Hour Level of Service
Westbound freeway from Corral Hollow Road to International Parkway	Basic	C	A
The westbound International Parkway Diagonal Off-Ramp	Diverge	D	B
Westbound freeway from International Parkway Off-Ramp to On-Ramp	Basic	B	A
The westbound International Parkway Diagonal On-Ramp	Merge	C	B
Westbound freeway from International Parkway to I-205	Basic	C	A
Eastbound freeway from I-205 to Patterson Pass Road	Basic	A	C
The eastbound Patterson Pass Road Diagonal Off-Ramp	Diverge	B	C
Eastbound freeway from Patterson Pass Road Off-Ramp to On-Ramp	Basic	A	B
The eastbound Patterson Pass Road Diagonal On-Ramp	Merge	B	D
Eastbound freeway from Patterson Pass Road to Corral Hollow Road	Basic	A	D

Under Construction Year 2023 No-Build conditions, operations worsen at the three intersections that were previously operating an unacceptable level of service (see Table 1-3). Freeway operations worsen, with unacceptable level of service at one westbound movement during the morning peak hours and at two eastbound movements during the evening peak hours (see Table 1-4).

Table 1-3. Intersection Demand Volume Operations—Construction Year 2023 No-Build Alternative

Intersection (Control)—Movement	Morning Peak Hour Level of Service	Morning Peak Hour Delay (seconds)	Evening Peak Hour Level of Service	Evening Peak Hour Delay (seconds)
International Parkway/Schulte Road (Signal) Eastbound Left Turn	E	77.8	E	67.7
International Parkway/Schulte Road (Signal) Eastbound Through	F	83.9	E	71.8
International Parkway/Schulte Road (Signal) Eastbound Right Turn	E	62.6	B	12.2
International Parkway/Schulte Road (Signal) Westbound Left Turn	F	667.2	E	60.4
International Parkway/Schulte Road (Signal) Westbound Through	F	307.9	D	54.2
International Parkway/Schulte Road (Signal) Westbound Right Turn	F	305.5	B	17.9
International Parkway/Schulte Road (Signal) Northbound Left Turn	E	73.3	E	60.4
International Parkway/Schulte Road (Signal) Northbound Through	D	39.7	C	30.2
International Parkway/Schulte Road (Signal) Northbound Right Turn	B	12.4	B	10.1
International Parkway/Schulte Road (Signal) Southbound Left Turn	F	287.5	E	56.5
International Parkway/Schulte Road (Signal) Southbound Through	F	660.2	C	25.6
International Parkway/Schulte Road (Signal) Southbound Right Turn	F	640.5	A	8.0
International Parkway/Schulte Road (Signal) Overall	F	440.5	C	147.5
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Left Turn	F	188.1	F	330.8
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Right Turn	D	50.0	A	7.6
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Left Turn	E	71.3	A	5.9
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Through	C	27.1	B	10.1
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Through	F	199.9	F	196.2
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Right Turn	D	43.5	B	14.6
International Parkway/I-580 Westbound Ramps (Signal)— Overall	F	113.0	E	77.5
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Left Turn	F	154.1	F	82.8
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Right Turn	E	67.5	B	12.8
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Through	D	43.6	D	46.7
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Right Turn	A	7.8	C	33.5
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Left Turn	A	9.6	D	48.1
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Through	B	19.1	E	70.0

Intersection (Control)—Movement	Morning Peak Hour Level of Service	Morning Peak Hour Delay (seconds)	Evening Peak Hour Level of Service	Evening Peak Hour Delay (seconds)
International Parkway/I-580 Eastbound Ramps (Signal)— Overall	D	41.9	D	47.6
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	D	27.4	C	20.8
Eastbound Patterson Pass Road/Frontage Road (Side Street Stop)—Right Turn	C	16.0	A	5.1
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	B	10.0	F	110.4
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	A	0.8	F	127.3
Southbound Patterson Pass Road/Frontage Road (Side Street Stop)—Through	A	5.1	A	5.2
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	A	4.3	A	5.0
Patterson Pass Road/Frontage Road (Side Street Stop)— Overall	A	5.1	F	104.3

Note: Level of service/average delay in seconds per vehicle and (volume and percent served) is reported from an average of 12 runs from SimTraffic.

Table 1-4. I-580 Freeway Operations—Construction Year 2023 No-Build Alternative

Location	Type	Morning Peak Hour Level of Service	Evening Peak Hour Level of Service
Westbound freeway from Corral Hollow Road to International Parkway	Basic	D	A
The westbound International Parkway Diagonal Off-Ramp	Diverge	E	B
Westbound freeway from International Parkway Off-Ramp to On-Ramp	Basic	C	A
The westbound International Parkway Diagonal On-Ramp	Merge	C	B
Westbound freeway from International Parkway to I-205	Basic	D	A
Eastbound freeway from I-205 to Patterson Pass Road	Basic	A	C
The eastbound Patterson Pass Road Diagonal Off-Ramp	Diverge	B	D
Eastbound freeway from Patterson Pass Road Off-Ramp to On-Ramp	Basic	A	C
The eastbound Patterson Pass Road Diagonal On-Ramp	Merge	B	E
Eastbound freeway from Patterson Pass Road to Corral Hollow Road	Basic	A	E

Under Design Year 2043 conditions, operations continue to worsen at the intersections that operated at unacceptable level of service in 2023, with delays increasing to as much as 30 minutes (Table 1-5). In 2043, projected build out of the *Cordes Ranch Specific Plan* and regional traffic from Schulte Road will result in the existing I-580/International Parkway Interchange operating at unacceptable level of service (F) during both morning and evening peak hours. Even with traffic signals, the existing I-580/International

Parkway Interchange would not provide enough capacity to serve projected Design Year 2043 morning and evening peak hour traffic volumes (Table 1-6).

Table 1-5. Intersection Demand Volume Operations—Design Year 2043 No-Build Alternative

Movement	Morning Peak Hour Level of Service	Morning Peak Hour Delay (seconds)	Evening Peak Hour Level of Service	Evening Peak Hour Delay (seconds)
International Parkway/Schulte Road (Signal) Eastbound Left Turn	F	363.6	F	135.3
International Parkway/Schulte Road (Signal) Eastbound Through	F	484.3	F	194.8
International Parkway/Schulte Road (Signal) Eastbound Right Turn	D	212.2	D	36.1
International Parkway/Schulte Road (Signal) Westbound Left Turn	F	1333.3	F	2164.6
International Parkway/Schulte Road (Signal) Westbound Through	F	744.0	F	1417.5
International Parkway/Schulte Road (Signal) Westbound Right Turn	F	774.7	F	1430.1
International Parkway/Schulte Road (Signal) Northbound Left Turn	E	73.2	E	58.5
International Parkway/Schulte Road (Signal) Northbound Through	D	36.3	C	25.3
International Parkway/Schulte Road (Signal) Northbound Right Turn	B	15.3	B	10.0
International Parkway/Schulte Road (Signal) Southbound Left Turn	F	1002.3	F	646.5
International Parkway/Schulte Road (Signal) Southbound Through	F	1498.6	F	1038.7
International Parkway/Schulte Road (Signal) Southbound Right Turn	F	1526.1	F	1023.0
International Parkway/Schulte Road (Signal) Overall	F	924.6	F	814.1
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Left Turn	F	146.8	F	467.2
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Right Turn	D	35.5	F	80.8
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Left Turn	F	84.2	C	20.7
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Through	E	71.1	D	20.3
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Through	F	313.2	F	186.8
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Right Turn	E	61.8	C	24.4
International Parkway/I-580 Westbound Ramps (Signal)— Overall	F	119.6	F	117.5
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Left Turn	F	341.0	F	350.1
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Right Turn	F	242.4	F	222.9
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Through	F	94.7	D	53.4

Movement	Morning Peak Hour Level of Service	Morning Peak Hour Delay (seconds)	Evening Peak Hour Level of Service	Evening Peak Hour Delay (seconds)
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Right Turn	D	40.1	D	37.3
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Left Turn	B	18.9	C	33.0
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Through	C	25.1	E	68.4
International Parkway/I-580 Eastbound Ramps (Signal)— Overall	F	91.5	D	93.7
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	F	173.6	C	18.3
Patterson Pass Road/Frontage Road (Side Street Stop)—Right Turn	F	92.7	A	5.0
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	E	41.0	F	189.3
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	F	50.0	F	224.7
Patterson Pass Road/Frontage Road (Side Street Stop)—Through	A	4.8	A	4.7
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	A	2.0	A	3.4
Patterson Pass Road/Frontage Road (Side Street Stop)— Overall	C	16.8	F	167.7

Note: Level of service/average delay in seconds per vehicle and (volume and percent served) is reported from an average of 12 runs from SimTraffic 10.

Table 1-6. Freeway Operations—Design Year 2043 No-Build Alternative

Location	Type	Morning Peak Hour Level of Service	Evening Peak Hour Level of Service
Westbound freeway from Corral Hollow Road to International Parkway	Basic	F	B
The westbound International Parkway Diagonal Off-Ramp	Diverge	F	C
Westbound freeway from International Parkway Off-Ramp to On-Ramp	Basic	F	A
The westbound International Parkway Diagonal On-Ramp	Merge	F	B
Westbound freeway from International Parkway to I-205	Basic	F	B
Eastbound freeway from I-205 to Patterson Pass Road	Basic	B	F
The eastbound Patterson Pass Road Diagonal Off-Ramp	Diverge	B	F
Eastbound freeway from Patterson Pass Road Off-Ramp to On-Ramp	Basic	A	F
The east bound Patterson Pass Road Diagonal On-Ramp	Merge	B	F
Eastbound freeway Patterson Pass Road to Corral Hollow Road	Basic	B	F

Logical Termini and Independent Utility

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

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

Consideration of concepts of logical termini and independent utility avoids segmenting of projects and unevaluated impacts on resources. Segmenting of a project occurs when the transportation need extends past the study boundaries, requiring additional improvements that may result in impacts that are not addressed in the environmental analysis.

The proposed project would function and address the purpose and need identified above without additional improvements. Therefore, the project has independent utility. The project would also connect logical termini, in that the area studied encompasses a broad enough area to fully address environmental issues.

1.3 Project Description

Caltrans, in cooperation with the city of Tracy, proposes to improve the existing compact diamond (Type L-1) interchange at the I-580/International Parkway Interchange in San Joaquin County to accommodate traffic resulting from ongoing and planned development, primarily of the *Cordes Ranch Specific Plan*.

Figure 1-1. Project Vicinity Map

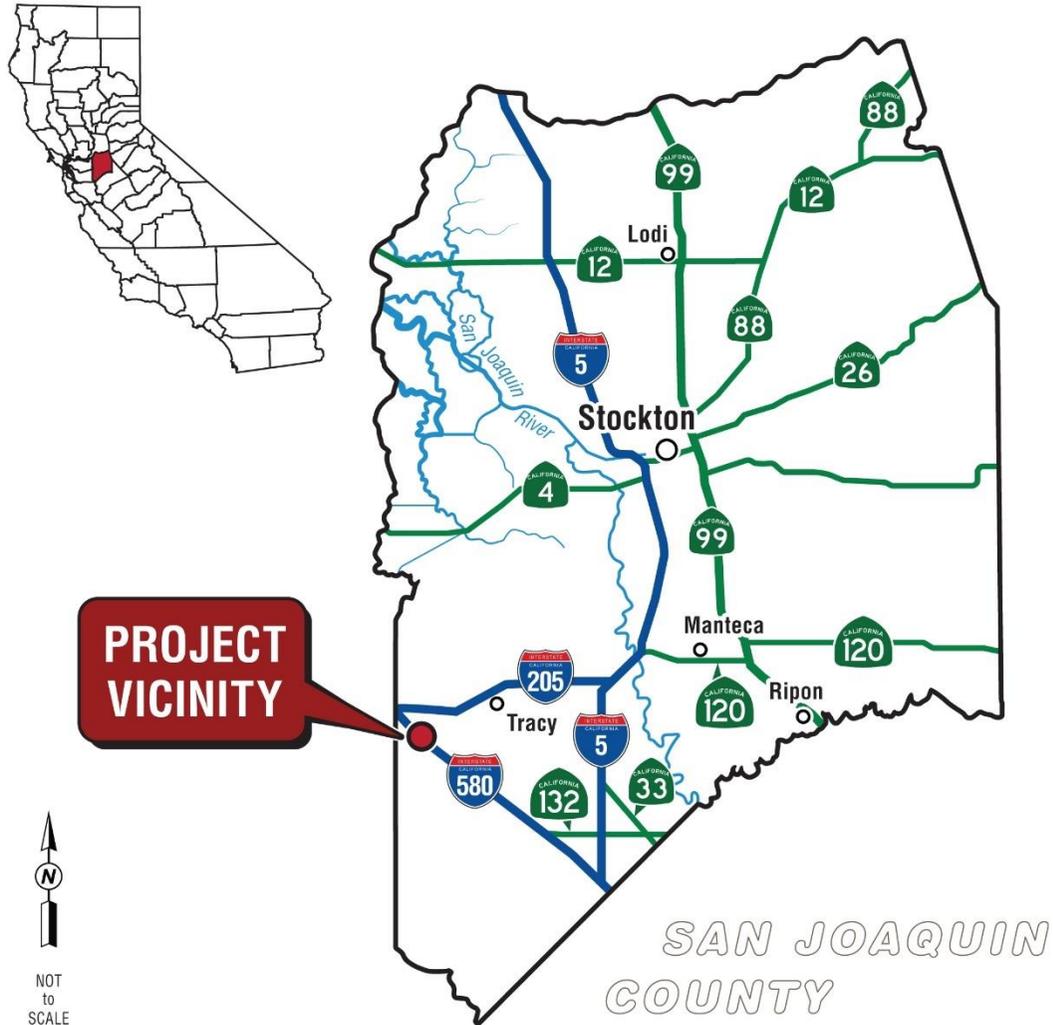
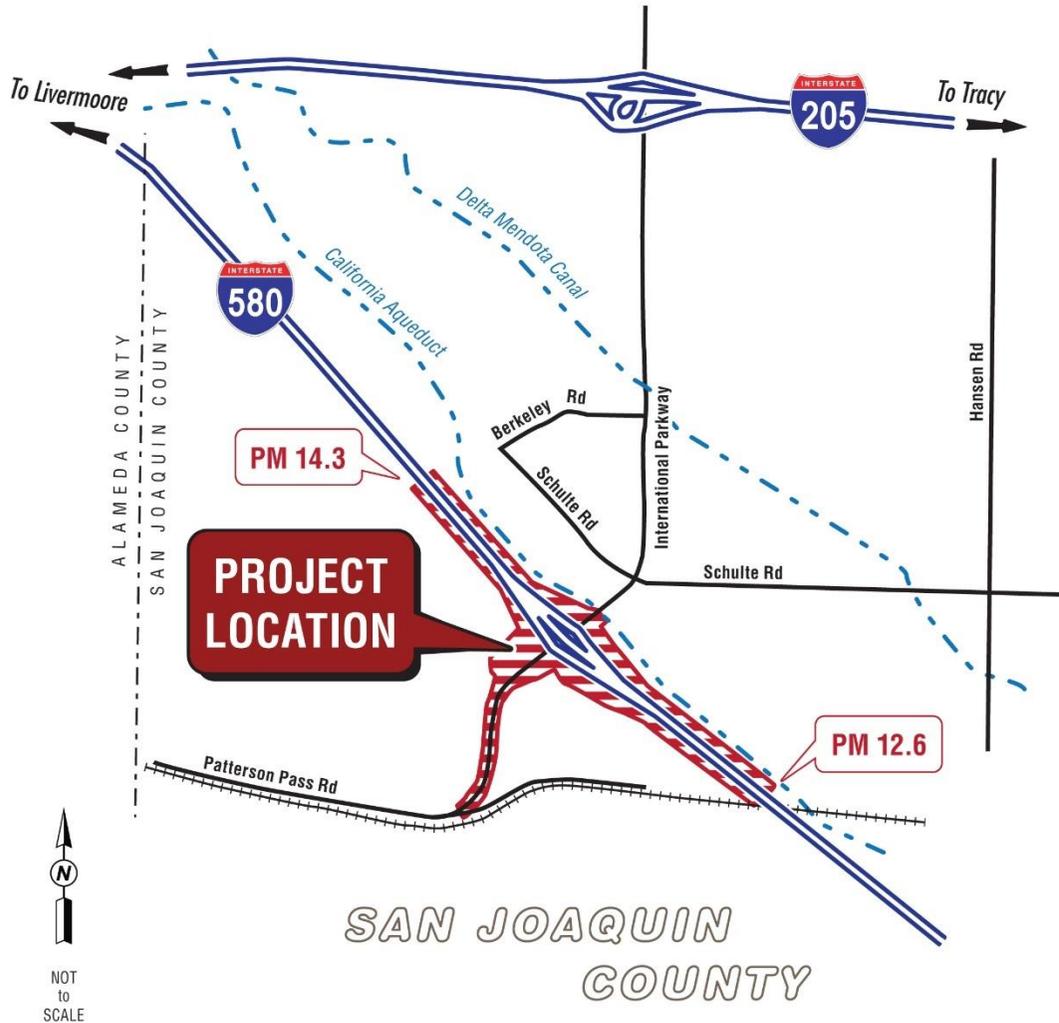


Figure 1-2. Project Location Map



1.4 Project Alternatives

A Build Alternative and a No-Build Alternative are considered in this document.

1.4.1 Build Alternative

The project would result in construction of a diverging diamond interchange at I-580 at International Parkway/Patterson Pass Road (Figure 1-2). This design allows a compact diamond configuration with minor realignments to the existing ramps that would reduce the footprint of the interchange.

The diverging diamond interchange configuration would divert traffic in both directions to the opposite side of the road while crossing I-580, providing direct left turns to I-580 on-ramps and from I-580 off-ramps. Traffic would be signalized where it crosses to the other side of the road in either direction.

The existing Patterson Pass Road overcrossing would be widened to the east to accommodate three 14-foot northbound lanes, two 14-foot southbound lanes, 6-foot outside and inside shoulders, and a 15-foot multiuse (bicycle and pedestrian) path in the middle of the overcrossing.

The eastbound on-ramp would be realigned to allow for three lanes, including a high-occupancy vehicle lane at the entrance ramp. The westbound on-ramp would consist of two general purpose lanes and a high-occupancy vehicle lane.

The westbound off-ramp would be a two-lane exit ramp that would widen to four lanes: two left turn lanes to Patterson Pass Road and two right turn lanes to International Parkway. The project would also add a 1,500-foot auxiliary lane for the westbound off-ramp. The eastbound off-ramp would remain a single lane exit ramp that would widen to three lanes: two left turn lanes and a single right turn lane to Patterson Pass Road.

The diverging diamond interchange configuration would maintain access to the existing gas station. Modification to the eastbound off-ramp would require realigning the private road to connect to Patterson Pass Road south of the gas station. A new driveway to the gas station is proposed to connect to the private road about 500 feet from the intersection of Patterson Pass Road and eastbound ramps.

The estimated total cost for the Build Alternative is \$49.182 million.

Construction

Late nighttime construction work is expected to set or remove temporary concrete railing and to set or remove structure falsework. Construction staging and contractor yards could be located within the southwest quadrant,

between the eastbound on-ramp and the mainline. Construction is expected to be accomplished in five phases: mobilization, westbound bridge approach widening, eastbound bridge approach widening, demobilization, and final striping. The bridge would remain open during construction and all traffic would be constrained to existing or new pavement. No detours are expected.

Depths of excavation are expected to range from 3 feet to 10 feet, except pile driving would extend to more than 50 feet deep. The following assumptions were made regarding the depth of excavation.

- Road widening excavations would be about 5 feet deep.
- Detention basin excavations would be less than 10 feet deep.
- Utility line trenches would be less than 10 feet deep.
- Road bent foundations would be about 8 feet deep.
- Wall foundations would be less than 3 feet deep and would be supported by 50-foot-deep piles.

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

Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management strategies focus on improving the efficiency of existing facilities without increasing the number of through lanes. Options such as ramp metering, auxiliary lanes, and reversible lanes are generally implemented under Transportation System Management and help reduce congestion. Although Transportation System Management measures alone could not satisfy the purpose and need of the project, the project includes several Transportation System Management measures that would improve efficiency, including improved on-ramps and off-ramps and an auxiliary lane.

Transportation Demand Management strategies focus on regional means of reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy. In addition to High Occupancy Vehicle lanes, projects may encourage these reductions by providing other options, such as ride sharing and facilities for public transportation, or bicycle and pedestrian facilities. The project includes bicycle and pedestrian facilities, such as sidewalks, curbs, bicycle lanes, and pedestrian-accessible overcrossings.

Reversible Lanes

Reversible lanes were eliminated from consideration in the Draft Project Report because the traffic patterns within the interchange do not lend themselves to reversible lanes. Reversible lanes are appropriate when there are high through volumes on the local arterial that are highly directional in nature from the morning to evening peak hour periods (e.g., heavy southbound traffic through the interchange in the morning and then heavy northbound traffic in the evening). In this case, the heavy traffic movements are to and from the I-580 (not through the interchange).

1.4.2 No-Build (No-Action) Alternative

Under the No-Build Alternative, the existing interchange would remain unchanged except for planned and programmed improvements. Impacts from traffic associated with the *Cordes Ranch Specific Plan* would not be addressed and other mitigation for impacts of the specific plan would need to be identified.

1.5 Alternatives Considered but Eliminated from Further Discussion

1.5.1 Widen Compact Diamond (Type L-1) Interchange

This alternative proposed to improve the existing diamond interchange to accommodate five traffic lanes on International Parkway/Patterson Pass Road. The existing bridge would have been widened to accommodate the above improvements. The eastbound on-ramp would have been widened to two lanes to accommodate the left turn traffic from Mountain House Parkway. The existing eastbound off-ramp would have been widened to three lanes to accommodate dual left turn lanes and a shared through and right turn lane. This alternative was rejected due to poor operational performance.

1.5.2 Partial Cloverleaf (Type L-9) Interchange

This alternative proposed to improve the existing diamond interchange to accommodate five traffic lanes on International Parkway/Patterson Pass Road. The existing bridge would have been widened to accommodate the above improvements. The westbound ramps would have been widened. The eastbound on-ramp would have been realigned to accommodate construction of a loop on-ramp. The existing eastbound off-ramp would have been widened to three lanes to accommodate dual left turn lanes and a shared through and right turn lane. The existing eastbound on-ramp would have been realigned. This alternative was rejected because the Build Alternative achieves comparable operational performance with a significantly smaller project footprint, lower cost, and significant reduction of right-of-way acquisition.

1.6 Permits and Approvals Needed

Table 1-7 lists the permits, licenses, agreements, and certifications expected to be required for project construction.

Table 1-7. Expected Permits Required for Project Construction

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Streamlined Section 7 Biological Opinion: San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	To be completed by the Final Environmental Document
United States Army Corps of Engineers	CWA Section 404 Permit	To be completed in final design
Central Valley Regional Water Quality Control Board	CWA Section 402/Stormwater Discharge	To be completed in final design
Central Valley Regional Water Quality Control Board	Section 401 Water Quality Certification	To be completed in final design

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

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

- Land Use—The proposed project is consistent with the *San Joaquin County General Plan*, the *City of Tracy General Plan* and the *Cordes Ranch Specific Plan*. (Community Impact Assessment Memorandum. December 2019)
- Coastal Zone—The proposed project is not in or near a coastal zone and would not affect a coastal zone.
- Wild and Scenic Rivers—The proposed project is not next to or within the vicinity of a wild and scenic river and, therefore, would not affect such a resource. (National Wild and Scenic River Website: <http://www.rivers.gov/california.php>)
- Parks and Recreation—The parks nearest the project area are neighborhood parks in the city of Tracy, about 3.5 miles to the east and neighborhood parks in the community of Mountain House, about 3.5 miles to the north. The proposed project would not impede access to any parks or have any negative effects on parks or recreational facilities. (Community Impact Assessment Memorandum. December 2019)
- Timberland—No timberlands are within the project vicinity and, therefore, the project would not affect timberlands.
- Growth—The proposed project would improve an existing interchange and would not directly induce growth. It would not indirectly induce growth by providing access to new areas or by altering the nature, location, or timing of planned future development. (Community Impact Assessment Memorandum. December 2019)
- Community Character and Cohesion—The proposed project would improve an existing interchange. The project does not have the potential to divide a community or affect community character or cohesion. (Community Impact Assessment Memorandum. December 2019)
- Environmental Justice—The study area addressed in the Community Impact Assessment Memorandum, when considered as a whole, exhibits demographic characteristics similar to the rest of Tracy and San Joaquin

County. Environmental justice impacts of the proposed project would be typical of those of an interchange improvement project: construction-related air quality emissions, construction-related noise, and visual impacts. Under the proposed project, the impacts would be distributed uniformly across the extent of the study area and would decrease in intensity with distance from the study area boundary, and no adverse effects would be predominantly felt by a minority and/or low-income population. No minority or low-income populations that would be adversely affected by the proposed project have been identified as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898. (Community Impact Assessment Memorandum, December 2019)

- Cultural Resources—No archaeological resources or built environment resources are located within the area of potential effects (Historic Property Survey Report prepared in October 2019). Therefore, no known cultural resources would be affected by the project. Caltrans' standard measures to stop work would ensure that archeological materials or human remains that are inadvertently discovered are not affected.
- Wildfire—The project site is within a moderate fire hazard area. The proposed project would result in the improvement of an existing interchange and would not increase the chance of wildfire by introducing traffic and human presence to an otherwise unoccupied area. Project design would not increase fire risks or require construction or maintenance of infrastructure that would increase fire risks.
- Natural Communities—Based on the findings of the Natural Environment Study completed for the project November 2019 and updated in an addendum in June 2020, the only natural communities of special concern in the biological study area are wetlands or other waters, which are waters of the United States and waters of the State, discussed in Section 2.3.1. Because there are no other natural communities of special concern within the biological study area, there is no potential to affect natural communities and no further discussion is provided.

2.1 Human Environment

2.1.1 Existing and Future Land Use

Affected Environment

The proposed project is at the interchange of I-580 and International Parkway/Patterson Pass Road. The portion of the interchange northeast of I-580 is within the city of Tracy's sphere of influence, but outside of the city limits. The portion of the interchange southwest of I-580 is in unincorporated San Joaquin County. As indicated in the *San Joaquin County General Plan*, most unincorporated land in San Joaquin County is designated General

Agriculture, with more intensive residential and urban uses in the incorporated cities, such as Stockton, Manteca, Tracy, and Lodi, and unincorporated communities. The *City of Tracy General Plan* Land Use Diagram designates land northeast of the interchange as industrial use. The *San Joaquin County General Plan* designates the land southwest of the interchange as General Agriculture.

The *Cordes Ranch Specific Plan* area is north of I-580 and has been in the process of development since Tracy's City Council approved the specific plan on September 17, 2013. The specific plan area contains 1,780.5 acres. Designated land uses within the specific plan area include General Commercial, General Office, and Business Park, as well as more than 90 acres of parks and open space. The *Cordes Ranch Specific Plan Draft Environmental Impact Report* indicated that construction would take place in two phases, with Phase 1 completed in 10 to 15 years and Phase 2 completed within 20 to 30 years. Development is currently ahead of schedule.

Environmental Consequences

Effects of the Build Alternative

A total of 16.95 acres currently under agricultural land use would become transportation facility as a result of the proposed project. The project would have no effect on other surrounding lands.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are necessary.

2.1.2 Farmland

Regulatory Setting

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

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

Affected Environment

The following discussion is based upon the Community Impact Assessment Memorandum prepared for the proposed project in November 2019, and the associated Farmland Conversion Impact Rating Form dated October 9, 2019. The study area addressed in the Community Impact Assessment Memorandum contains farmland designated by the California State Department of Conservation Farmland Mapping and Monitoring Program as important farmland. According to the program, the agricultural land within the study area is classified as prime farmland and farmland of local importance. No Williamson Act parcels are present within the project area.

Environmental Consequences

Effects of the Build Alternative

Acquisitions by land use are shown in Table 2.1.2-1.

Table 2.1.2-1. Acquisitions by Land Use

Land Use Type	Acres
Prime Farmland	0.0
Farmland of Local Importance	0.0
Grazing Land	5.676
Urban/Built-Up Land	6.923
Total	16.695

No important farmland, either prime farmland, unique farmland, or farmland of state or local importance, would be converted to non-agricultural use. The acquisition of a narrow strip of land next to I-580 would not convert prime farmland because that area is not irrigated, which is a consideration for its designation. Impacts on mapped farmland were evaluated using the United States Department of Agriculture “Farmland Conversion Impact Rating” which was completed in conjunction with Natural Resources Conservation Service on October 9, 2019. Therefore, the proposed project is not expected to result in adverse effects on farmlands and no mitigation measures are required.

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and no farmland would be impacted.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are necessary.

2.1.3 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 (Uniform Act), and Title 49 Code of Federal Regulations (Part 24). The purpose of the Relocation Assistance Program is to ensure that persons displaced because of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as because of projects designed for the benefit of the public as a whole. Please see Appendix B for a summary of the Relocation Assistance Program.

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

Affected Environment

The following discussion is based upon the Community Impact Assessment Memorandum and Right-of-Way Data Sheet prepared for the proposed project in November 2019 and the right-of-way data sheets for the project dated November 1, 2019. The study area addressed in the Community Impact Assessment Memorandum consists primarily of agricultural land, I-580, and one business, the ARP Mini-Mart. Other properties next to the project area include industrial uses in the *Cordes Ranch Specific Plan* area and the California Aqueduct, as well as one rural residence.

Environmental Consequences

Effects of the Build Alternative

As shown in Table 2.1.3-1, the proposed project would require partial right-of-way acquisition on seven parcels in the study area, totaling 16.695 acres. The land that would be acquired is in agricultural or industrial use (according to the *San Joaquin County General Plan*). One business in the study area, ARP Mini-Mart and gas station, would be affected by the project. The acquisition of land from parcels 20910014 and 20910004 would encroach upon the site and could result in some parking loss.

Table 2.1.3-1. Permanent Acquisitions in the Study Area (by parcel)

Parcel (Assessor's Parcel Number)	Land Use	Right-of-Way (acres)
20910004	Agriculture (general)	0.808
20910005	Agriculture (urban reserve)	4.302
20910007	Agriculture (urban reserve)	1.924
20910014	Agriculture (general)	1.260
20910024	Agriculture (general)	7.373
20911032	Agriculture (general)	0.331
20944015	Agriculture (urban reserve)	0.697
Total	All	16.695

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and no new right-of-way would be acquired.

Avoidance, Minimization, and/or Mitigation Measures

Comply with Uniform Relocation Assistance and Real Property Acquisition Act

Any acquisitions and compensation to property owners would comply with the Uniform Relocation Assistance and Real Property Acquisition Act, as amended. In accordance with this act, compensation is provided to eligible recipients for property acquisitions. Relocation assistance payments and counseling would be provided by the transportation agencies to persons and businesses in accordance with the act, as amended, to ensure adequate relocation and a decent, safe, and sanitary home for displaced residents. All eligible displacees would be entitled to moving expenses. All benefits and services would be provided equitably to all residential and business displacees without regard to race, color, religion, age, national origins, and disability, as specified under Title VI of the Civil Rights Act of 1964. All relocation activities would be conducted by the implementing agencies in accordance with the Uniform Act, as amended. Relocation resources would be available to all displacees without discrimination.

The Nonresidential Relocation Assistance Program helps businesses, farms, and nonprofit organizations in locating suitable replacement properties and reimbursement for certain costs involved in relocation. The Relocation Assistance Program would 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 instead of any moving, searching, and re-establishment expenses.

All displacees would be contacted by a Relocation Agent, who would ensure that eligible displacees receive their full relocation benefits, including advisory assistance, and that all activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources would be available to all displacees free of discrimination.

2.1.4 Utilities and Emergency Services

Affected Environment

According to the right-of way data sheets prepared for the project, the following utility companies have been determined to have facilities within the project vicinity: Pacific Gas and Electric, AT&T, Verizon, and Zayo (fiber network). The city of Tracy provides sewer, water, and storm drain services. The South County Fire Authority provides fire protection services. Emergency

medical services in Tracy and the surrounding areas are provided by the South County Fire Authority and a local private transport ambulance provider (American Medical Response). The Tracy Police Department and California Highway Patrol provide police protection services.

Environmental Consequences

Effects of the Build Alternative

The interchange improvement would require potholing to determine if underground utilities require relocation. Relocation of utilities, if necessary, would be coordinated with the utility owners during the design process, minimizing service interruptions.

Overhead facilities (potentially electrical distribution systems, telephone and television cables) and underground utilities (water mains, sanitary sewers, storm drains, gas lines, and fiber optic and electrical cables) along I-580 and Patterson Pass Road would be relocated because of the project.

It is expected that public facilities and emergency service centers in the project vicinity would be minimally affected during construction. During construction, short-term lane closures would be necessary. Lane closures and predicted increased traffic congestion could result in slower response times for police and emergency service providers. A Transportation Management Plan and early coordination with emergency service providers would avoid or minimize the severity of increases in response times. The Build Alternative would improve access for emergency vehicles in the long term, thereby decreasing response time.

Standardized Measures

Early notification of utility service and communications providers will help to ensure that patrons are notified prior to any temporary loss of service. The construction contractor will notify emergency service providers prior to any lane closures.

As part of construction, a Transportation Management Plan would be prepared to address traffic impacts related to staged construction, lane closures, and, if applicable, detours. At a minimum, the Transportation Management Plan would detail the procedure for conducting outreach and notification to publicize planned disruptions or delays, and for the use of portable message signs. The plan would require coordination with emergency service providers.

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no relocation of utilities or impacts on response time of emergency service providers. However, in the long term, emergency response times may increase as traffic increases and levels of service decline.

Avoidance, Minimization, and/or Mitigation Measures

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

2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

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

In July 1999, the United States Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the United States Department of Transportation regulations (49 Code of Federal Regulations 27) implementing Section 504 of the Rehabilitation Act (29 United States Code 794). The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

The following discussion is based upon the Traffic Operations Analysis Report, prepared for the project in July 2019. Level of service D is the threshold for acceptable operation of intersections and roadways used in this analysis and is based on Caltrans Traffic Operations staff and the *City of Tracy General Plan*.

The study area consists of I-580 from Corral Hollow Road to the I-580/International Parkway Interchange, International Parkway from I-580 to the intersection with Schulte Road, and Patterson Pass Road to the end of the proposed improvements south of I-580. Four intersections and five mainline segments were selected to be analyzed for the transportation and traffic study.

Table 1-1 shows the level of service under existing conditions for each existing study intersection during the morning and evening peak hours. The traffic analysis determined that three of the four intersections operate at an

unacceptable level of service. Unacceptable levels of service currently exist at International Parkway/Schulte Road and International Parkway/I-580 Westbound Ramps during morning peak hours, and at Patterson Pass Road/Frontage Road during evening peak hours.

All freeway segments operate at acceptable level of service (see Table 1-2).

Currently, there are no formal bicycle facilities in the study area. Most of the study area does not have formal sidewalks. The California Aqueduct Trail, a Class 1 Multiuse path is about 0.5 mile south of the project area.

No pedestrians or bicyclists were observed in the study area during weekday morning or evening peak hours. However, as development occurs in the *Cordes Ranch Specific Plan* area, the number of pedestrians and bicyclists is projected to increase.

No bus lines run along the project roadways.

Environmental Consequences

Effects of the Build Alternative

Under the Build Alternative, in construction year 2023, all but one of the study intersections would operate at acceptable level of service during both morning and evening peak hours. The International Parkway/Schulte Road intersection would improve from level of service F to level of service E during morning peak hours and from level of service F to level of service C in the evening peak hours (see Table 2.1.5-1 and Table 2.1.5-2). Implementation of the project would improve operations at all intersections in comparison with the No-Build conditions.

Table 2.1.5-1. Intersection Operations Construction Year 2023 (Level of Service)

Intersection (Control)—Movement	No-Build Morning Peak Hour Level of Service	No-Build Evening Peak Hour Level of Service	With Project Morning Peak Hour Level of Service	With Project Evening Peak Hour Level of Service
International Parkway/Schulte Road (Signal) Eastbound Left Turn	E	E	E	E
International Parkway/Schulte Road (Signal) Eastbound Through	F	E	F	E
International Parkway/Schulte Road (Signal) Eastbound Right Turn	E	B	D	B
International Parkway/Schulte Road (Signal) Westbound Left Turn	F	F	F	E
International Parkway/Schulte Road (Signal) Westbound Through	F	F	E	D
International Parkway/Schulte Road (Signal) Westbound Right Turn	F	F	C	B

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Intersection (Control)—Movement	No-Build Morning Peak Hour Level of Service	No-Build Evening Peak Hour Level of Service	With Project Morning Peak Hour Level of Service	With Project Evening Peak Hour Level of Service
International Parkway/Schulte Road (Signal) Northbound Left Turn	E	D	E	E
International Parkway/Schulte Road (Signal) Northbound Through	D	B	C	C
International Parkway/Schulte Road (Signal) Northbound Right Turn	B	A	A	B
International Parkway/Schulte Road (Signal) Southbound Left Turn	F	E	E	E
International Parkway/Schulte Road (Signal) Southbound Through	F	D	D	C
International Parkway/Schulte Road (Signal) Southbound Right	F	A	B	A
International Parkway/Schulte Road (Signal) Overall	F	F	E	C
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Left Turn	F	F	B	D
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Right Turn	D	A	A	B
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Left Turn	E	A	C	D
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Through	C	B	C	A
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Left Turn	F	F	C	A
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Right Turn	D	B	B	A
International Parkway/I-580 Westbound Ramps (Signal)— Overall	F	E	B	A
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Left Turn	F	F	C	C
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Right Turn	E	B	B	A
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Through	D	D	A	A
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Right Turn	A	C	A	A
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Left	A	D	A	A
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Through	B	E	A	A
International Parkway/I-580 Eastbound Ramps (Signal)— Overall	D	D	B	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	D	C	C	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Right Turn	C	A	B	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	B	F	B	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	A	F	A	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Through	A	A	A	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	A	A	A	A
Patterson Pass Road/Frontage Road (Side Street Stop)— Overall	A	F	A	A

Table 2.1.5-2. Intersection Operations Construction Year 2023 (Delay)

Intersection (Control)—Movement	No-Build Morning Peak Hour Delay (seconds)	No-Build Evening Peak Hour Delay (seconds)	With Project Morning Peak Hour Delay (seconds)	With Project Evening Peak Hour Delay (seconds)
International Parkway/Schulte Road (Signal) Eastbound Left Turn	77.8	62.6	79.1	67.7
International Parkway/Schulte Road (Signal) Eastbound Through	83.9	60.6	252.0	71.8
International Parkway/Schulte Road (Signal) Eastbound Right Turn	62.6	16.6	40.7	12.2
International Parkway/Schulte Road (Signal) Westbound Left Turn	677.2	911.2	178.1	60.4
International Parkway/Schulte Road (Signal) Westbound Through	307.9	224.1	60.3	54.2
International Parkway/Schulte Road (Signal) Westbound Right Turn	305.5	182.2	26.6	17.9
International Parkway/Schulte Road (Signal) Northbound Left Turn	73.3	45.6	67.6	60.4
International Parkway/Schulte Road (Signal) Northbound Through	39.7	19.8	33.5	30.2
International Parkway/Schulte Road (Signal) Northbound Right Turn	12.4	9.5	8.5	10.1
International Parkway/Schulte Road (Signal) Southbound Left Turn	287.5	57.8	70.1	56.5
International Parkway/Schulte Road (Signal) Southbound Through	660.2	43.1	42.9	25.6
International Parkway/Schulte Road (Signal) Southbound Right Turn	640.5	7.7	17.8	8.0
International Parkway/Schulte Road (Signal) Overall	440.5	147.5	76.5	33.8
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Left Turn	188.1	330.8	18.3	37.1
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Right Turn	50.0	7.6	6.1	13.5
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Left Turn	71.3	5.9	34.3	35.6
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Through	27.1	10.1	29.6	8.5
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Left Turn	199.9	196.2	22.5	5.5
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Right Turn	43.5	14.6	16.2	5.1
International Parkway/I-580 Westbound Ramps (Signal)—Overall	113.0	77.5	17.6	9.1
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Left Turn	154.1	82.8	31.4	29.7
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Right Turn	67.5	12.8	12.9	4.4
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Through	43.6	46.7	4.1	5.5
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Right Turn	7.8	33.5	1.8	3.7
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Left	9.6	48.1	8.3	3.9
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Through	19.1	70.0	7.3	3.7

Intersection (Control)—Movement	No-Build Morning Peak Hour Delay (seconds)	No-Build Evening Peak Hour Delay (seconds)	With Project Morning Peak Hour Delay (seconds)	With Project Evening Peak Hour Delay (seconds)
International Parkway/I-580 Eastbound Ramps (Signal)— Overall	41.9	47.6	10.6	6.5
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	27.4	20.8	21.6	4.8
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Right Turn	16.0	5.1	11.2	3.1
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	10.0	110.4	11.1	5.6
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	0.8	127.3	0.1	4.3
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Through	5.1	5.2	2.4	0.8
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	4.3	5.0	1.9	0.6
Patterson Pass Road/Frontage Road (Side Street Stop)— Overall	5.1	104.3	2.5	3.9

Under the Build Alternative, in construction year 2023, freeway operations would operate at acceptable level of service. The International Parkway diagonal on-ramp would worsen from level of service C to level of service D during morning peak hours but would still have an acceptable level of service (Table 2.1.5-3). Operations are projected to improve at the International Parkway diagonal off-ramp from level of service E to level of service C during morning peak hours and from level of service B to level of service A during evening peak hours.

Table 2.1.5-3. Freeway Operations Construction Year 2023

Location	Type	Morning Peak Hour Level of Service (No-Build)	Evening Peak Hour Level of Service (No-Build)	Morning Peak Hour Level of Service (Build)	Evening Peak Hour Level of Service (Build)
I-580 Westbound (Corral Hollow Road to International Parkway)	Basic	D	A	D	A
I-580 Westbound (International Parkway Diagonal Off-Ramp)	Diverge	E	B	C	A
I-580 Westbound (International Parkway Off-Ramp to On-Ramp)	Basic	C	A	C	A
I-580 Westbound (International Parkway Diagonal On-Ramp)	Merge	C	B	D	B
I-580 Westbound (International Parkway to I-205)	Basic	D	A	D	A

Location	Type	Morning Peak Hour Level of Service (No-Build)	Evening Peak Hour Level of Service (No-Build)	Morning Peak Hour Level of Service (Build)	Evening Peak Hour Level of Service (Build)
I-580 Eastbound (I-205 to Patterson Pass Road)	Basic	A	C	A	C
I-580 Eastbound (Patterson Pass Road Diagonal Off-Ramp)	Diverge	B	D	B	D
I-580 Eastbound (Patterson Pass Road Off-Ramp to On-Ramp)	Basic	A	C	A	C
I-580 Eastbound (Patterson Pass Road Diagonal On-Ramp)	Merge	B	E	B	D
I-580 Eastbound (Patterson Pass Road to Corral Hollow Road)	Basic	A	E	B	E

In 2043, with the projected build out of the *Cordes Ranch Specific Plan*, traffic volumes are expected to increase at all four intersections and freeway roadway segments compared with existing conditions (see Table 2.1.5-4, Table 2.1.1-5 and Table 2.1.5-6). Even with the projected volume increases, under the Build Alternative, three of the four intersections would operate at an acceptable level of service in Design Year 2043 during both morning and evening peak hours. The International Parkway/Schulte Road intersection would operate at level of service F during both morning and evening peak hours, although delays would be substantially shorter than under the No-Build Alternative.

Table 2.1.5-4. Intersection Operations Design Year 2043 (Level of Service)

Intersection (Control)—Movement	No-Build Morning Peak Hour (Level of Service)	No-Build Evening Peak Hour (Level of Service)	With Project Morning Peak Hour (Level of Service)	With Project Evening Peak Hour (Level of Service)
International Parkway/Schulte Road (Signal) Eastbound Left Turn	F	F	F	F
International Parkway/Schulte Road Eastbound Through	F	F	F	F
International Parkway/Schulte Road Eastbound Right Turn	F	D	F	D
International Parkway/Schulte Road Westbound Left Turn	F	F	F	F
International Parkway/Schulte Road Westbound Through	F	F	F	F
International Parkway/Schulte Road Westbound Right Turn	F	F	F	E
International Parkway/Schulte Road Northbound Left Turn	E	E	E	F

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Intersection (Control)—Movement	No-Build Morning Peak Hour (Level of Service)	No-Build Evening Peak Hour (Level of Service)	With Project Morning Peak Hour (Level of Service)	With Project Evening Peak Hour (Level of Service)
International Parkway/Schulte Road Northbound Through	D	C	D	F
International Parkway/Schulte Road Northbound Right Turn	B	B	C	D
International Parkway/Schulte Road Southbound Left Turn	F	F	F	F
International Parkway/Schulte Road Southbound Through	F	F	F	E
International Parkway/Schulte Road Southbound Right Turn	F	F	F	D
Overall	F	F	F	F
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Left Turn	F	F	C	C
International Parkway/I-580 Westbound Ramps (Signal)—Westbound Right Turn	D	F	C	C
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Left Turn	F	C	D	D
International Parkway/I-580 Westbound Ramps (Signal)—Northbound Through	E	C	D	E
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Left Turn	F	F	C	B
International Parkway/I-580 Westbound Ramps (Signal)—Southbound Right Turn	E	C	C	B
Overall	F	F	C	C
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Left Turn	F	F	D	D
International Parkway/I-580 Eastbound Ramps (Signal)—Eastbound Right Turn	F	F	C	A
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Through	F	D	A	B
International Parkway/I-580 Eastbound Ramps (Signal)—Northbound Right Turn	D	D	A	A
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Left Turn	B	C	C	A
International Parkway/I-580 Eastbound Ramps (Signal)—Southbound Through	C	E	B	B
Overall	F	F	C	B
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	F	C	F	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Right Turn	F	A	F	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	E	F	C	C
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	F	F	A	B
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Through	A	A	B	A
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	A	A	A	A
Overall	C	F	B	B

Table 2.1.5-5. Intersection Operations Design Year 2043 (Delay)

Intersection (Control)—Movement	No-Build Morning Peak Hour Delay (seconds)	No-Build Evening Peak Hour Delay (seconds)	With Project Morning Peak Hour Delay (seconds)	With Project Evening Peak Hour Delay (seconds)
International Parkway/Schulte Road (Signal)—Eastbound Left Turn	363.6	135.3	802.4	228.9
International Parkway/Schulte Road (Signal)—Eastbound Through	484.3	194.8	1048.4	340.3
International Parkway/Schulte Road (Signal)—Eastbound Right Turn	212.2	36.1	201.1	46.5
International Parkway/Schulte Road (Signal)—Westbound Left Turn	1333.3	2164.6	218.1	226.8
International Parkway/Schulte Road (Signal)—Westbound Through	744.0	1417.5	360.0	95.1
International Parkway/Schulte Road (Signal)—Westbound Right Turn	774.7	1430.1	371.8	79.6
International Parkway/Schulte Road (Signal)—Northbound Left Turn	73.2	58.5	78.9	178.4
International Parkway/Schulte Road – Northbound Through	36.3	25.3	49.8	121.2
International Parkway/Schulte Road (Signal)—Northbound Right Turn	15.3	10.0	20.5	52.9
International Parkway/Schulte Road (Signal)—Southbound Left Turn	1002.6	646.5	271.1	341.1
International Parkway/Schulte Road (Signal)—Southbound Through	1498.6	1038.7	442.6	66.4
International Parkway/Schulte Road (Signal)—Southbound Right Turn	1526.1	1023.0	438.7	36.1
International Parkway/Schulte Road (Signal)— Overall	924.6	814.1	278.4	148.3
International Parkway/I-580 Westbound Ramp (Signal)—Westbound Left Turn	146.8	467.2	33.6	33.6
International Parkway/I-580 Westbound Ramp (Signal)—Westbound Right Turn	35.5	80.8	32.8	34.8
International Parkway/I-580 Westbound Ramp (Signal)—Northbound Left Turn	84.2	20.7	47.6	40.0
International Parkway/I-580 Westbound Ramp (Signal)—Northbound Through	71.1	20.3	45.4	59.8
International Parkway/I-580 Westbound Ramp (Signal)—Southbound Left Turn	313.2	186.8	30.1	16.5
International Parkway/I-580 Westbound Ramp (Signal)—Southbound Right Turn	61.8	24.4	26.2	12.9
International Parkway/I-580 Westbound Ramp (Signal)— Overall	119.6	117.5	32.7	33.2
International Parkway/I-580 Eastbound Ramp (Signal)—Eastbound Left Turn	341.0	350.1	50.1	54.0
International Parkway/I-580 Eastbound Ramp (Signal)—Eastbound Right Turn	242.4	222.9	21.2	5.9
International Parkway/I-580 Eastbound Ramp (Signal)—Northbound Through	94.7	53.4	6.5	15.5
International Parkway/I-580 Eastbound Ramp (Signal)—Northbound Right Turn	40.1	37.3	2.3	6.2
International Parkway/I-580 Eastbound Ramp (Signal)—Southbound Left Turn	18.9	33.0	21.6	5.5
International Parkway/I-580 Eastbound Ramp (Signal)—Southbound Through	25.1	68.4	11.8	13.2

Intersection (Control)—Movement	No-Build Morning Peak Hour Delay (seconds)	No-Build Evening Peak Hour Delay (seconds)	With Project Morning Peak Hour Delay (seconds)	With Project Evening Peak Hour Delay (seconds)
International Parkway/I-580 Eastbound Ramp (Signal)— Overall	91.5	93.7	24.8	14.8
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Left Turn	173.6	18.3	191.3	6.4
Patterson Pass Road/Frontage Road (Side Street Stop)—Eastbound Right Turn	92.7	5.0	76.8	2.7
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Left Turn	41.0	189.3	22.8	16.1
Patterson Pass Road/Frontage Road (Side Street Stop)—Northbound Through	50.0	224.7	0.4	13.0
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Through	4.8	4.7	10.8	1.1
Patterson Pass Road/Frontage Road (Side Street Stop)—Southbound Right Turn	2.0	3.4	9.5	1.7
Patterson Pass Road/Frontage Road (Side Street Stop)— Overall	16.8	167.7	11.0	10.5

Under Build and the No-Build conditions, in design year 2043, freeway operations would not be at acceptable levels of service, particularly during morning peak hours on westbound I-580 and during evening peak hour on eastbound I-580, when all locations would operate at level of service F.

Level of service would improve during evening peak hours at the International Parkway diagonal off-ramp. All locations of westbound I-580 would operate at an acceptable level of service during evening peak hours, as would all locations of eastbound I-580 during morning peak hours (Table 2.1.5-6).

Table 2.1.5-6 Freeway Operations Design Year 2043

Location	Type	Morning Peak Hour Level of Service (No-Build)	Evening Peak Hour Level of Service (No-Build)	Morning Peak Hour Level of Service (Build)	Evening Peak Hour Level of Service (Build)
I-580 Westbound (Corral Hollow Road to International Parkway)	Basic	F	B	F	B
I-580 Westbound (International Parkway Diagonal Off-Ramp)	Diverge	F	C	F	A
I-580 Westbound (International Parkway Off- to On-Ramp)	Basic	F	A	F	A
I-580 Westbound (International Parkway Diagonal On-Ramp)	Merge	F	B	F	B
I-580 Westbound (International Parkway to I-205)	Basic	F	B	F	B

Location	Type	Morning Peak Hour Level of Service (No-Build)	Evening Peak Hour Level of Service (No-Build)	Morning Peak Hour Level of Service (Build)	Evening Peak Hour Level of Service (Build)
<i>I-580 Eastbound</i> (I-205 to Patterson Pass Road)	Basic	B	F	B	F
<i>I-580 Eastbound</i> (Patterson Pass Road Diagonal Off-Ramp)	Diverge	B	F	B	F
<i>I-580 Eastbound</i> (Patterson Pass Road Off- to On-Ramp)	Basic	A	F	A	F
<i>I-580 Eastbound</i> (Patterson Pass Road Diagonal On-Ramp)	Merge	B	F	B	F
<i>I-580 Eastbound</i> (Patterson Pass Road to Corral Hollow Road)	Basic	B	F	B	F

Under the Build Alternative, the existing Patterson Pass Road overcrossing would be widened to the east to accommodate three 14-foot northbound lanes, two 14-foot southbound lanes, 6-foot outside and inside shoulders, and a 15-foot multiuse (bicycle and pedestrian) path in the middle of the overcrossing. Therefore, there would be a beneficial effect related to pedestrian and bicycle facilities.

The proposed project would result in temporary traffic delays during construction, however, implementation of a Transportation Management Plan would minimize these impacts.

Standardized Measures

As part of construction, a Transportation Management Plan would be prepared to address traffic impacts related to staged construction, lane closures, and, if applicable, detours. At a minimum, the Transportation Management Plan would detail the procedure for conducting outreach and notification to publicize planned disruptions or delays, and for the use of portable message signage. The plan would require coordination with emergency service providers.

Effects of the No-Build Alternative

The effects under the No-Build Alternative are shown in Table 1-1, Table 1-2, and Table 2.1.5-1 through Table 2.1.5-6.

Without the project, in construction year 2023 three of the four existing intersections would worsen to unacceptable levels of service. In design year 2043, all four existing intersections would worsen to unacceptable levels of service, as presented in Table 2.1.5-1 and Table 2.1.5-4, respectively. In both construction and design year, International Parkway/Schulte Road would

remain at level of service F during the morning peak hours and would worsen to an unacceptable level of service during evening peak hours.

Levels of service for morning and evening peak hours would worsen to level of service F at the International Parkway/I-580 westbound ramps. Level of service during the morning peak hours for Patterson Pass Road/Frontage Road would remain at an acceptable level of service but would worsen during the evening peak hours.

In 2023, level of service on one mainline segment (International Parkway diagonal off-ramp) would decrease to unacceptable conditions in the morning peak hours (see Table 2.1.5-3). By 2043, all westbound segments would operate at level of service F during the morning peak hours and all eastbound segments would operate at level of service F during the evening peak hours (see Table 2.1.5-6).

There would be no construction under the No-Build Alternative and, therefore, no construction-related traffic effects would result.

Avoidance, Minimization, and/or Mitigation Measures

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

2.1.6 Visual/Aesthetics

Regulatory Setting

The NEPA of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration, in its implementation of NEPA (23 United States 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.

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

Affected Environment

The following discussion is based upon the Visual Impact Assessment completed for the project in October 2019.

Existing Visual Character

The project location and setting provide the context for determining the type and severity of changes to the existing visual environment. The proposed project is at the I-580/International Parkway Interchange in San Joaquin County, California. The project is in the northern part of the San Joaquin Valley. The project corridor is defined as the area of land that is visible from, next to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance. The proposed project is in a non-urbanized area and land uses within the corridor are primarily agriculture, industrial, and transportation. The landscape of the project corridor is characterized by gently rolling terrain on either side of I-580 that is vegetated with weedy grasslands and three mature pepper trees south of the I-580 westbound off-ramp to International Parkway.

Industrial areas along International Parkway and Schulte Road are located to the east, and the ARP Mini-Mart gas station is on Patterson Pass Road directly west of the existing interchange. A rural residence is 0.5 mile to the northwest, and the Musco Family Olive Company factory is 0.5 mile to the southwest of the project study area. The remainder of the lands surrounding the interchange are agricultural. Current lighting in the project study area is associated with the existing development, overhead lighting and traffic lights along International Parkway/Patterson Pass Road at the on-ramps and off-ramps, and local street lighting along International Parkway and Schulte Road. The California Aqueduct, wind turbines, and large lattice steel transmission line towers are common visible elements in the project study area. Views of the Diablo Range and Black Hills are a prominent focal point in the project study area. Scenic vista views of the Diablo Range and Black Hills are available from the International Parkway/Patterson Pass Road bridge over I-580.

Caltrans' 2017 *List of Eligible and Officially Designated State Scenic Highways* identifies that I-580 is an officially designated state scenic route within the project study area that is protected for its scenic resources.

Affected Viewer Groups

Neighbors (people with views to the road) and highway users (people with views from the road) would not be affected by the proposed project. Neighbors include the rural residents in the project vicinity; agricultural, industrial, and ARP Mini-Mart gas station workers; and recreationists walking, jogging, or cycling along International Parkway/Patterson Pass Road. Highway users include roadway users on International Parkway/Patterson Pass Road and I-580. The primary viewers with extended viewing times that would be affected by the proposed project would be workers at the ARP Mini-Mart gas station. Because the project would result in only minor changes, neighbors would not be substantially affected by the project and would have low visual sensitivity. Workers have intermittent views of the project area

when not focused on work activities, but the minor changes would not negatively affect workers. During the September 6, 2017 site visit, the owner of the ARP Mini-Mart gas station orally expressed support for the project. Therefore, the owner and workers at the gas station are likely to have low visual sensitivity to changes resulting from the proposed project. Recreationists, who see the project area for short periods of time and in passing, are likely to view changes to the visual environment with higher sensitivity because views are often enjoyed while recreating. However, like area workers, the minor changes would not negatively affect recreational viewers that are likely to have low visual sensitivity to changes resulting from the proposed project. Therefore, the neighbor viewer group response is low.

Highway users would be in contact with the project area for short periods and in passing. Roadways users on International Parkway/Patterson Pass Road can take in brief views of the surrounding landscape, but they are focused on approaching and traveling over the bridge, obeying traffic signals, turning onto freeway ramps, and observing the surrounding traffic. Roadways users on I-580 can take in momentary, quick views as they pass the interchange at high speeds. Because of the minor changes associated with the proposed project, roadway users are considered to have low viewer response. It is expected that the average response of all viewer groups would be low.

Environmental Consequences

Effects of the Build Alternative

The proposed project falls within a non-urbanized area and, therefore, would not conflict with applicable zoning and other regulations governing scenic quality associated with an urbanized area.

Existing Visual Character or Quality of Public Views in Non-Urbanized Areas, Including Scenic Vistas

The project would entail widening the existing bridge structure, widening the eastbound off-ramp, widening and shifting the eastbound on-ramp that is west of I-580 slightly more west to accommodate the diverging diamond interchange, relocating the private access road connection to Patterson Pass Road, widening and shifting the ramps that are east of I-580 slightly more east to accommodate the diverging diamond interchange, and completing other minor roadway and intersection improvements within the existing right-of-way. These changes would have minimal effects on viewers at the surrounding properties. Much of the bridge widening would be east of the existing bridge. One of the mature pepper trees south of the westbound off-ramp would need to be removed to accommodate the widened overcrossing, but the other two would not be affected by the project. The proposed project would widen roadways into vacant lands and mostly affect low-lying, grassy vegetation. The ARP Mini-Mart gas station would not be affected by the project. The private access road would need to be relocated because of the eastbound off-ramp widening and realignment. Under the Build Alternative,

the private access road would connect to Patterson Pass Road by skirting around the back of the ARP Mini-Mart and connecting to the road west of the gas station. This would give the private access road a safer connection to Patterson Pass Road compared with being located immediately near the off-ramp. The relocated access road would cross grasslands and would not affect visual resources.

The widened bridge structure would visually match the existing bridge structure; the larger size of the bridge would result in only minor alterations to the visual landscape. These changes would only be apparent from locations immediately near the bridge and would not affect views from I-580 because the widened bridge structure would retain the visual character of the existing bridge. Widening the roadway and ramps would result in minor landform alterations along the ramp and road shoulders. The proposed project would not affect views associated with the California Aqueduct.

Improvements to the highway must comply with Caltrans' 2016 *Highway Design Manual*, which uses Context Sensitive Solutions consistent with the 2001 Director's Policy memorandum DP-22. This approach includes implementing Design Standards 304.1, *Side Slope Standards*; 304.4, *Contour Grading and Slope Rounding*; and 902.1, *Design Considerations, Aesthetics*. These design standards require that slopes be graded to 4:1 or flatter; that slopes be gentle, smooth, and well transitioned with slope rounding and topsoil replacement; that slopes have flowing contours that tie gracefully into the existing adjacent roadside and landforms; and that steep, obvious cuts and fills be avoided to improve project aesthetics associated with roadside slopes. These design standards require that replanting reflect adjacent communities and natural surroundings to soften visual impacts associated with graded slopes. The proposed project would comply with these standards. Compliance with these *Highway Design Manual* design standards would help to minimize visual impacts associated with roadside grading, slopes, and revegetating exposed slopes and would reduce impacts on the views associated with the interchange.

Scenic vista views of the Diablo Range and Black Hills from the International Parkway/Patterson Pass Road bridge over I-580 would not be altered in any way.

To minimize visual effects associated with project construction, Caltrans' *Highway Design Manual* design standards would be implemented, and no additional avoidance, minimization, or mitigation measures would be needed. Changes associated with the project would be in keeping with the existing visual environment associated with the existing transportation facilities, as seen by all viewer groups at all locations, and would not have a substantial visual effect on these viewers.

Scenic Roadways

As described under *Regulatory Setting*, I-580 is an officially designated state scenic route within the project study area worthy of protection for maintaining and enhancing scenic viewsheds. There are no city-eligible or county-eligible scenic corridors that are close enough to be affected by the proposed project.

Changes associated with the proposed project would have minimal effects on viewers at the surrounding properties, as described above under *Existing Visual Character or Quality of Public Views in Non-Urbanized Areas, Including Scenic Vistas*. Much of the bridge widening would be east of the existing bridge. The project would widen the roadways into vacant lands and mostly affect low-lying, grassy vegetation, and only one of the three mature pepper trees would need to be removed. The ARP Mini-Mart gas station would not be affected by the project. The relocated private access road would connect to Patterson Pass Road by skirting around the back of the ARP Mini-Mart and connecting to the road west of the gas station. This relocation would move the private access road away from the I-580 off-ramp and give the private access road a safer connection to Patterson Pass Road. The relocated access road would cross grasslands and would not affect visual resources seen from the I-580 off-ramp.

The widened bridge structure would visually match the existing bridge structure; the larger size of the bridge would result in only minor alterations to the visual landscape. These changes would only be apparent from locations immediately near the bridge and would not affect the scenic route because the widened bridge structure would retain the visual character of the existing bridge and would not detract from views from the scenic route. Widening the roadway and ramps would result in minor landform alterations along the ramp and road shoulders. The proposed project would not affect views associated with the California Aqueduct that are available from the scenic route.

As described above, improvements to the highway must comply with Caltrans *Highway Design Manual* standards, which would help minimize visual impacts associated with roadside grading, slopes, and revegetating exposed slopes and which would reduce impacts on the views associated with the interchange.

To minimize visual effects associated with project construction, Caltrans *Highway Design Manual* design standards would be implemented, and no additional avoidance, minimization, or mitigation measures would be needed. Changes associated with the project would be in keeping with the existing visual environment associated with the existing scenic route, as seen by highway users, and would not have a substantial visual effect on these viewers.

Light and Glare

Minimal nighttime construction is proposed, primarily for placement of k-rails for stage construction and limited demolition operations over I-580. These construction activities would require the use of extremely bright lights. However, Section 7-1.04 of Caltrans' 2015 Standard Specifications requires that temporary illumination be installed in a manner that the illumination and the illumination equipment do not interfere with public safety. Therefore, the city of Tracy, working with contractors, would make sure that no lighting is aimed towards homes and businesses or aimed in a manner that would affect roadway users traveling at night. The existing sources of permanent nighttime lighting would be slightly increased due to lighting and signalization of the additional bridge lanes at the ramps. However, this additional lighting would be minor and would result in a negligible increase in nighttime lighting. The amount of new pavement that would be introduced would be minor and would result in a negligible increase in daytime glare that would not be perceptible.

Effects of the No-Build Alternative

Under the No-Build Alternative, the proposed project would not be constructed and there would be no impacts on the existing visual character, visual quality, or affected viewer groups. However, if the project is not implemented, it is likely that an increase in traffic back-ups on International Parkway/Patterson Pass Road and the I-580 ramps would be visible due to population increases and expansions in residential and industrial development in the surrounding area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization or mitigations would be necessary.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

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

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.

- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

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

National Flood Insurance Program

In response to the increasing cost of disaster relief, Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The Federal Emergency Management Agency administers the Flood Disaster Protection Act to provide subsidized flood insurance to communities that comply with federal regulations to limit development in floodplains. A flood insurance rate map is an official map of a community prepared by the Federal Emergency Management Agency. It is used to delineate both the special flood hazard areas and the flood-risk premium zones that are applicable to the community.

Senate Bill 5 and the Central Valley Flood Protection Plan

Senate Bill 5 of 2007 enacted the Central Valley Flood Protection Act. Under this act, the California Department of Water Resources and the Central Valley Flood Protection Board requires the preparation and adoption of a Central Valley Flood Protection Plan. The plan mandates a 200-year level of flood protection as the minimum level of protection for urban areas. Senate Bill 5 also requires deadlines for cities and counties in the Central Valley to amend their general plans and their zoning ordinances to conform to the Central Valley Flood Protection Plan.

The Central Valley Flood Protection Plan proposes a “systemwide investment approach” for integrated, sustainable flood management in areas protected by facilities of the State Plan of Flood Control. The 2012 Central Valley Flood Protection Plan fulfills the intent and requirements of the Central Valley Flood Protection Act. The adopted plan must be updated every five years beginning in 2017. The 2017 plan update refines the overall near-term and long-term investment needs established in the plan and includes recommendations on policies and financing to support comprehensive flood risk management actions locally, regionally, and system-wide.

Affected Environment

The following discussion is based upon the Water Quality Assessment Report completed for the project in December 2019.

The project area is outside of the 100-year floodplain. The project area falls in Federal Emergency Management Agency Zone X (unshaded). Zone X

(unshaded) areas have minimal flood hazard and are usually shown on flood insurance rate maps as above the 500-year flood level.

Environmental Consequences

Effects of the Build Alternative

Construction Effects

Project construction activities may temporarily alter existing drainage patterns and result in temporary increases in the rate or amount of local surface runoff (onsite) and temporary flooding. Prior to rain, construction best management practices as identified in the stormwater pollution prevention plan would be in place to reduce temporary flooding. The proposed drainage would be similar to the existing drainage, with runoff directed by a combination of new and existing pipes, drainage inlets, and other storm drain facilities. The existing drainage pattern would be maintained, with flows draining into these ditches and channels. Drainage would ultimately be improved because the project would result in new drainage infrastructure and connections to the existing storm drain system that serves the site.

Operational Effects

As part of the proposed project, new drainage ditches and pipe culverts would be installed, and the existing cross culverts would be extended. New drainage inlet systems are also proposed along International Parkway/Patterson Pass Road to capture roadway runoff. The project would maintain the existing drainage pattern and no runoff from the proposed project would discharge to the California Aqueduct, Delta-Mendota Canal, or to irrigation waterways.

New impervious surfaces can increase the volume and rate of surface runoff. An increase of 7.14 acres of impervious surface area would result from the interchange improvements. Potential new surface flows from the project would be designed to be similar to pre-project flows, and the project area's existing drainage patterns would be maintained. Increases in stormwater flow volumes would be managed by directing flow to a combination of new and existing pipes, drainage inlets, and other storm drain facilities.

To address additional flows from the additional impervious surface and to ensure that the proposed project does not exceed existing flow conditions, the project would include stormwater runoff best management practices to collect and retain or detain the additional flows within the project area, as required by the Caltrans Municipal Separate Storm Sewer System permit and Statewide Storm Water Management Plan. Additional biofiltration swales, biofiltration strips or detention basins located in the area between the ramps and I-580 would treat additional runoff from the new impervious surface. The project would be designed in accordance with the objectives of Caltrans Municipal Separate Storm Sewer System permit requirements and related stormwater requirements to reduce runoff.

The proposed drainage would be similar to the existing drainage, with dikes directing runoff to overside drains or to simple drainage networks that outfall in roadside ditches. The existing drainage pattern would be maintained, with flows draining into these ditches and channels that discharge to the two unnamed water bodies crossing I-580. To minimize increases in flow downstream of the project area, three detention basins are proposed to reduce stormwater flows exiting the roadway.

FLOODING

The project area is in an area of minimal flood hazard, outside of the 100-year floodplain or a floodway. Floodplain encroachment is not expected. A drainage plan would be submitted for approval by Tracy for onsite measures consistent with the Tracy's Storm Water Management Program and other applicable stormwater standards and requirements. Drainage facilities would accommodate events up to and including a 100-year 24-hour storm. To treat runoff from additional new impervious surface, the project would have biofiltration swales, biofiltration strips, or detention basins, which would reduce the volume of runoff entering the storm drainage system. New drainage structures would ultimately improve drainage patterns, and potential flooding would be no greater than existing conditions. The potential increase in impervious area would not cause on-site or off-site flooding.

Effects of the No-Build Alternative

Under the No-Build Alternative, there would be no construction and, therefore, no changes to the hydrology of the site or the floodplain.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of construction best management practices based on guidance from several resources, including the Caltrans Stormwater Quality Handbook and the Statewide Storm Water Quality Practice Guidelines, no avoidance, minimization, or mitigation measures are necessary.

2.2.2 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

The Clean Water Act makes the addition of pollutants to waters of the United States from any point source (any discrete conveyance such as a pipe or a human-made ditch.) unlawful unless the discharge complies with a National Pollutant Discharge Elimination System permit. The Clean Water Act also directs dischargers of stormwater from municipal, industrial and construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. The California State Water Resources Control Board and the Regional Water Quality Control Boards are responsible for ensuring implementation and compliance with the provisions of the Clean Water Act. The following are important Clean Water Act sections.

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

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

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

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

Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the United States. Every permit from the United States Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practical alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California’s Porter-Cologne Act provides the legal basis for water quality regulation within California. This act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for State surface or groundwater resources. Waters of the state include groundwater and surface waters not considered waters of the United States. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements, which may be required even when the discharge is already permitted or exempt under the Clean Water Act. The California State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act and are included in the applicable Regional Water Quality Control Board Basin Plan. In California, Regional Water Quality Control Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses.

Water quality in surface and groundwater bodies is regulated by the California State Water Resources Control Board and the Regional Water Quality Control Boards. The project site is under the jurisdiction of the Central Valley Regional Water Quality Control Board. The Central Valley Water Board implements the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins, a master policy document for managing water quality in the region. The Basin Plan specifies the beneficial uses that apply to the project area. Once beneficial uses are designated, appropriate water quality objectives can be established, and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. The water quality standards developed for particular water segments are based on the designated use and vary depending on that use. The California State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (National Pollution

Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of total maximum daily loads. Total maximum daily loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer System Permit

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

Projects disturbing less than 1.0 acre are covered by Caltrans Statewide Municipal Separate Storm Sewer System National Pollutant Discharge Elimination System permit. Caltrans projects that create at least 1 acre of new impervious surface are subject to post-construction treatment control requirements of the Caltrans Municipal Separate Storm Sewer System permit. The Caltrans Municipal Separate Storm Sewer System permit, National Pollutant Discharge Elimination System No. CAS000003, California State Water Resources Control Board Order No. 2012-0011-DWQ, as amended by Order No. 2014-0006-EXEC, Order No. 2014-0077-DWQ, and Order No. 2015-0036-EXEC, contains three basic requirements.

1. Caltrans must comply with the requirements of the Construction General Permit (see below).
2. Caltrans must implement a year-round program in all parts of the state to effectively control storm water and non-storm water discharges.
3. Caltrans stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) best management practices to the maximum extent practicable, and other measures deemed necessary by the California State Water Resources

Control Board or other agency having authority for reviewing the stormwater component of a project.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Storm Water Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges, and outlines procedures and responsibilities for protecting water quality, including the selection and implementation of best management practices. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest Storm Water Management Plan.

Construction General Permit

Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2012-0006-DWQ) issued by the California State Water Resources Control Board regulates stormwater discharges from construction sites that have a disturbed soil area of 1 acre or greater. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity, as determined by the Regional Water Quality Control Boards. Operators of regulated construction sites are required to develop stormwater pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

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

Waste Discharge Requirements

All projects resulting in discharges, whether to land or water, are subject to Section 13260 of the California Water Code. Section 13260 states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state, other than into a community sewer system, shall file a Waste Discharge Requirement from the appropriate Regional Water Quality Control Board. The Regional Water Quality Control Board issues

Waste Discharge Requirements in lieu of a Section 401 Water Quality Certification for activities such as dredging or filling that impact waters of the state that are not also waters of the United States. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

The California State Water Resources Control Board issued Water Quality Order No. 2004-0004-DWQ, which established statewide general waste discharge requirements for projects that involve dredge or fill discharges of (1) less than 0.2 acre and 400 linear feet of fill and excavation discharges, and (2) not more than 50 cubic yards of dredging discharges. Projects that exceed the general waste discharge requirement thresholds are authorized under a standard waste discharge requirement, which requires approval by the Regional Water Quality Control Board.

Waste Discharge Requirements for Dewatering and Other Low-Threat Discharges to Surface Waters

Although small amounts of construction-related dewatering are covered under the Construction General Plan, the Central Valley Water Board has also adopted a general dewatering permit, Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters (Low-Threat General Order) (Order R5-2013-0074). The Low-Threat General Order contains waste discharge limitations and prohibitions similar to those in the Construction General Permit. To obtain coverage, the applicant must submit a Notice of Intent and a Pollution Prevention and Monitoring and Reporting Plan to the Central Valley Water Board. The Pollution Prevention and Monitoring and Reporting Plan must include a description of the discharge location, discharge characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. For dewatering activities not covered by the Low-Threat General Order, an individual National Pollution Discharge Elimination System permit and Waste Discharge Requirements must be obtained from the Central Valley Water Board.

Low-threat discharges are regulated by the Central Valley Water Board under the regional Low-Threat General Order. Discharges covered by this Low-Threat General Order are either four months or less in duration or average less than 0.25 million gallons per day. A Notice of Intent and Report of Waste Discharge must be submitted to the Central Valley Water Board to comply with this Low-Threat General Order. Effluent limitations for all discharges are specified for several specific compounds including total suspended solids, murkiness, biological oxygen demand, oil and grease, settleable solids, and residual chlorine.

The Caltrans 2014 *Field Guide to Construction Site Dewatering* provides the Resident Engineer with step-by-step instructions for overseeing dewatering

operations on the construction site. All aspects of dewatering are addressed, from the selection of an appropriate dewatering management option to ensuring compliance with National Pollution Discharge Elimination System permit requirements for operations, maintenance, and reporting.

Regional and Local Requirements: Water Quality Control Plan

The proposed project lies within the jurisdiction of the Central Valley Water Board, which adopted the Fifth Edition of the *Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins* in 2018. The Central Valley Water Board uses planning, permitting, and enforcement authorities to meet the responsibility of adopting the Basin Plan to implement plans, policies, and provisions for water quality management. Beneficial uses are described in the Basin Plan and are designated for major surface waters and their tributaries, as well as for groundwater.

Affected Environment

The following discussion is based upon the Water Quality Assessment Report completed for the project in December 2019.

The project area is about 3 miles southeast of Mountain House Creek. Mountain House Creek (from Altamont Pass to Old River, Alameda and San Joaquin Counties; partly in Delta Waterways, southern portion) is impaired for chloride and salinity. The project site is about 5 miles south of the Old River. Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) is impaired for chlorpyrifos, electrical conductivity, low dissolved oxygen, and total dissolved solids. The California Aqueduct, and Delta-Mendota Canal are not listed on the Section 303(d) list of impaired water bodies. No beneficial uses are listed for the unnamed surface water bodies in the project area. Beneficial uses of California Aqueduct water include municipal and domestic water supply, agricultural supply, industrial process supply, industrial service water supply, hydropower generation, water contact recreation, noncontact water recreation, and wildlife habitat. Beneficial uses of Delta-Mendota Canal water include municipal and domestic water supply, agricultural supply, water contact recreation, noncontact water recreation, warm freshwater habitat, and wildlife habitat. Water quality objectives are specified for inland surface waters within the Sacramento-San Joaquin Delta and consist of numerical and/or narrative criteria, as specified in the Central Valley Water Board's Basin Plan.

The project area is in the Tracy Subbasin of the larger San Joaquin Valley Groundwater Basin. Groundwater within the basin is often of poor quality. Occasional zones of freshwater are also found in the Delta portion of the subbasin, but this portion of the subbasin generally contains poor quality groundwater. The 1961 as-built plan record showed no groundwater within 65 feet of the surface. However, in 2017 groundwater in the project area was documented between 20 and 40 feet, a historic high in the area.

The source of groundwater recharge influences groundwater quality. Generally, groundwater from Sierra Nevada runoff has lower concentrations of total dissolved solids and is found in some wells on the eastern side of the basin. Groundwater from Coast Ranges runoff can have varying water quality depending on the geology of the watershed. Runoff from watersheds dominated by the Franciscan Complex (mostly metamorphic rock) generally has low concentrations of total dissolved solids, whereas runoff from watersheds dominated by marine sedimentary deposits generally has high concentrations of total dissolved solids and sulfate. All groundwaters in the region are considered suitable or potentially suitable, at a minimum, for beneficial uses of municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

Environmental Consequences

This section discusses impacts on water quality that could result during construction and operation of the proposed project. Construction activities would include grading, paving, striping, material stockpiling and storage at staging areas, and installing new drainage ditches and inlets. Operation-related water quality impacts would primarily be related to vehicle use and maintenance activities along the roadway.

Effects of the Build Alternative

Construction Effects

Construction activities could result in temporary surface water and groundwater quality impacts. Temporary impacts could be associated with the input of sediment loads and soil erosion that exceed water quality objectives or chemical spills into storm drains or groundwater aquifers if proper minimization measures are not implemented. A typical construction site contains many chemicals or compounds including gasoline, oils, grease, solvents, lubricants, and other petroleum products. Land-disturbing activities and the placement of stockpiles close to storm drain inlets or nearby surface waters may result in a temporary increase in sediment loads in surface waters. The delivery, handling, and storage of construction materials and wastes (e.g., concrete debris), as well as the use of heavy construction equipment, could also result in stormwater contamination, thereby affecting water quality. Construction activities may involve the use of chemicals and operation of heavy equipment, which could result in accidental spills of hazardous materials (e.g., fuel and oil) during construction activities. Such spills could enter the groundwater aquifer or nearby surface water bodies from runoff or storm drains. Introduced pollutants or toxic chemicals have the potential to violate water quality standards or Waste Discharge Requirements.

Efforts would be made to conduct most land-disturbing work outside of the typical wet season, which would minimize the potential for large rains to mobilize loose sediment during construction. As part of compliance with the Construction General Permit, standard erosion and sediment control

measures and other housekeeping best management practices related to vehicle and equipment maintenance, material delivery and storage, and solid waste management would be identified in the stormwater pollution prevention plan. These measures would be implemented during construction to reduce contamination and sedimentation in waterways. Commonly practiced best management practices consist of a wide variety of measures, such as installing fiber rolls, that can be implemented to reduce soil erosion, pollutants in stormwater, and other non-point source runoff.

The stormwater pollution prevention plan would require the construction contractor to regularly inspect and maintain the best management practices to ensure they are in good working order. The contractor would implement appropriate hazardous material management practices, spill prevention, and other good housekeeping measures to reduce the potential for chemical spills or releases of contaminants, including any non-stormwater discharge to drainage channels. Implementation of these measures would minimize the potential for surface and groundwater contamination.

Potential water quality impacts from construction activities would be avoided or minimized because all construction activities within the ephemeral drainage would comply with permits and requirements from agencies, including those of the California State Water Resources Control Board, Central Valley Water Board, San Joaquin County, and the city of Tracy. Because the proposed project involves disturbance of more than 1 acre of land, compliance with the Construction General Permit would be required. Caltrans would implement construction best management practices based on guidance from several resources including the Caltrans *Stormwater Quality Handbook*. During construction, effective combinations of temporary and permanent erosion and sediment controls would be implemented. The project would also comply with all construction site best management practices specified in the stormwater pollution prevention plan.

Operational Effects

Long-term impacts are typically related to the addition of impervious surface and associated polluted surface runoff. A total area of 7.14 acres of additional impervious surface would result from the proposed interchange improvements. Stormwater runoff may contain sediment from soil erosion, oils and grease generated from motor vehicles, and heavy metals. However, the types of pollutants and pollutant sources related to vehicle use and roadway maintenance activities would be like existing conditions.

Long-term water quality impacts may also result from operation and maintenance activities, such as highway, overcrossing, and culvert maintenance and inspections. Heavy metals, oil, grease, and polycyclic aromatic hydrocarbons are common pollutants in road runoff. Roadside landscaping can also introduce pesticides and fertilizers; however, mobilization of these nutrients would be temporary. These and other

contaminants are conveyed by rainfall and enter storm drains or waterbodies or infiltrate shallow groundwater. Urban runoff from vehicles on bridges can be discharged into streams during rains and through normal usage and aging. However, runoff during heavy storms would cause these pollutants to be diluted.

Although the Old River (San Joaquin River to Delta-Mendota Canal; in Delta Waterways, southern portion) is impaired for low dissolved oxygen, the project drainage area is not hydrologically connected to the Old River and would not affect surface water quality in the Old River. The proposed project is unlikely to result in water quality impairments, including dissolved oxygen and temperature, at levels detrimental to aquatic life in other waterbodies in the project vicinity.

The proposed project would comply with the Caltrans Municipal Separate Sewer System permit and Storm Water Management Plan, and the San Joaquin County Storm Water Management Program. Caltrans would ensure that stormwater pollution during operation and maintenance of the project would be minimal by implementing post-construction best management practices for pollutant source control. Standard facilities used to handle stormwater onsite would be an array of structural elements or facilities that would serve to manage, direct, and convey the stormwater. Potential permanent treatment best management practices to treat runoff from the additional impervious area include biofiltration swales, biofiltration strips, or detention basins.

Because the project would create disturbed soil area, Caltrans Municipal Separate Storm Sewer System permit Provision E.2.d.1, Design Pollution Prevention Best Management Practices, is applicable to meet the post-construction treatment requirements for the project. Pollution prevention best management practices in Provision E.2.d would also be applicable, including landscape and soil-based best management practices such as providing compost-amended soils, and vegetated strips and swales, and conserving natural areas, including existing trees and stream buffer areas, to the extent feasible. However, under the Caltrans Municipal Separate Storm Sewer System permit, the project is not required to have post-construction stormwater treatment controls such as permanent design or structural features. The proposed biofiltration swales, biofiltration strips or detention basins would be capable of treating all the new impervious area created by the project.

After interchange improvements are complete, stormwater would be drained by a combination of new and existing pipes, drainage inlets, and other storm drain facilities. The new and improved drainage features would capture roadway runoff and minimize the potential for discharges of pollutants to nearby storm drainages and local canals. Caltrans is required to consider treatment best management practices because the project involves new

construction and the creation of more than 1 acre of new impervious area. Biofiltration swales and biofiltration strips would be designed carry runoff during a peak storm, and to reduce or avoid water quality impacts. The interchange improvements would also incorporate permanent erosion control elements, such as permanent vegetation, to ensure that stormwater runoff does not cause soil erosion.

Caltrans would ensure that stormwater pollution during operation and maintenance of the project would be minimal by implementing design measures recommended in Caltrans guidance documents and post-construction best management practices. Standard facilities used to handle stormwater onsite would include elements or facilities to manage, direct, and convey the stormwater. These would include biofiltration swales and biofiltration strips at feasible locations in the area between the ramps and I-580 that would be determined during the design phase. The design requirements for stormwater quality best management practices would be based on current Caltrans methodologies. Overall, post-construction runoff is not expected to have an adverse effect on water quality in comparison with existing conditions.

Effects of the No-Build Alternative

Under the No-Build Alternative, there would be no construction and, therefore, no potential to affect water quality because of construction. There would be no changes to impervious surfaces and, therefore, no changes to stormwater runoff or groundwater recharge.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of construction best management practices based on guidance from several resources, including the Caltrans Stormwater Quality Handbook and the Statewide Storm Water Quality Practice Guidelines, no avoidance, minimization, or mitigation measures are necessary.

2.2.3 Geology, Soils, Seismicity and Topography

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using Caltrans’s Seismic Design Criteria. The Seismic Design Criteria provides the minimum seismic requirements for highway bridges designed in California. A bridge’s category and classification will determine its seismic

performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Caltrans Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

The following discussion is based upon the Preliminary Geotechnical Report completed for the project in October 2019. To identify potential impacts within the project area, environmental databases and historical aerial photographs and maps were reviewed and a site visit was conducted.

Topography

The project site's topography is generally gently to moderately sloping to the east. The Patterson Pass overcrossing was constructed circa 1960 and includes cut and fill, with a graded incline of 2:1.

Regional Geology

The project site is in western San Joaquin County, in the westernmost stretches of Tracy's Sphere of Influence. The interchange sits on thousands of feet of alluvium transported from the Sierra Nevada and Coastal Range mountains and the Oro Loma foundation. The Oro Loma foundation is generally comprised of alluvial pebble conglomerate and interbedded sandstones and claystones. The alluvial gravel, sand, and clay that underlies the project area is itself underlain by the Oro Loma Foundation, which can occur at various depths below the project depending on the depth of the alluvium.

Seismicity

Ground shaking potential at the project site is moderate.

Faulting

The potential for surface rupture at the project site is very low. The site is not in an Alquist-Priolo Earthquake Fault Zone and the nearest active fault is over 1 mile to the northwest of the project site.

Tsunamis and Seiches

There is no risk of tsunami or seiche because the project site is not near an ocean or lake.

Soil and Groundwater Conditions

The groundwater table at the project site is relatively low. During rotary boring and cone penetration boring investigations, the water table was not encountered in the about 60-foot-deep bores. During a 2005 investigation; however, groundwater was encountered at about 40 feet below grade.

The soil found in the investigations were consistent with geological mapping for the area. Soil bores resulted in about 5 feet of loose or slightly compacted alluvium and would transition to formational sandstone or claystone with depth.

Liquefaction Potential

The project site's liquefaction potential is very low. The relatively low groundwater table and the hard sandstone and claystone-containing soils beneath the interchange result in a very small risk of liquefaction.

Environmental Consequences

Effects of the Build Alternative

The nearest active fault site is over 1 mile northeast of the project site. Impacts on workers or public due to surface rupture are not expected.

The ground-shaking potential for the project site is moderate. Future design-level geotechnical investigations and adherence to the Caltrans Highway Design Manual as well as the California Building Code would minimize any risk related to strong seismic shaking.

There is a very low potential for seismically induced ground failure, including liquefaction due to the gentle-sloping topography and sturdy foundation (including sandstone and claystone). Additional project components such as on-ramps would be built on soils that would be more susceptible to liquefaction than the existing interchange. The future design-level geotechnical investigation and final design of the interchange will need to acknowledge the risk of liquefaction and the project will need to be designed in a way to prevent liquefaction (such as soil replacement, or limestone treatment).

Due to the topography of the project site, there is no risk of landslides. Soil erosion measures will be implemented to avoid loss of topsoil.

Standardized Measures

The best management practices described in Section 2.2.1, Hydrology and Floodplains, and Section 2.2.2, Water Quality and Stormwater Runoff, would minimize erosion and the loss of topsoil.

MINIMIZE IMPACTS FROM SEISMIC EVENTS

To minimize potential impacts from seismic events, the project will be constructed in accordance with all applicable Caltrans standards and regulations and designed for the maximum credible earthquake. All construction activities will adhere to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

MINIMIZE SOIL INSTABILITY

To minimize the potential for soil instability from shrink-swell potential, soils with high shrink-swell potential will be compacted at the highest moisture content possible. In general, fill slopes should be compacted to 90 percent relative compaction and 95 percent at bridge approaches. If retaining walls are needed, support generally can be achieved within engineered fill for typical walls lower than about 15 feet high. Soil replacement, lime treatment, and post-tensioned foundations can be implemented to offset expansive soils.

Effects of the No-Build Alternative

Under the No-Build alternative, geological and seismic conditions of the project site would remain unchanged. The project area is not on or immediately near an active fault, the current interchange is not on an unstable soil type or geologic unit, and slopes are gentle and vegetated. No construction would take place and there would be no impacts related to geology or seismicity related to the project.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures that could be recommended in the Geotechnical Design Report to address the seismic and soil issues are described below.

Conduct Future Geotechnical Investigation

Additional subsurface exploration and laboratory testing will be conducted for project design. Once the final interchange design is complete, drilling and sampling will occur. The additional investigation will include the depth at which groundwater is encountered, soil depths, and collections of bulk and relatively undisturbed soil samples for laboratory testing. As new components of the interchange are built, the liquefaction potential of the alluvial material will need to be analyzed further in a design-level geotechnical investigation to ensure the interchange maintains its low liquefaction potential.

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

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

- 16 United States Code 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretary of the Interior or Secretary of Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.
- 23 United States 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 United States Code 431 through 433 above and state law. Under California law, paleontological resources are protected by CEQA.

Under California law, paleontological resources are protected by CEQA.

The California Public Resources Code also contains sections relevant to protection of paleontological resources. Section 5097.5 prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any “vertebrate paleontological site, including fossilized footprints,” on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur because of development on public lands. The sections of the California Administrative Code relating to the California Department of Parks and Recreation afford protection to geologic features and “paleontological materials” but grant the director of the state parks system authority to issue permits for specific activities that may result in damage to such resources, if the activities are in the interest of the state parks system and for state parks purposes (California Administrative Code 4307 through 4309).

Affected Environment

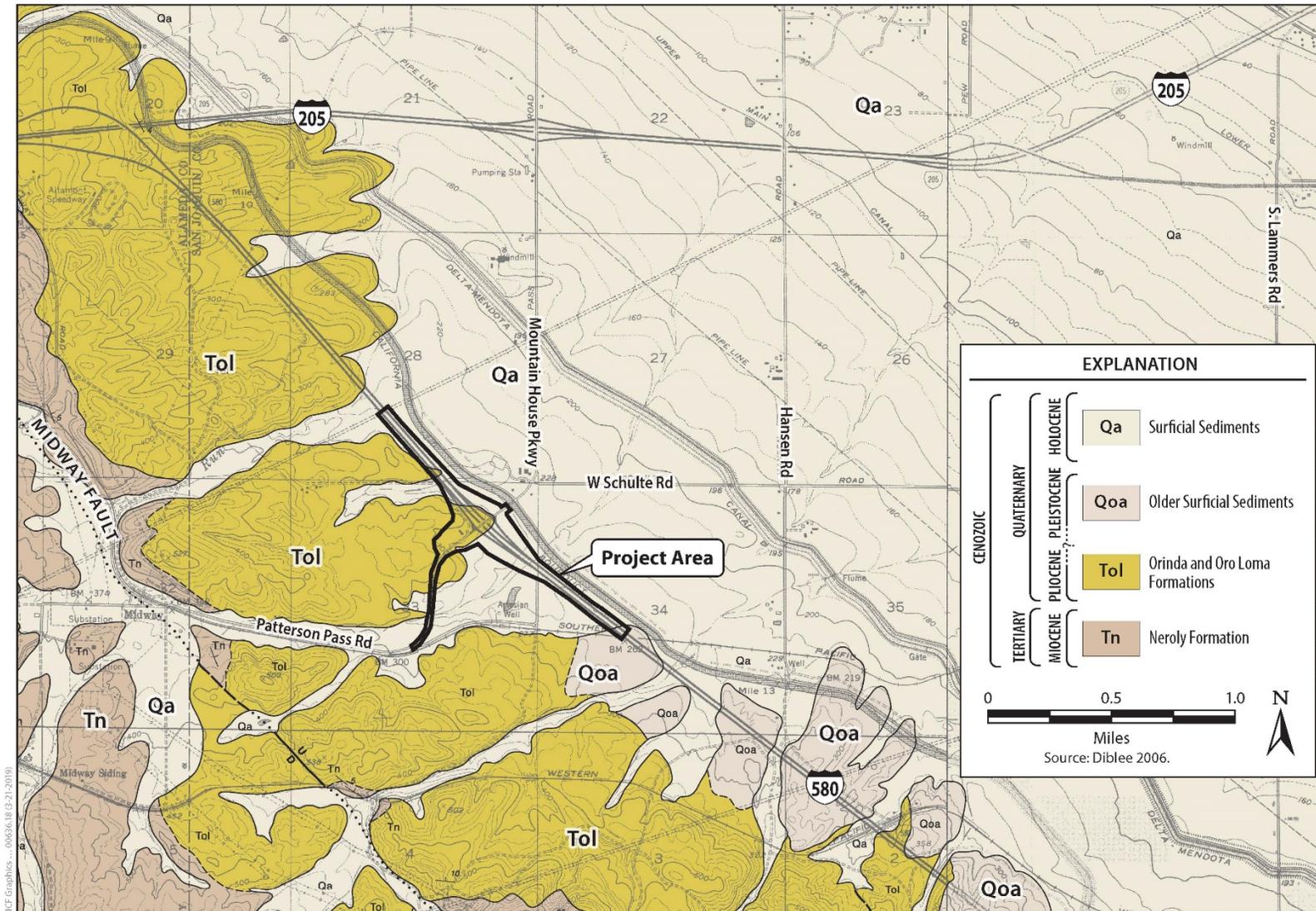
The following discussion is based on the October 2019 Paleontological Identification Report prepared for the project.

The project area is underlain by four units: artificial fill, which has no potential to contain paleontological resources; Holocene deposits, which have no potential to contain paleontological resources; deposits of Pleistocene age (underlying Holocene alluvial fan deposits), which are paleontologically sensitive; and the Pliocene to early Pleistocene and Oro Loma Formations, which are paleontologically sensitive (see Figure 2.2.4-1).

Artificial fill materials are extremely unlikely to contain fossil materials—fossil content in anthropogenic materials would be a fluke occurrence attributed to the source of the materials used as fill—and the fill deposits in the project area are accordingly evaluated as having no sensitivity for paleontological resources.

Holocene deposits (i.e., the surficial sediments/alluvial fan deposits) are not typically evaluated as paleontologically sensitive, because biological remains are not considered fossils unless they are older than 10,000 years. There may be site-specific exceptions to this general approach, but the University of California Museum of Paleontology database contains no records for fossil finds from Holocene units in San Joaquin County. Accordingly, the Holocene deposits that immediately underlie most of the project alignment are considered to have no sensitivity to low sensitivity for paleontological resources.

Figure 2.2.4-1. Geologic Map of the Project Area



The deposits of Pleistocene age underlying the Holocene alluvial fan deposits are generally considered to have high sensitivity for paleontological resources. California's Pleistocene non-marine strata have yielded a wealth of scientifically significant vertebrate fossils, including the assemblages that defined both the Rancholabrean and Irvingtonian Stages of the North American Land Mammal Chronology, which is used as a reference by paleontologists and stratigraphers across the country. Because of this wealth of information, continental deposits of Pleistocene age are almost universally treated as paleontologically sensitive in California. Demonstrating the potential for vertebrate finds in San Joaquin County Pleistocene units, the University of California Museum of Paleontology database lists 29 records of vertebrate finds in the county. These include horse (*Equus* sp.), mammoth/mastodon (*Mammuthus/Mammot* sp.), camel (*Camelops* sp.), bison (*Bison* sp.), and ground sloth (*Megalonyx* sp.).

The Pliocene to early Pleistocene Orinda and Oro Loma Formations likely have a high sensitivity for paleontological resources because of the large number of vertebrate fossils found in both Miocene and Pliocene deposits in the county. These include a variety of early horse species (*Equus*), rodent (*Protospermophilus*, *Peromyscus*), and rabbit (*Hypolagus*).

Environmental Consequences

Effects of the Build Alternative

Consistent with standard professional practice and Caltrans protocols, the project's potential to result in damage or loss of paleontological resources was evaluated based on preliminary project design, consideration of geology, and the paleontological sensitivity of the geologic units potentially affected by the project.

Although most of the project area occurs on artificial fill and other non-paleontologically sensitive units, ground disturbance throughout the project area could extend into the paleontologically sensitive Orinda and Oro Loma Formations, which is present at the ground surface or just below the artificial fill. Deposits of Pleistocene age, which can be found underlying the surficial sediments present in the project area, are also considered paleontologically sensitive. Excavation associated with construction of the project would have the potential to adversely affect paleontological resources, depending on the depth of excavation required for project construction; however, implementation of avoidance, minimization, and mitigation measures to stop work and prepare a Paleontological Evaluation Report and prepare and implement a Paleontological Mitigation Plan if necessary would reduce the severity of effects on paleontological resources; therefore, there would be no adverse effect.

Effects of the No-Build Alternative

Under the No-Build alternative, the project would not be built and there would be no construction-related effects on paleontological resources.

Avoidance, Minimization, and/or Mitigation Measures

Because ground disturbance during construction activities could disturb paleontological resources, the following avoidance, minimization, and mitigation measures would be implemented.

Comply with Caltrans Standard Specifications Section 14-7.

For all excavations, contractors would be required to implement the provisions of Caltrans Standard Specifications Section 14-7 that includes a work stoppage and appropriate follow-up if paleontological resources are encountered during project construction.

Write a Paleontological Evaluation Report and Prepare and Implement a Paleontological Mitigation Plan, If Needed.

Following the recommendation of the Paleontological Identification Report written for the proposed project, a Paleontological Evaluation Report would be written and (if necessary) a Paleontological Mitigation Plan would be developed for project implementation. If the Paleontological Evaluation Report determines there could be significant impacts on paleontological resources, a Paleontological Mitigation Plan would be required prior to the start of any construction activities. The paleontological monitoring plan would consist of preconstruction, construction, and post-construction mitigation. Examples of mitigation activities to be incorporated into the final Paleontological Mitigation Plan would include the following:

Pre-Construction Mitigation

Designate a Principal Paleontologist—A Principal Paleontologist would be contracted to develop a detailed mitigation plan and supervise the paleontological mitigation program.

Construction Mitigation

- Retain full-time and on-call paleontology monitors—One or more paleontology monitors would be contracted to monitor construction-related excavation. Two individuals would be contracted to be on call to assist in the salvage of large specimens or fossil concentrations.
- Make repository arrangements—The Principal Paleontologist would conduct preliminary discussions with potential repository institution(s) to determine their needs and requirements for permanent conservation.
- Conduct monitoring during qualifying excavation—A paleontology monitor would be onsite during periods in which excavation into paleontologically sensitive geologic units (e.g., the Modesto Formation) is expected.

Excavations into paleontologically sensitive geologic units extending more than 5 feet below the native soil surface are recommended for monitoring.

- Salvage specimens—Salvage of potentially significant specimens discovered in situ in excavated surfaces would be conducted by the monitor in compliance with all safety regulations and with the implementation of all feasible precautions.
- Stop work if significant resources are encountered—The monitor or Principal Paleontologist would have the authority to halt or redirect excavation operations in the event of the discovery of fossils.

Post-Construction Mitigation

- Prepare fossils according to repository agreement—Any potentially significant fossils recovered during the monitoring and salvage phase would be cleaned, repaired, and hardened to the level required by the repository institution and would be donated to that institution.
- Provide copies of field records to repository institution—Copies of all supporting field records, notes, maps, geologic sections, and photographs would be submitted to the repository institution in accordance with its policies.
- Prepare final report—The Principal Paleontologist would prepare a final report of the mitigation plan and its implementation and results and submit it to the appropriate parties, institutions, and government agencies.

2.2.5 Hazardous Waste and Materials

Regulatory Setting

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

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

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act

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

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact 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

The following discussion is based upon the Initial Site Assessment completed for the in December 2019.

The Phase 1 Initial Environmental Site Assessment performed between May 7 and 13, 2019, identified and evaluated potentially hazardous waste sites. The work included the following tasks:

- Site visit and visual inspection of the project footprint
- Review of previous environmental reports about the project site
- Review of site background, including historic and recent aerial photographs, topographic maps, and Sanborn maps
- Review of the government database of hazardous waste sites within a 1-mile radius

- Review of area hydrogeology
- Review of available agency records for the project site
- Preparation of a written report summarizing the records search results

The scope of work was limited to observation of the surface at a specific time and environmental database research. No other particular limitations are noted in the initial environmental site assessment, which was prepared in accordance with generally accepted environmental assessment practices.

Database Search

Environmental Data Resources, Inc. searched federal, state, and local environmental databases for the project area and properties/facilities within one mile of the project area. The ARP Mini-Mart Corporation/ARCO Station Number 6100 (current Mobil-branded gas station), 25775 South Patterson Pass Road is next to the project area. It is listed in the Environmental Data Resources, Inc. report for operation of underground storage tanks and petroleum hydrocarbon releases from underground storage tanks impacting soil and groundwater. Results from the 2019 report indicate that petroleum hydrocarbon concentrations are below the laboratory reporting limits in the shallow groundwater zone (about 42 to 61 feet below ground surface). Elevated petroleum hydrocarbons were detected in the deep groundwater zone (about 90 to 114 feet below ground surface) in wells located along the southeast shoulder of Patterson Pass Road. Based on the property's active status for oversight by the Central Valley Regional Water Quality Control Board and San Joaquin County Environmental Health Department (and its adjacent location), this property represents a high environmental risk within the project area.

Site Reconnaissance

The project site was inspected on May 13, 2019 to examine present land uses and look for indications of hazardous materials use, storage, generation, or spills. About 14 groundwater monitoring, vapor recovery, and air sparge well vault boxes associated with environmental investigation, monitoring, and remediation at the adjacent Mobil-branded gas station are present along the northern and southern edges of South Patterson Pass Road.

Aerially deposited lead can be found in the surface and near-surface soils along nearly all roadways due to the historical use of tetraethyl lead in motor vehicle fuels. Areas of primary concern are soils along routes that have had high vehicle emissions from large traffic volumes or congestion during the period when leaded gasoline was in use (generally prior to 1986). The I-580 transportation corridor has had extensive exposure to historical automotive vehicle emissions. The potential exists for elevated lead levels from aerially deposited lead to be present in shallow soil within the project area. Also, yellow thermoplastic and paint striping, potentially containing lead chromate, was observed on roadway surfaces within the project limits. It is possible that

asbestos-containing materials and lead containing paint may be present in bridge construction materials at the South Patterson Pass Road overcrossing. Evidence of other potentially hazardous waste impacts at the project area was not observed during the site reconnaissance.

Environmental Consequences

Effects of the Build Alternative

The initial environmental site assessment and site investigation report identified the following potentially hazardous materials/waste conditions:

- Groundwater impacted with total petroleum hydrocarbons gasoline from the adjacent leaking underground storage tank site at the Mobil gas station.
- About 14 groundwater monitoring, vapor recovery, and air sparge well vault boxes associated with environmental investigation, monitoring, and remediation at the adjacent Mobil gas station are present along the northwestern and southeastern edges of South Patterson Pass Road.
- Potential presence of aerially deposited lead in soils along the mainline highway.
- Potential presence of lead-based paint and asbestos containing materials in the existing facilities.

Ground-disturbing activity, including excavation, associated with construction of the project may result in the disturbance of contaminated soils, which could expose workers and the public to hazardous materials or wastes. This could pose a threat to human health.

Although construction is not expected to affect the ARP Mini-Mart gas station, associated monitoring wells may be within the construction area and could be disturbed by construction activities.

Effects of the No-Build Alternative

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

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measure would ensure that the health of workers and the public are protected during construction of the project.

Monitor Wells

Monitoring, vapor recovery, air sparge wells, including below grade vapor recovery piping, that would be impacted by the improvement project must be properly protected in place or abandoned in accordance with San Joaquin County Environmental Health Department requirements prior to construction activities that may impact the wells.

Implement Health and Safety and Soil Management Plans

Contractors will be required to work under a health and safety plan and soil management plan. These plans will be prepared to address worker safety when working with potentially hazardous materials, including potential asbestos containing materials, lead-based paint, soils potentially containing aurally deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans will provide for identification of potential hazardous materials at the work site and for specific actions to avoid worker exposure.

To prevent exposure of workers and the public to contaminated soils, requirements as detailed under the July 1, 2016 Aerially Deposited Lead Agreement between Caltrans and the Department of Toxic Substances Control Agreement will be followed. Surface soils from potentially contaminated areas will be screened and contaminated soils disposed of appropriately. The Aerially Deposited Lead Agreement allows such soils to be safely reused within the project limits as long as all requirements are met. Soil excavated from the surface to a depth of 1 foot can be reused within the Caltrans right-of-way if covered with at least 1 foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within the Caltrans right-of-way, then the excavated soil should be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

If soils are to be moved from a roadway-adjacent parcel to another parcel, before construction the project will conduct a preliminary investigation and screening for aerially deposited lead to assess levels in the surface and near-surface soils along the project alignment. If soils contain aerially deposited lead in excess of established thresholds, soils will be disposed of in a manner compliant with the San Joaquin County Certified Unified Program Agencies regulatory requirements. Because construction activities are planned on South Patterson Pass Road in areas with known petroleum hydrocarbon impacts on soil, soil sampling should be conducted to evaluate potential environmental impairments, and soil management/reuse and possible disposal requirements.

To protect workers and the public from lead exposure, pavement striping subject to construction disturbance or removal will be tested for lead-based

paints prior to disturbance or removal. All aspects of the proposed project associated with removal, storage, transportation, and disposal of yellow pavement striping will be in strict accordance with appropriate regulations of the California Health and Safety Code. Disposal of the stripes will be at a Class 1 disposal facility. The responsibility of implementing this measure will be outlined in the contract between the city of Tracy and its contractors.

To prevent exposure of workers and the public to asbestos and lead, a hazardous materials survey will be conducted prior to demolition or significant renovation of any structures. If lead or asbestos is found in these structures, an abatement plan will be developed prior to removal or renovation. The abatement plan will provide for a California-certified asbestos consultant and California Department of Health Services-certified lead project designer who will prepare hazardous materials specifications for the abatement of the asbestos containing materials and lead-containing paint. The specification will be the basis for selecting qualified contractors to perform the proposed asbestos and lead abatement work. A California-licensed asbestos abatement contractor will be retained to perform the abatement of any asbestos-containing construction materials and lead-based paint deemed potentially hazardous. Abatement of hazardous building materials will be completed prior to any work on these structures.

2.2.6 Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency and the California Air Resources Board, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide, nitrogen dioxide, ozone, particulate matter—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (suspended particulate matter) and particles of 2.5 micrometers and smaller (fine particulate matter)—and sulfur dioxide. National and state standards exist for lead, and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The national 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 NEPA. 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 United States 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. United States Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for the National Ambient Air Quality Standards and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon dioxide, nitrogen dioxide, ozone, particulate matter, and in some areas (although not in California), sulfur dioxide. California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except sulfur dioxide, and also has a nonattainment area for lead; however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years (for Regional Transportation Plans) and four years (for 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, the 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 Improvement 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 Plan; the project has a design concept and scope that has not changed significantly from those in the Regional Transportation Plan and Transportation Improvement Plan; project analyses have used the latest planning assumptions and United States Environmental Protection Agency-approved emissions models; and in particulate matter areas, the project complies with any control measures in the State Implementation Plan. Additional analyses (known as hot-spot analyses) may be required for projects located in carbon monoxide and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

Affected Environment

The following discussion is based on the Air Quality Report prepared for the project in October 2019 and the Traffic Operations Analysis Report prepared for the project in July 2019.

Climate

The project area is within the San Joaquin Valley Air Basin, which consists of all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties, as well as the western portion of Kern County. Air quality regulation in the basin is administered by the San Joaquin Valley Air Pollution Control District.

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted. Climate within the San Joaquin Valley Basin is characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100 degrees Fahrenheit.

Although marine air generally flows into the basin from the Delta, the surrounding mountain ranges restrict air movement through and out of the valley. Wind speed and direction influence the dispersion and transportation of ozone precursors, suspended particulate matter, and carbon dioxide; the more wind flow, the less accumulation of these pollutants.

The vertical dispersion of air pollutants in the San Joaquin Valley Air Basin is limited by the presence of persistent temperature inversion (warm air over cool air). Because of differences in air density, the air above and below the inversion does not mix. Ozone and its precursors mix and react to produce

higher concentrations under an inversion, which traps directly emitted pollutants such as carbon monoxide.

Precipitation and fog tend to reduce or limit pollutant concentrations. Ozone needs sunlight to form, and clouds and fog block the required radiation. Because carbon monoxide is slightly water soluble, precipitation and fog tend to reduce carbon monoxide concentrations in the atmosphere. Respirable particulate matter is somewhat washed from the atmosphere with precipitation. Annual precipitation in the valley decreases from north to south, with about 20 inches in the north, 10 inches in the middle, and less than 6 inches in the southern part of the valley. In general, amounts of suspended particulate matter wash from the atmosphere during heavy rains are small in comparison with the total ambient concentrations.

Criteria Pollutants and Regional Attainment

As noted earlier, the six criteria pollutants are ozone, carbon monoxide, particulate matter, nitrogen dioxide, sulfur dioxide, and lead. Table 2-1 of the Air Quality Study documents the current federal and state air quality standards and summarizes the sources and health effects of the criteria pollutants. The National Ambient Air Quality Standards are two-tiered: primary, to protect public health, and secondary, to prevent degradation of the environment (e.g., impairment of visibility and damage to vegetation and property).

Data collected at permanent monitoring stations throughout the state are used by United States Environmental Protection Agency to identify regions as “attainment,” “nonattainment,” or “maintenance,” depending on whether the regions meet the requirements stated in the primary National Ambient Air Quality Standards. Nonattainment areas are imposed with additional restrictions as required by the United States Environmental Protection Agency. Different classifications of nonattainment (e.g., marginal, moderate, serious, severe, and extreme) are used to classify each air basin in the state on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the National Ambient Air Quality Standards. The attainment status of the project area for each of the criteria pollutant is listed in Table 2-1 of the Air Quality Study.

Table 2.2.6-1 shows the status of United States Environmental Protection Agency-approved State Implementation Plans that are relevant to the proposed project, including the objective and the status of budget adequacy findings by the United States Environmental Protection Agency on submitted implementation plans. The State and Federal Ambient Air Quality Standards, Effects and Sources table can be found in the Air Quality Report.

Table 2.2.6-1. Status of State Implementation Plans Relevant to the Project Area

Name/Description	Status
Ozone	Adopted June 2016
Suspended Particulate Matter	Adopted September 2007
Fine Particulate Matter	Adopted November 2018
Carbon Monoxide	Not applicable
Nitrogen Dioxide	Not applicable
Sulfur Dioxide	Not applicable
Lead	Not applicable

Ambient Air Quality

The existing air quality conditions in the project vicinity can be characterized by monitoring data collected in the region. Table 3-1 in the Air Quality Study lists air quality trends in data collected at the Tracy Municipal Airport (California Air Resources Board Number 39271) and Stockton-Hazelton Street (California Air Resources Board Number 39252) monitoring stations for 2015 to 2017. Located 5.75 miles southeast and 22 miles northeast of the project area, the Tracy Municipal Airport and Stockton-Hazelton Street monitoring stations are representative of the project area because their climate, topography, and urban setting are like those of the project area. During the 2015 to 2017 monitoring period, exceedances were recorded at the monitoring stations for the state one-hour ozone standard, state and federal eight-hour ozone standards, state suspended particulate matter standards, and state and federal fine particulate matter standards.

Sensitive Receptors

Sensitive populations (sensitive receptors) are more susceptible to the effects of air pollution than the general population. Sensitive populations that are near localized sources of toxics and carbon monoxide are of concern. Land uses considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. There are no sensitive receptors within 2,000 feet of the project area.

Environmental Consequences

Regional Conformity

The proposed project is listed in the 2018 financially constrained Regional Transportation Plan, which was found to conform by the San Joaquin Council of Governments on June 28, 2018, and the Federal Highway Administration and the Federal Transit Administration made a regional conformity determination finding on December 3, 2018. The project is also included in San Joaquin Council of Government’s financially constrained 2018 Regional Transportation Improvement Plan and 2019 Federal Transportation Improvement Program adopted on December 14, 2017 and June 28, 2018, respectively. The Federal Highway Administration and the Federal

Transportation Administration approved Amendment Number 1 to the Regional Transportation Plan and Amendment Number 4 to the 2019 Federal Transportation Improvement Program on May 9, 2019. This amendment revised the project opening year from 2021 to 2022. Amendment Number 2 to the Regional Transportation Plan and Amendment Number 11 to the 2019 Federal Transportation Improvement Program revised the project opening year from 2022 to 2023. The San Joaquin Council of Government's Board approved the amendment on September 26, 2019. Because Amendment Number 2 includes primarily open-to-traffic date updates, without crossing air quality horizon years, the amendment relies on the conformity analysis and determination for Amendment Number 1. The Federal Highway Administration and Federal Transportation Administration approved Amendment Number 2 to the Regional Transportation Plan and Amendment Number 11 to the 2019 Federal Transportation Improvement Program on November 20, 2019.

Based on the Regional Transportation Plan analysis, the region will be in conformity with the State Implementation Plan, including this project, as described in 40 Code of Federal Regulations 93.109(l). The design concept and scope of the proposed project is consistent with the project design concept and scope used in the regional conformity analysis. The design concept and scope of the proposed project is consistent with the project description in the *Regional Transportation Plan/Sustainable Communities Strategy*, 2018 Regional Transportation Improvement Plan, 2019 Federal Transportation Improvement Program and the "open to traffic" assumptions of the San Joaquin Council of Government's regional emissions analysis.

Project-Level Conformity

Because the project area is in the San Joaquin Valley Air Basin and is in a nonattainment area for fine particulate matter and a maintenance area for suspended particulate matter, a project-level hot-spot analysis for particulate matter is required under 40 Code of Federal Regulations 93.109. However, the United States Environmental Protection Agency does not require hot-spot analyses (either qualitative or quantitative) for those project types that are not listed in Section 93.123(b)(1) as a project of air quality concern. The United States Environmental Protection Agency defines projects of air quality concern as the following:

- (i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.
- (ii) Projects affecting intersections that are at level of service D, E, or F with a significant number of diesel vehicles, or those that will change to level of service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

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

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

(v) Projects in or affecting locations, areas, or categories of sites which are identified in the particulate matter applicable implementation plan or implementation plan submission, as appropriate, as sites of exceedance or possible exceedance.

The proposed project would not result in construction of a new or expanded highway system that would have a significant number of or significant increase in diesel vehicles.

The proposed interchange modifications would improve vehicle flow through the I-580 westbound and eastbound ramp connections with International Parkway/Patterson Pass Road, as well as through the International Parkway/Schulte Road and Patterson Pass Road/Frontage Road intersections. Implementation of the project would not change average daily traffic or truck percentages at these locations relative to the No-Build Alternative. Tables 2.1.5-1, 2.1.5-2, 2.1.5-4, and 2.1.5-5 summarize peak hour level of service and delay at the three study area intersections under Opening Year (2023) and Design Year (2043) conditions, respectively.

The traffic analysis originally assumed the project would be open-to-traffic in 2022. However, a one-year delay from 2022 to 2023 would not materially affect the traffic operations analysis, and as such, the vehicle volumes and intersection analysis presented in the *Traffic Operations Analysis Report* for the proposed project is representative of opening year conditions in 2023

As shown in Table 2.1.5-1, all intersections except Patterson Pass Road/Frontage Road are expected to operate at level of service D or worse during both peak hours under opening year (2023) No-Build conditions. The Patterson Pass Road/Frontage Road intersection would operate at level of service A during the morning peak hour and level of service F during the evening peak hour. Implementation of the project would enhance traffic operations and facilitate vehicle movement through all study area intersections. Vehicle delay would be reduced for almost all travel lanes under the Build Alternative, and overall intersection operation would be improved at all locations by at least one level of service letter grade.

Table 2.1.5-4 indicates that all intersections except Patterson Pass Road/Frontage Road are expected to operate at level of service F during both peak hours under design year (2043) No-Build conditions. The Patterson Pass Road/Frontage Road intersection would operate at level of service C during the morning peak hour and level of service F during the evening peak

hour. Vehicle delay would exceed 100 seconds per vehicle at the westbound I-580 ramp connection and 800 seconds per vehicle at the International Parkway/ Schulte Road intersection. The poor traffic operation is primarily due to commuter traffic, which uses the I-580/International Parkway interchange to bypass severe congestion on westbound I-580 during the morning peak period (5 a.m. to 9 a.m.) and eastbound I-580 during the evening peak period (3 p.m. to 7 p.m.). This results in long delays on mainline I-580 and heavy congestion at local intersections. Implementation of the Build Alternative would improve operation of the International Parkway/I-580 westbound ramp connection to level of service C during morning peak hour and level of service D during the evening peak hour. Intersection operations at Patterson Road/Frontage Road and Patterson Pass Road/I-580 eastbound ramps during the morning peak hour would improve to level of service B and A, respectively. While the other study intersections would continue to operate at level of service D or worse under the project during at least one peak hour, the proposed interchange improvements would alleviate congestion on I-580 and significantly reduce intersection vehicle delay in almost all travel lanes, serving to reduce vehicle idling and localized particulate matter concentrations. Moreover, diesel truck volumes through all study area intersections would not change with implementation of the project, relative to No-Build conditions (maximum truck volumes are 6,077).

The project does not include new or expanded bus facilities, rail terminals, or transfer points. The project is not in, nor would it affect, an area or location identified in the 2018 or 2007 particulate matter State Implementation Plans. Moreover, the project is not expected to introduce significant amounts of diesel truck traffic within the project area that would result in localized particulate matter hot spots.

The discussion provided above indicates that project would not be considered a project of air quality concern as defined by 40 Code of Federal Regulations 93.123(b)(1). The project underwent interagency consultation through San Joaquin Council of Governments' interagency consultation process. United States Environmental Protection Agency and Federal Highway Administration issued concurrence that the project is not a project of air quality concern on May 8, 2018 and May 14, 2018, respectively. A detailed particulate matter hot-spot analysis was not completed because the Federal Clean Air Act and 40 Code of Federal Regulations 93.116 requirements are met without an explicit hot-spot analysis.

Long-Term Criteria Pollutant Emissions

Long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the project vicinity. Emissions of ozone precursors—reactive organic gases and nitrogen oxides— carbon dioxide, particulate matter, and sulfur dioxide for existing year (2017), Opening Year (2023), and Design Year (2043) with and without project conditions were evaluated through modeling using the

Caltrans Emission Factor model and vehicle activity data provided by the project traffic engineer, Fehr & Peers in 2019. United States Environmental Protection Agency approved Emission Factor 2014 on December 15, 2015 and Emission Factor 2017 on August 15, 2019. Consistent with Caltrans guidance, operational emissions were quantified using both Emission Factor 2014 and Emission Factor 2017 to support the project NEPA and CEQA documents, respectively. The Emission Factor 2014 analysis is presented below.

Analyses may continue to rely on the Caltrans Emission Factor 2014 to support project-level conformity determinations so long as the analysis was “begun before the end of the 12-month grace period, and if the final environmental document for the project is issued no more than three years after the issuance of the draft environmental document” (40 Code of Federal Regulations 93.111(c)).

Table 2.2.6-2 summarizes the modeled emissions by scenario and compares emissions under the Build Alternative with emissions under the No-Build Alternative and existing conditions. The differences in emissions between with- and without-project conditions represent emissions generated directly from implementing the project. Vehicular emission rates are expected to lessen in future years because of continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

The emissions analysis presented in Table 2.2.6-2 indicates that operation of the project under Design Year (2043) conditions would increase particulate matter emissions compared with existing conditions and would decrease reactive organic gases, nitrogen oxides, carbon dioxide, and sulfur dioxide emissions. These results are exclusively due to factors external to the project. The increase in particulate matter would be due to background growth in vehicle miles traveled from 2017 to 2043, because particulate matter emissions are primarily a function of vehicle miles traveled. The decreases in other pollutants would be due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles, which reduces exhaust emissions.

Emissions effects resulting from implementation of the project under opening (2023) and design year (2043) conditions are obtained through a comparison of with-project emissions with without-project emissions. As shown in Table 2.2.6-2, implementation of the project would result in no change in criteria pollutant emissions compared with No-Build conditions. This is because the project would not increase capacity on the mainline and would not result in new trips or daily vehicle miles traveled relative to the No-Build Alternative, as indicated in the 2019 Traffic Operations Analysis Report. Although average peak-hour vehicle speeds through the I-580/International Parkway Interchange would improve as a result of the proposed project, there would

be minimal effects on overall daily vehicle miles traveled in the transportation study area, and, consequently, no change in criteria pollutant emissions.

Table 2.2.6-2. Operational Criteria Pollutant Emissions (tons per year)^a

Scenario/Analysis Year	Reactive Organic Gases	Nitrogen Oxides	Carbon Monoxide	Suspended Particulate Matter	Fine Particulate Matter	Sulfur Dioxide
Existing year (2017)	651	6,626	14,748	1,643	465	<1
Opening year (2023) No-Build Alternative	401	3,822	9,285	1,719	454	<1
Opening year (2023) Build Alternative	401	3,822	9,285	1,719	454	<1
Design year (2043) No-Build Alternative	259	1,140	5,403	2,151	545	<1
Design year (2043) Build Alternative	259	1,140	5,403	2,151	545	<1
Opening year (2023) Build Alternative compared to Existing (2017)	-250	-2,804	-5,463	76	-11	<0
Design year (2043) Build Alternative compared to Existing (2017)	-393	-5,486	-9,345	508	80	<0
Opening year (2023) Build Alternative compared to No-Build (2023)	0	0	0	0	0	0
Design year (2043) Build Alternative compared to No-Build (2043)	0	0	0	0	0	0

Note: Modeled using Caltrans Emission Factor 2014.

^a The emissions analysis was conducted using emission factors for 2022 conditions. Because the project would not open until 2023, and emission factors decline annually due to fleet turnover, actual emissions under opening year conditions will likely be lower than those presented above. However, the relative magnitude between build and no-build conditions would be the same.

As a surrogate for nitrogen dioxide emissions that would result from the proposed project, nitrogen oxide emissions were estimated for the existing (2017) baseline, the No-Build Alternative, and the Build Alternatives for Opening Year (2023) and Design Year (2043) using project-specific traffic data and Emission Factor model. As shown in Table 2.2.6-2, the Build Alternative would have no effect on nitrogen dioxide emissions relative to the No-Build Alternative. The proposed project would enhance traffic operations and facilitate vehicle movement through the I-580/International Parkway Interchange. Despite these operational improvements, the proposed project is not a capacity-increasing project and would not result in new trips or changes in vehicle mix relative to the No-Build Alternative.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the United States Environmental Protection Agency

also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories and refineries).

The Federal Highway Administration released *Updated Interim Guidance on Mobile Source Air Toxics in NEPA Documents* in October 2016 for determining when and how to address impacts of mobile source air toxics in the NEPA process for transportation projects. The Federal Highway Administration identified three levels of analysis:

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

The purpose of this project is to reduce congestion and provide an acceptable level of service at the I-580/International Parkway Interchange for the projected traffic volumes that will result from planned development in the area. This project has been determined to generate minimal air quality impacts because of Federal Clean Air Act criteria pollutant emissions (see Table 2.2.6-2). The proposed project would not result in substantial changes in traffic volumes or vehicle mix that would cause a meaningful increase in regional mobile source air toxics emissions compared with those of the No-Build Alternative.

However, under the proposed project, Caltrans would widen the existing off- and on-ramps and southbound International Parkway and Patterson Pass Road (both directions). These improvements could result in localized changes in mobile source air toxics emissions. The reconstructed ramps would have the effect of moving some traffic closer to existing land uses; therefore, under the proposed project, there may be localized areas where ambient concentrations of mobile source air toxics could be higher than under the No-Build Alternative. The localized increases in mobile source air toxics concentrations would likely be most pronounced along Patterson Pass Road, although there are no sensitive receptors within 2,000 feet of the project area. Moreover, the magnitude and the duration of these potential increases compared with the no-build conditions cannot be reliably quantified because of incomplete or unavailable information in forecasting project-specific mobile health impacts.

The localized level of mobile source air toxics emissions for the Build Alternative could be higher relative to the No-Build Alternative at specific locations, but the increase could be offset by increases in speeds and

reductions in congestion (which are associated with lower mobile source air toxics emissions). However, on a regional basis, United States Environmental Protection Agency’s vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide mobile source air toxics levels to be significantly lower than they are today.

Short-Term Construction Emissions

Site preparation and interchange construction involve clearing, cut-and-fill activities, grading, improving existing roadways, erecting ramps and elevated structures, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction.

Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District’s Road Construction Model, version 9.0. Although the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other model assumptions, the San Joaquin Valley Air Pollution Control District considers the model adequate for estimating road construction emissions, and the model is used for that purpose in this project analysis.

Construction emissions were estimated for the Build Alternative using detailed equipment inventories and project construction scheduling information provided by the project designer. Construction-related emissions for the Build Alternative are presented in Table 2.2.6-3. The emissions presented are based on the best information available at the time of calculations. The emissions represent the peak annual construction emissions that would be generated during implementation of the Build Alternative.

Table 2.2.6-3. Build Alternative Construction-Period Emissions Estimates^a

Year	Reactive Organic Gases (tons/year)	Nitrogen Oxides (tons/year)	Carbon Monoxide (tons/year)	Suspended Particulate Matter (tons/year)	Fine Particulate Matter (tons/year)	Sulfur Dioxide (tons/year)
Year 1	<1	7	3	5	1	<1
Year 2	<1	5	3	1	<1	<1

Note: Emissions estimated using the Sacramento Metropolitan Air Quality Management District Road Construction Model, version 9.0 using project-specific data provided by design staff.

^a The emissions analysis was conducted using emission factors for 2021 and 2022 conditions. Because the project will now be constructed in 2022 and 2023, and emission factors decline annually due to fleet turnover, actual emissions will likely be lower than those presented above.

The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2018). Section 14-9-02 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, which would reduce air quality impacts.

Compliance with San Joaquin Valley Air Pollution Control District rules (including preparation of a dust control plan) would reduce air quality impacts resulting from construction activities. Although these measures are expected to reduce construction-related emissions, the reductions cannot be quantified at this time.

Asbestos, Lead, and Valley Fever

Based on a 2011 map of reported historic asbestos mines, historic asbestos prospects, and natural occurrences of asbestos prepared by the United States Geological Survey and California Geological Survey, there are no geologic features normally associated with naturally occurring asbestos (i.e., serpentine rock or ultramafic rock near fault zones) in or near the project area. The Patterson Pass Road overcrossing, which may contain asbestos, would be modified during construction. Testing for asbestos has not been conducted at the time of preparation of this report. It is not known whether the overcrossing structure contains asbestos. If asbestos is encountered, the project would comply with the United State Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants" regulations for asbestos (40 Code of Federal Regulations 61 Subpart M), and the California Air Resource Board's asbestos regulations.

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead, or painting or modification of structures with lead-based coatings. Testing for aerially deposited lead has not been conducted at the time of preparation of this report. It is not known whether lead-based paint was used previously for striping on the existing interchange ramps or International Parkway/Patterson Pass Road. If lead is encountered, disturbance of lead paint must meet United States Environmental Protection Agency and air district rules, pursuant to Caltrans Standard Specifications. There are no industrial lead sources within the immediate vicinity of the project.

Valley Fever is not an air pollutant but is a disease caused by inhaling *Coccidioides immitis* (*C. immitis*) fungus spores. The spores are found in certain types of soil and become airborne when the soil is disturbed. San Joaquin County is the 11th most affected county by Valley Fever in the state. Although several factors influence receptor exposure and development of Valley Fever, earthmoving activities during construction could release *C. immitis* spores if filaments are present and other soil chemistry and climatic conditions are conducive to spore development. Receptors within several miles of the construction area may be exposed to an increased risk of inhaling *C. immitis* spores and subsequent development of Valley Fever. Dust control measures identified in the United States Geological Survey's 2000 *Operational Guidelines (Version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever)* are the primary defense against infection. Implementation of the fugitive dust control plan outlined as minimization measures would avoid dusty conditions, and routine watering would reduce the risk of people contracting Valley Fever.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans and the City of Tracy will implement the following control measures to minimize air quality impacts from construction activities.

Implement Measures to Comply with San Joaquin Valley Air Pollution Control District Rule 9510

As required by San Joaquin Valley Air Pollution Control District Rule 9510, prepare and submit an air impact assessment to the San Joaquin Valley Air Quality Management District. The air impact assessment includes the calculation of emissions generated by the project and the emission reductions required by the provisions set forth in the rule. The air impact assessment must be submitted to the San Joaquin Valley Air Pollution Control District no later than applying for final discretionary approval, and offsite mitigation fees, if applicable, must be paid to the San Joaquin Valley Air Pollution Control District before issuance of the first grading/building permit, whichever comes first. Required onsite emission reductions and potential offsite emission reduction fees (if necessary) will be calculated through the permitting process, as dictated by Rule 9510, to reduce construction-related nitrogen oxide emissions by 20 percent and particulate matter exhaust emissions by 45 percent, compared to the statewide fleet average.

Climate Change

Neither the United States 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 CEQA chapter of this

document. The CEQA analysis may be used to inform the NEPA determination for the project.

2.2.7 Noise and Vibration

Regulatory Setting

The NEPA of 1969 and the CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. CEQA noise analysis is discussed in Chapter 3 of this document.

National Environmental Policy Act and 23 Code of Federal Regulations 772

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

Table 2.2.7-1. Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Residential (Includes undeveloped lands permitted for this activity category).

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

Figure 2.2.7-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section.

Figure 2.2.7-1. Noise Levels of Common Activities

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

According to the Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as 12 A-weighted decibels or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 A-weighted decibel of the noise abatement criteria.

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

The Caltrans Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible.

Feasibility of noise abatement is basically an engineering concern. A minimum 7 A-weighted decibels. A reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis for implementation of noise abatement. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance and the cost per benefited residence.

Affected Environment

The following discussion is based on the October 2019 Noise Study Report for the project.

Land use in the project vicinity consists of open space, agricultural, and commercial use (Activity Category F). The project area does not include apparent areas of frequent outdoor human use. Traffic on I-580 and Patterson Pass Road was observed to be the dominant source of noise in the study area. Modeled noise receptors are shown in Figure 2.2.7-2.

Figure 2.2.7-2. Noise Modeling and Prediction Locations



Environmental Consequences

Effects of the Build Alternative

Operational Noise

The Federal Highway Administration defines a Type 1 project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment of the highway. The proposed project is a Type 1 because it involves the addition of interchange ramps, and a revision of on-ramps and off-ramp locations and lane configurations, within an enlarged interchange footprint. The project would also increase the capacity of interchange ramps.

Traffic noise modeling results for existing and design year conditions are shown in Table 2.2.7-2. Predicted worst-case traffic noise levels for both design-year no-build and design year build conditions were found to have a range of values between 67 to 78 A-weighted decibels (the one-hour A-weighted equivalent sound level). As described above, the commercial and agricultural uses and open space areas do not include areas of outdoor frequent human use and are, therefore, not considered noise-sensitive.

Traffic noise levels are predicted to increase at receptor locations by a maximum of 4 decibels, under the proposed project. This is less than the substantial increase threshold of 12 decibels, so no impacts due to substantial increase are predicted to occur under design-year build conditions.

In accordance with 23 Code of Federal Regulations 772, noise abatement is considered only for outdoor areas of frequent human use that would benefit from a lower noise level. Because the project would not exceed the noise abatement criteria at noise sensitive land uses, future traffic noise due to the project would not result in an adverse impact. Therefore, consideration of noise abatement for operation of the project is not required.

Table 2.2.7-2. Impact Assessment and Predicted Noise Levels, I-580/International Parkway Interchange Improvements

Receiver I.D.	Land Use/ Activity Category	Location	Existing Noise Level (hourly A-Weighted decibels)	Design Year Noise Level without Project (hourly A-Weighted decibels)	Design Year Noise Level with Project (hourly A-Weighted decibels)	Design Year Noise Level without Project minus Existing Conditions (hourly A-Weighted decibels)	Design Year Noise Level with Project minus No Project Conditions (hourly A-Weighted decibels)	Design Year Noise Level with Project minus Existing Conditions (hourly A-Weighted decibels)	Activity Category (Noise Abatement Criteria)	Impact Type
ST1 (580)	F—Commercial	I-580 interchange Southwest quadrant	67	71	71	+ 4	0	+ 4	F	None
ST2 (580)	G—Open Space	I-580 interchange Southeast quadrant	75	78	78	+ 3	0	+ 3	G	None
ST3 (580)	G—Open Space	Mountain House Road Southbound	66	69	68	+ 3	- 1	+ 2	G	None
LT1 (580)	F—Commercial	I-580 interchange Southwest quadrant	68	71	71	+ 3	0	+ 3	F	None
R1 (580)	F—Commercial	I-580 interchange Southwest quadrant	66	69	69	+ 3	0	+ 3	F	None
R2 (580)	F—Commercial	Patterson Pass Road Southbound	67	70	70	+ 3	0	+ 3	F	None
R3 (580)	G—Open Space	Patterson Pass Road Northbound	66	70	69	+ 4	- 1	+ 3	G	None
R4 (580)	G—Open Space	I-580 interchange Southeast quadrant	71	74	Not Applicable	+ 3	Not Applicable	Not Applicable	G	None
R5 (580)	G—Open Space	I-580 interchange Northwest quadrant	66	69	68	+ 3	- 1	+ 2	G	None
R6 (580)	G—Open Space	Mountain House Road Southbound	64	67	67	+ 3	0	+ 3	G	None
R7 (580)	G—Open Space	Mountain House Road Northbound	66	70	69	+ 4	- 1	+ 3	G	None

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction activities would include demolition of existing structures and building of new structures. Equipment operations associated with demolition and building activities would be a source of noise. Construction noise is controlled by Caltrans Standard Specifications Section 14-8.02, which states:

- Do not exceed 86 A-weighted decibels at 50 feet from the job site activities from 9 in the evening to 6 in the morning.
- Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

Table 2.2.7-3 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 80 to 90 decibels at 50 feet, which would be reduced over distance at a rate of about six decibels per doubling of distance.

Table 2.2.7-3. Construction Equipment Noise

Equipment	Maximum Noise Level (A-Weighted decibels at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

No adverse noise impacts from construction are expected because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Although not required, implementing the following measures would minimize the temporary noise impacts from construction.

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by Caltrans, the contractor will implement appropriate additional noise reduction measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance

of construction work, and installing acoustic barriers around stationary construction noise sources.

Accordingly, no adverse impacts from construction of the project would be expected.

Effects of the No-Build Alternative

Under the No-Build Alternative, no noise effects related to the project, resulting from traffic or construction, would occur. Future planned projects in the area, however, would result in an increase in traffic noise, as shown in Table 2.2.7-2.

Avoidance, Minimization, and/or Noise Abatement Measures

No traffic noise impacts are predicted to result from the proposed project. Therefore, noise abatement measures were not evaluated further in this analysis.

2.3 Biological Environment

2.3.1 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 United States Code 1344), is the primary law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high-water mark, in the absence of adjacent wetlands. When adjacent wetlands are present, Clean Water Act jurisdiction extends beyond the ordinary high-water mark to the limits of the adjacent wetlands. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

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

permit program is run by the United States Army Corps of Engineers with oversight by the United States Environmental Protection Agency.

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

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

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600 through 1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify California Department of Fish and Wildlife before beginning construction. If

California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the United States Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities which may result in a discharge to waters of the United States. This is most frequently required in tandem with a Section 404 permit request. Please see the Section 2.2.2, Water Quality and Storm Water Runoff, for more details.

Affected Environment

The following discussion is based upon the Natural Environment Study completed for the project in November 2019 and updated in an addendum in June 2020, and the Aquatic Resources Delineation Report, completed for the project in October 2019 and updated in May 2020.

Delineation fieldwork in the biological study area discussed in the Natural Environment Study was conducted on March 14, April 3, and August 29, 2019. The delineation report was submitted to United States Army Corps of Engineers, with a request for an Approved Jurisdictional Determination. On March 5, 2020, a field verification was conducted with United States Army Corps of Engineers staff. A subsequent request for further information has resulted in the decision to request a preliminary jurisdictional determination (PJD) based on potential connection of an ephemeral drainage to navigable waters further downstream. That document is currently in process.

Seasonal Wetland

Seasonal wetlands occur in depressions that hold water during the wet season, are dominated by wetland plant species, and support wetland soils. Two potential seasonal wetlands (0.02 acre) occur within the biological study area (see Figure 2.3.1-1). The first wetland occurs downslope of Interstate 580, at the base of a culvert, where water collects in a small depression just north of the wild oat grassland, on the west side of Interstate 580. The culvert runs northeast under Interstate 580 and the California Aqueduct, and ultimately connects to a storm water detention basin, just outside of the

biological study area. This storm water detention basin may be connected to a navigable water or tributary further downstream. The other potential seasonal wetland occurs at the base of a culvert where road runoff water collects in a small isolated depression just north of Interstate 580 in the southeastern corner of the biological study area. The City is seeking a preliminary jurisdictional determination (PJD) from the United States Army Corps of Engineers for aquatic features in the biological study area, including the seasonal wetlands. Therefore, the seasonal wetlands may be considered waters of the United States, as well as waters of the State. Jurisdiction and acreage of the wetlands are pending the preliminary jurisdictional determination by United States Army Corps of Engineers, Sacramento District.

Ephemeral Drainage

Two ephemeral drainages are located within the biological study area. One ephemeral drainage (Ephemeral Drainage-1) is a 0.064-acre feature located in the southwest portion of the project area and crosses under Patterson Pass Road. This feature appears to be fed by runoff from both a private property and neighboring hillsides west of the feature. Ephemeral Drainage-1 was dry at the time of survey. The second drainage (Ephemeral Drainage-2) is located in the northern part of the project area. This drainage appears to disperse roadside runoff from a culvert just northeast of the feature into Seasonal Wetland-1 and then the overflow passes through a culvert extending under Interstate-580 and ultimately connects to a storm water detention basin, just outside of the biological study area. At the time of survey, there was no standing water in the drainage, but the mouth of the culvert was damp. This feature is 0.069 acre in size. Both ephemeral drainages may be connected to a navigable water or tributary further downstream. The City is seeking a preliminary jurisdictional determination from the United States Army Corps of Engineers for aquatic features in the biological study area, including the ephemeral drainages. Therefore, the ephemeral drainages may be considered waters of the United States, as well as waters of the State. Jurisdiction and acreage of the ephemeral drainages are pending the preliminary jurisdictional determination by United States Army Corps of Engineers, Sacramento District.

Aquatic Resources Summary

Seasonal Wetland-1 and both ephemeral drainages may connect to navigable waters. The City is seeking a preliminary jurisdictional determination from the United States Army Corps of Engineers, and therefore, these features will be considered waters of the United States. Acreage of the potential seasonal wetlands and ephemeral drainages are pending the preliminary jurisdictional determination by United States Army Corps of Engineers Sacramento District.

Environmental Consequences

Effects of the Build Alternative

Direct Effects

The realignment of the eastbound on-ramp would result in the placement of permanent fill within the entirety of one of the seasonal wetlands (Seasonal Wetland -1), totaling 0.011 acre (Table 2.3.1-1). There would be no permanent fill within the other seasonal wetland (Seasonal Wetland-2). Construction of improvements along Patterson Pass Road and Interstate 580 would result in the placement of 0.032 acre of permanent fill within Ephemeral Drainage-2 and no permanent fill in Ephemeral Drainage-1. Temporary impacts would include the placement of 0.003 acre of temporary fill in Ephemeral Drainage-1 and 0.005 acre in Ephemeral Drainage-2. The project would require a Clean Water Act Section 404 Permit from the United States Army Corps of Engineers and a Section 401 Permit from the Regional Water Quality Control Board for these impacts and would comply with the regulatory and compensatory requirements of those permits to ensure no net loss of wetlands and ephemeral drainages. The implementation of standardized measures and avoidance and minimization measures would ensure that adverse effects to wetlands and other waters would be minimized.

Indirect Effects

Indirect impacts caused by sedimentation or modification of hydrology could occur in portions of wetlands that lie outside the project footprint.

Standardized Measures

CONDUCT MANDATORY ENVIRONMENTAL AWARENESS TRAINING FOR CONSTRUCTION PERSONNEL

Before any ground-breaking disturbance occurs, including grading, a qualified biologist would conduct a mandatory contractor/worker environmental awareness training for construction personnel. The awareness training would be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid effects on sensitive biological resources (e.g., wetlands, special-status species, and nesting birds) next to the work area and the penalties for not complying with applicable state and federal laws and permit requirements. The biologist would inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of the authorizing documents. Proof of this instruction will be submitted to resource agencies, as required.

The environmental training would also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction. General restrictions and guidelines that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 15 mile-per-hour speed limit on unpaved roads or access areas in the work area during travel within the project limits.
- Project-related vehicles and construction equipment would restrict off-road travel to the work area.
- Vegetation clearing and construction operations would be limited to the minimum necessary in areas of temporary access work areas and staging.
- All food-related trash would be disposed of in closed containers and removed from the work area at least once a week during the construction period. Construction personnel will not feed or otherwise attract wildlife to the designated work area.
- No pets or firearms will be allowed in the designated work area.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel would not service vehicles or construction equipment outside designated staging areas.
- The training would also include identifying the best management practices written into the Stormwater Pollution Prevention Plan and the rationale behind their implementation during project construction.

Effects of the No-Build Alternative

Under the No-Build Alternative, there would be no construction and no wetlands or other waters would be affected.

Table 2.3.1-1. Impacts on Wetlands and Other Waters

Habitat Type	Permanent (acres)	Temporary (acres)
Seasonal Wetland 1 (SW-1)	0.011	0.0
Seasonal Wetland 2 (SW-2)	0.0	0.0
Ephemeral Drainage 1 (ED-1)	0.0	0.003
Ephemeral Drainage 2 (ED-2)	0.032	0.005
Total Impacts	0.043	0.008

Figure 2.3.1-1. Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area

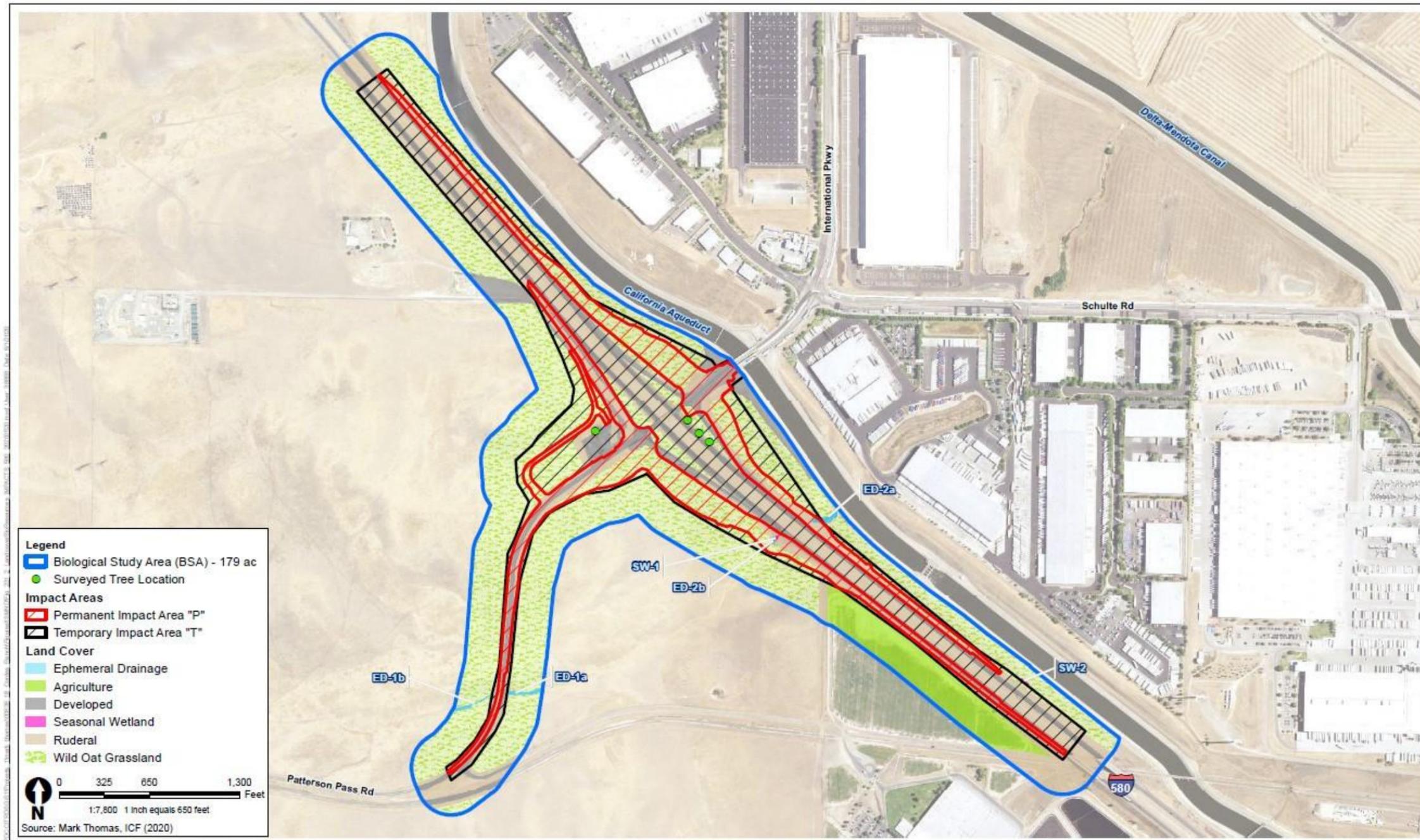


Figure 2.3.1-2
Impacts on Land Cover Types and Sensitive Biological Resources in the Biological Study Area
Interchange Improvements at Interstate 580 at International Parkway/Patterson Pass Road

Over

Avoidance, Minimization, and/or Mitigation Measures

Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Prior to construction, high-visibility orange construction fencing and/or flagging will be installed along the perimeter of the work area next to environmentally sensitive areas (e.g., wetlands, special-status species habitat, and active bird nests). Where specific buffer distances are required for sensitive biological resources (e.g., special-status species habitats and active bird nests), they will be specified under the corresponding measures identified below. The final construction plans would show the locations where fencing will be installed. The plans will also define the fencing installation procedure. The fencing would be maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities would cease until the fencing is repaired or replaced. The project's special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within environmentally sensitive areas.

Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

A qualified biologist would monitor all construction activities that involve ground disturbance (e.g., vegetation removal, grading) within or next to environmentally sensitive areas (e.g., wetlands, special-status species habitat, and active bird nests). The purpose of the monitoring is to ensure that measures identified in this Initial Study/Environmental Assessment are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the project complies with all applicable permit requirements and agency conditions of approval. The biologist would ensure that fencing around environmentally sensitive area remains in place during construction and that no construction personnel, equipment, or runoff and sediment from the construction area enters environmentally sensitive area.

Compensate for Loss of Wetlands and Ephemeral Drainages

Impact acreages are pending a preliminary jurisdictional determination by USACE Sacramento District, and final compensatory ratios would be determined during the Clean Water Act Sections 404 and 401 permitting process. The City of Tracy would compensate for the permanent loss of seasonal wetland and ephemeral drainage habitats through one or more of the following mitigation options:

- Purchase compensatory credits for the affected habitat types at a United States Army Corps of Engineers-approved mitigation bank
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program

2.3.2 Plant Species

Regulatory Setting

The United States Fish and Wildlife Service and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see the Threatened and Endangered Species section 2.3.4 in this document for detailed information about these species.

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

The regulatory requirements for the Federal Endangered Species Act can be found at 16 United States Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. The regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code Sections 1900 to 1913, and CEQA, found at California Public Resources Code, Sections 21000 to 21177.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. The California Endangered Species Act defers to California Native Plant Protection Act, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under California Native Plant Protection Act are not protected under California Endangered Species Act but rather under CEQA. All plant species with a California Rare Plant Rank of 1B and 2B are considered rare, threatened, or endangered in California. Any impacts on these species should be analyzed during preparation of environmental documents relating to CEQA or equivalent to CEQA because these species meet the definition of Rare or Endangered under State CEQA Guidelines Section 15125 (c) and/or Section 15380. The biological study area has the potential to support 21 California Rare Plant Rank 1B or 2B plant species of both annual and perennial lifeforms.

Affected Environment

The following discussion is based upon the Natural Environment Study completed for the project in November 2019 and updated in an addendum in June 2020.

Botanists conducted a botanical survey of the biological study area in September 2017, and again on April 3, 2019 and August 29, 2019, during spring and summer blooming periods. During the survey, botanists walked all accessible parcels of the biological study area and compiled a list of plant species that were evident and identifiable.

A total of 56 special-status plant species were identified as occurring in the biological study area vicinity (about 10 miles) based on the California Natural Diversity Database search results, the California Native Plant Society inventory (2019), and the United States Fish and Wildlife Service list of threatened or endangered species (2019) for the project region (see Table C-1 in Appendix C). The biological study area contains potential habitat for 26 of these 56 species (see Table C-1 in Appendix C). The other 30 species either have habitat or microhabitat requirements that are not present in the biological study area, or the species occur at higher elevations than the biological study area.

Spring and summer botanical surveys were conducted and 26 species potentially present were not observed. During the 2019 summer botanical surveys, it was found that a large portion of the wild oat grassland, which serves as potential habitat for the big tarplant, was burned, disced, or mowed. In 2002, two individual occurrences of big tarplants (*Blepharizonia plumosa*) were identified within the biological study area and one was reported just southeast of the biological study area. Because of the high level of disturbance of potential habitat and the known occurrence of big tarplant in and near the biological study area, the big tarplant is assumed to be present in the biological study area until surveys are conducted during the blooming period (July through October). For purposes of this impact analysis, areas of wild oat grassland are presumed to be occupied by big tarplants. No other special-status plant species were observed during the botanical surveys.

Environmental Consequences

Effects of the Build Alternative

Direct Effects

Construction of the project would result in permanent conversion of wild oat grassland. At the time of survey, approximately 17.5 acres of wild oat grassland within the project footprint had been burned and therefore it was not possible to determine that big tarplant was not present. For purposes of this impact analysis, that area of wild oat grassland is presumed to be occupied by big tarplants until surveys of undisturbed habitat are conducted to determine presence or absence of this species. If big tarplants do occur in

the project area, construction of the proposed project would permanently remove plants within the footprint and temporarily disturb plants elsewhere in the project area. The number of plants that could be permanently or temporarily affected is unknown.

Standardized Measures

Standardized measures described in Section 2.3.1 to conduct mandatory environmental awareness training for construction personnel, and avoidance and minimization measures to install fencing and/or flagging to protect biologically sensitive resources, and retain a qualified biological monitor for construction in sensitive areas would further reduce impacts on special-status plants. The following standardized measure would reduce the effects on special status plant species:

CONDUCT FLORISTIC SURVEYS FOR SPECIAL STATUS-SPECIES DURING APPROPRIATE IDENTIFICATION PERIODS AND IMPLEMENT PROTECTIVE MEASURES AS FEASIBLE.

The City will retain a qualified botanist to survey the BSA (those parcels previously not surveyed and wild oat grassland habitat) between July and September to document the presence or absence of special-status plants, including big tarplant, before project construction. All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the blooming period. The botanist will photograph and map locations of all special-status plants identified during the surveys, document the location and extent of the special-status plant population on a California Natural Diversity Database Survey Form, and submit the completed Survey Form to the California Natural Diversity Database.

Wherever feasible, avoidance and minimization measures will be implemented to reduce direct impacts on special-status plants found in or adjacent to the construction area by creating a 100-foot buffer around the plants and by installing and maintaining exclusion fencing. The buffer size may be reduced by a qualified biologist if site-specific conditions indicate that the hydrology where the plants are located would not be affected by construction. The City may redesign or modify the proposed project wherever feasible in order to avoid indirect or direct effects on special-status plants identified within the project construction area during the surveys. Any special-status plants in the proposed staging areas will be avoided. Where special-status plants cannot be avoided, the City may compensate for permanent impacts.

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no temporary or permanent impacts on special-status plant species.

Avoidance, Minimization, and/or Mitigation Measures

Mitigate for Permanent Impacts on Special-Status Plants

If complete avoidance of special-status plants is not feasible, the project may mitigate unavoidable permanent direct effects on special-status plants through protection of the existing seed base by the collection of topsoil which will be used to reseed disturbed areas. Special-status plants may be planted or transplanted.

2.3.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The United States Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species Section 2.3.4 below. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and United States Fish and Wildlife Service or National Oceanic and Atmospheric Administration's National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- NEPA
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- CEQA
- Sections 1600 to 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan was adopted by the San Joaquin Transportation Authority on November 14, 2000. The key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan is to provide a strategy for balancing the need to conserve Open Space and the need to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish, and wildlife species, especially those

that are currently listed, or may be listed in the future, under the Federal Endangered Species Act and the California Endangered Species Act, providing and maintaining multiple open-spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to project proponents and society at large.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, in accordance with Endangered Species Act Section 10(a)(1)(B) and California Endangered Species Act Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses which affect the plant, fish and wildlife species covered by the Plan (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Covered Species). The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which are covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

San Joaquin Council of Governments administers the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, a voluntary mitigation plan, and holds the mitigation land. Project applicants are given the option of participating in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan as a way to streamline compliance with required local, state, and federal laws regarding biological resources, and typically avoid having to approach each agency independently. Applicants pay mitigation fees or provide land in-lieu of fees on a per-acre basis, as established by the San Joaquin Council of Governments according to the measures needed to mitigate impacts to the various habitat and biological resources.

Affected Environment

The following discussion is based upon the Natural Environment Study completed for the project in November 2019 and updated in an addendum in June 2020.

Based on the California Natural Diversity Database search results, 18 special-status animal species (non-threatened or endangered) were identified as occurring or having the potential to occur in the biological study area (see Table C-2 in Appendix C of this document). After a review of species distribution and habitat requirements data, and considering the results of the field survey, it was determined that 8 of the 18 species would not occur in the biological study area because it either lacks suitable habitat for the species or is outside the species' known range. Table C-2 in Appendix C provides an explanation for the absence each of these species from the biological study. Ten non-listed sensitive wildlife species have the potential to occur in the biological study area: California glossy snakes, coast horned lizards, San Joaquin coachwhips, western burrowing owls, golden eagles, loggerhead shrikes, white-tailed kites, American badgers, Townsend's big-eared bats, and pallid bats.

Reconnaissance-level field surveys of the biological study area were conducted on March 8, 2019 and August 26, 2019, to document existing conditions and evaluate habitat suitability for special-status animal species. Biologists walked parallel transects through the biological study area where permission to enter was obtained and they recorded all wildlife habitat and biological resources observed. Transects were spaced about 15 to 30 feet apart. For areas where permission to enter was not obtained, biologists drove publicly accessible roads and used binoculars to scan the biological study area out to the field of view.

The proposed project is consistent with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, as amended, as reflected in the conditions of project approval for this proposal. Pursuant to the Final Environmental Impact Report/Study for the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, dated November 15, 2000, and certified by the San Joaquin Council of Governments on December 7, 2000, implementation of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan is expected to reduce impacts to biological resources resulting from the proposed project to a level of less-than-significant. That document is hereby incorporated by reference and is available for review during regular business hours at the San Joaquin Council of Governments (555 E. Weber Avenue, Stockton, CA 95202) or online at: www.sjcog.org.

California Glossy Snake, Coast Horned Lizard, San Joaquin Coachwhip

California Glossy Snake

The California glossy snake is a California species of special concern. The snakes are found from the eastern part of the San Francisco Bay Area south to northwestern Baja California; they are absent along the central coast. This species inhabits arid scrub, rocky washes, grasslands, and chaparral habitat and is most common in desert habitat. Primarily nocturnal, glossy snakes are

inactive during the day and take refuge in mammal burrows and rock outcrops, and under surface objects such as flat rocks and vegetation. They occasionally burrow in loose soil.

Coast Horned Lizard

The coast horned lizard is a California species of special concern. It occurs in valley-foothill hardwood, conifer, riparian, and annual grassland habitats. It is found in the Sierra Nevada foothills from Butte County to Kern County, and throughout the central and southern California coast. The species forages in open sandy areas, washes, and floodplains. They bask on elevated objects such as rocks and burrow into loose soil to avoid predators. Periods of inactivity and winter hibernation are spent burrowed into the soil under surface objects such as logs, rocks, in mammal burrows, or in crevices.

San Joaquin Coachwhip

The San Joaquin coachwhip is a California species of special concern. It is endemic to California, and ranges from Arbuckle in the Sacramento Valley in Colusa County, southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward to the inner South Coast Ranges. An isolated population occurs in the Sutter Buttes. The species is known to occur from 65 to 2,950 feet above sea level. The species occurs in open, dry, treeless areas, often including grasslands and saltbush scrub, and avoids dense vegetation. This species takes refuge in rodent burrows, and under shaded vegetation (shrubs and trees) and other surface objects (rock piles). The San Joaquin coachwhip hibernates in soil or sand about 1 foot (0.3 meter) below the surface.

The biological study area contains suitable habitat for California glossy snakes, Coast horned lizards, and San Joaquin coachwhips. These three species were not observed during field surveys. Annual grassland habitat with loose, friable soil is present in a portion of the biological study area. Weedy areas next to suitable annual grassland may also provide suitable habitat for these species. The interstate highway would be an impassible barrier to movement for any individuals present.

Western Burrowing Owl

The burrowing owl is a California species of special concern. The burrowing owl is a year-round resident in the Central Valley, San Francisco Bay Area, Carrizo Plain, and Imperial Valley. Burrowing owls occur primarily in grassland habitats but may also occur in landscapes that are highly altered by human activity, such as weedy, agricultural, and developed lands (e.g. on edges of agricultural fields, canal banks, along railroad track berms). Suitable habitat must contain burrows with relatively open, short vegetation and minimal amounts of shrubs or taller vegetation. They most commonly nest and roost in California ground squirrel burrows, but may also use burrows dug by other species, as well as use culverts, piles of concrete rubble, pipes, and

other tunnel-like structures. The breeding season is March to August but can begin as early as February. During the breeding season, owls forage near their burrows but have been recorded hunting up to 1.7 miles away.

Protocol-level surveys for burrowing owls were not conducted; however, parallel transects (spaced 20 to 30 feet apart) were walked through all accessible parcels in the biological study area and were searched for owls and owl signs (i.e., burrows with white-wash, feathers and pellets) as well as suitable burrows and surrogate cover (e.g., culverts, debris piles). Burrowing owls, owl burrows, and signs were not observed during the field survey. There are numerous California Natural Diversity Database records for burrowing owls within 10 miles of the biological study area, with the closest record (from 1991) overlapping with the biological study area.

Suitable nesting and foraging habitat (annual grassland and weedy areas) for burrowing owls is present in the biological study area. Ground squirrel complexes, which are used by burrowing owls for underground refuge, were observed in annual grassland within the biological study area. Eight small metal culverts (about 8 inches wide) that can be used as surrogate burrows for burrowing owls were also observed within the biological study area. Potentially suitable owl burrows and other nesting habitat may be present in parcels that were inaccessible during the survey. There is potential for burrowing owls to occupy annual grassland and weedy areas that are not frequently disturbed by traffic and vegetation maintenance.

Golden Eagle

The golden eagle is a California fully protected species. Golden eagles use habitats ranging from arctic to desert, including tundra, shrublands, grasslands, coniferous forests, farmland and riparian corridors, and are found through the majority of California. The species nests on secluded cliffs and bluffs or in tall trees overlooking open country. It forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals.

Golden eagles are known to forage in annual grasslands in the project vicinity and one was observed foraging over the biological study area during the field survey on March 8, 2019. The biological study area lacks suitable nesting habitat for golden eagles. Suitable foraging habitat (annual grassland and weedy areas) is present in a portion of the biological study area. Signs of small to medium size suitable mammal prey items (i.e., jackrabbits, California ground squirrels, coyotes) were observed in annual grassland and weedy areas in the biological study area.

Loggerhead Shrike

The loggerhead shrike is a California species of special concern. It is a year-round resident throughout much of California and uses a variety of open grasslands across its range. Shrikes use scattered trees, shrubs, posts,

fences, utility lines, or other structures for perches. Nests are built in trees or shrubs with dense foliage surrounded by open habitat. In the Central Valley, loggerhead shrikes show a positive association with grasslands, irrigated pasture, and grain and hay crops.

Focused surveys for loggerhead shrikes were not performed; however, loggerhead shrikes were observed foraging within the biological study area during the field survey on March 8, 2019. Suitable nest trees for the species were observed within the biological study area. Suitable foraging habitat (weedy and annual grassland) is present throughout the biological study area.

White-tailed Kite

The White-tailed kite is a California fully protected species. White-tailed kites occur in coastal and valley lowlands in California. White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetland, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands. White-tailed kites make nests of loosely piled sticks and twigs lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks from May to August. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands where voles and mice are common prey species.

Focused surveys for white-tailed kites were not conducted and the species was not observed in the biological study area. No suitable white-tailed kite nest trees are present in the biological study area; trees that are present in the biological study area are too small for nests and are surrounded by continuous vehicular disturbance. Trees that may be used by white-tailed kites are located outside of the biological study area. Suitable foraging habitat (annual grassland and weedy areas) occurs in a portion of the biological study area,

American Badger

The American badger is a California species of special concern. American badgers occur throughout the state except for the humid coastal forests of northwestern California in Del Norte and Humboldt Counties. American badgers occur in a wide variety of open, arid habitats including shrub, forest, and herbaceous habitat, but most commonly are associated with grasslands, savannas, mountain meadows, and open areas of desert scrub. They require sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground. Badgers dig burrows, which are used for cover and reproduction. They frequently reuse old burrows, although some may dig a new den each night, especially in summer. Dens are usually located in sandy soil in areas with sparse overstory cover. Badgers are carnivorous and eat fossorial rodents (especially ground squirrels and pocket gophers) and some

reptiles, insects, eggs, birds, and carrion; their diet shifts seasonally and yearly in response to availability of prey. They are active yearlong, and day and night.

Parallel transects, spaced 20 to 30 feet apart, were walked through all accessible parcels and scanned for burrows/dens suitable for badgers. Badgers were not observed; however, two large burrows/dens with openings of 6 to 8 inches, with claw marks on the side of the burrow entrances, dirt aprons, and various small mammal bones scattered at the burrow opening, were discovered. The burrows/dens were located adjacent to the biological study area. Loose, friable soil is present in the biological study area. Annual grassland within a portion of the biological study area provides suitable habitat for this species. Inaccessible areas were not surveyed and may contain suitable habitat for American badgers and/or badger dens. The biological study area may be used as a movement corridor and possibly as denning habitat for American badgers.

Townsend's Big-Eared Bat and Pallid Bat

TOWNSEND'S BIG-EARED BAT

The Townsend's big-eared bat is a California state species of special concern and is considered a high priority species in California by the Western Bat Working Group. Townsend's big-eared bats occur throughout California, but distribution appears to be limited by the availability of cavern-like roost structures. Townsend's big-eared bats are found in a wide variety of habitats, from desert to riparian and coastal woodland, but they are found in greatest numbers in areas with cavern-forming rock or abandoned mines. Townsend's big-eared bats roost in dome-like spaces in caves or mines, where they roost hanging in the open from the ceiling. They also have been known to use cavern-like spaces in abandoned buildings or bridges, and in the basal hollows in large coast redwood trees. Mating occurs in fall and spring, and pups are born in late spring to early summer. Maternity roost size varies and may contain only a few or up to several hundred individuals. The species is believed to be relatively sedentary, hibernating in caves and mines near summer maternity roosts, although seasonal movements are not well understood. Townsend's big-eared bats may have hibernated historically in aggregations of thousands of individuals. They are highly sensitive to disturbance at roost sites.

PALLID BAT

The pallid bat is a California species of special concern and is considered a high priority species in California by the Western Bat Working Group. In California, the species occurs throughout the state except for the high Sierra Nevada from Shasta to Kern Counties, and the northwestern corner from Del Norte and western Siskiyou Counties to Mendocino County. Pallid bats tend to inhabit foothills and lowlands near water throughout California below 6,562 feet. Pallid bats use a wide variety of habitats (e.g., desert, grassland,

scrubland, woodland, forest) but are most common in open, dry areas with rock outcrops or cliffs for roosting. The species prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. They are a yearlong resident in most of their range and hibernate in winter near their summer roost. Day roosting sites include caves, crevices, mines, and occasionally in hollow trees and buildings; roosts must protect from high temperatures. Night roosts may be in more open sites such as porches and open buildings. Pallid bats are also very sensitive to roost site disturbance. Pallid bats are opportunistic generalists that eat a variety of arthropod prey; they rarely eat small reptiles, rodents, and plant material.

Although there is low potential for special-status bat species to roost in the biological study area, the potential for a species of special-status bat to roost in the biological study area cannot be entirely ruled out without further assessment by a qualified bat biologist. Focused surveys for roosting special-status bats were not conducted and a few site visits are inadequate to fully assess potential bat roost presence because bats may change roost sites on a seasonal or even daily basis and there is variability among species. Townsend's big-eared bats and pallid bats can roost in tree hollows, crevices and overhangs on buildings, and in weep holes and under bridges. However, those features in the biological study area are not generally suitable for roosting habitat. There is some potential that pallid bats could roost in a crevice on the side of the gas station buildings or that either Townsend's big-eared bats or pallid bats could use the overpass to roost. However, no evidence of bat use was observed on the underside of the overpass. Therefore, although evidence of an active roost was not observed during the March 8, 2019 field visit, the two bat species have low potential to roost and forage in the biological study area because habitat is present.

Special-Status and Other Migratory Birds

Migratory birds and raptors may nest on the ground or in shrubs or trees in the biological study area. Common species such as barn swallows and black phoebes are known to use bridge structures for nesting, especially structures over open water that generally support a large insect prey base. The nonnative grassland and weedy habitat in the biological study area has potential to support various species of special-status birds including: grasshopper sparrows (*Ammodramus savannarum*), northern harriers (*Circus hudsonius*), and the song sparrow "Modesto population" (*Melospiza melodia*).

The occupied nests and eggs of migratory birds are protected by federal and state laws, including the Migratory Bird Treaty Act and California Fish and Game Code Section 3503 and Section 3503.5. The United States Fish and Wildlife Service is responsible for overseeing compliance with the Migratory Bird Treaty Act, and the California Department of Fish and Wildlife is responsible for overseeing compliance with the California Fish and Game Code and making recommendations on nesting bird and raptor protection.

Suitable nesting and foraging habitat for migratory birds and raptors is present in the biological study area, including on the underside of the existing bridge structure. None of the four special-status migratory bird species listed in the section above were identified during the field visits. Several non-special-status migratory birds could nest on the ground or in shrubs or trees in and next to the limits of disturbance for proposed project construction. No active nests were observed during the field survey; however, focused nesting bird surveys were not conducted. Mud cup nests were not observed on the underside of the bridge or on the side of human-made structures (i.e., the ARP Mini-Mart gas station).

Colonies of Roosting Non-Special-Status Bats

The California Department of Fish and Wildlife would also require that substantial roost colonies of non-special-status bats (such as Mexican free-tailed bats [*Tadarida brasiliensis*]) be protected from disturbance, especially during the breeding and hibernation seasons.

Focused surveys for colonies of roosting non-special-status bats were not conducted and a few site visits are inadequate to fully assess potential bat roost presence because of the high variability in bat resource use across time (i.e., bats may change roost sites on a seasonal or even daily basis) and among species.

Trees, the overpass, and the gas station buildings in the biological study area, may provide potential day roosting habitat for non-special-status bats, although evidence of use was not observed. The few trees in the biological study area could provide suitable roosting habitat for foliage roosting bats, non-special-status bats such as hoary bats (*Lasiurus cinereus*) and trees with crevices could provide suitable roosting habitat for silver-haired bats (*Lasionycteris noctivagans*). Crevices on the side of the gas station building, and weep holes and seams on the underside of the bridge overpass may also provide suitable roosting habitat for non-special-status bats, such as big brown bats (*Eptesicus fuscus*), California myotis (*Myotis californicus*), and long-legged myotis (*Myotis volans*). Large culverts at the southern end of the biological study area may also provide roosting habitat.

Environmental Consequences

Effects of the Build Alternative

California Glossy Snake, Coast Horned Lizard, San Joaquin Coachwhip

DIRECT EFFECTS

Construction could have direct effects on individuals of these species, if they are present in during construction. Construction-related ground disturbance (e.g., grading, grubbing, and excavation) and construction equipment and vehicle traffic may injure or kill individuals by running over them, crushing occupied burrows or other underground refuge, and displacing individuals, which would expose them to predators. Individuals may become entrapped in

excavated areas, pipes, or other equipment used for construction. The use of chemicals and hazardous substances during construction (e.g., oils, gasoline) may also cause mortality or injury if individuals enter habitat that has been contaminated by spills or other vehicle and equipment leaks. Individuals may be harmed by these substances through dermal contact and absorption, or consumption of contaminated prey.

Table 2.3.3-1 summarizes estimated permanent and temporary impacts on suitable habitat for California glossy snakes, coast horned lizards, and San Joaquin coachwhips.

Table 2.3.3-1. Impacts on California Glossy Snake, Coast Horned Lizard, and San Joaquin Coachwhip Upland Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0	<0.001
Weedy	5.45	6.15
Wild Oat Grassland	7.06	7.33
Total Impacts	12.51	13.48

INDIRECT EFFECTS

Soil compaction of the temporarily impacted area following project construction would reduce overall habitat suitability for these species. Displacement of small mammals (ground squirrels and gophers) would reduce availability of underground refuge. Temporary disturbance of annual grassland habitat and weedy lands would also reduce the prey base for these species.

STANDARDIZED MEASURES

The Caltrans standard specifications identified below, which are consistent with measures identified in the Chapter 5, *Conservation Strategy* in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, would ensure that there would be no adverse effect on these species. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described below under Avoidance, Minimization, and/or Mitigation Measures, would ensure the project would not result in adverse effects on these species.

CONDUCT PRECONSTRUCTION SURVEYS FOR SPECIAL-STATUS AMPHIBIAN AND REPTILE SPECIES

To avoid potential injury or mortality of special-status amphibian and reptile species, the project would retain a qualified biologist to conduct a preconstruction survey for special-status amphibians and reptiles no more than 24 hours prior to initial vegetation removal, grubbing, grading, and other initial ground-disturbing activities.

If at any time special-status species are observed within the biological study and have the potential to be harmed by active construction activities, as determined by the biological monitor, construction activities within the immediate area will cease until the special-status species has been allowed to leave the construction area on its own volition. If necessary, the special-status special status species may be relocated by a biological monitor, in compliance with applicable project permit requirements.

Information about the location of special-status amphibian and reptiles seen during the preconstruction survey will be included in the environmental awareness training and provided directly to the construction crew working in that area to ensure that areas where special-status animals were observed are inspected each day prior to the start of construction activities to ensure that no special-status animals are present. The area will be surveyed until suitable habitat is removed.

Western Burrowing Owl

DIRECT EFFECTS

Construction of the proposed project would result in direct permanent and temporary impacts on suitable nesting and foraging habitat for burrowing owl. If a nest is present in or near the construction area, construction activities during the nesting season (February 1 to August 31) could result in noise and vibration disturbance, leading to abandonment of suitable burrows or disturbance of normal breeding behaviors. Construction grading, excavation, and the movement of equipment and vehicles could injure or kill burrowing owl adults, nestlings, and eggs if present in burrows in project work areas. These activities could result in the incidental loss of eggs or nestlings or otherwise lead to nest abandonment. Construction activities taking place during the non-breeding season (September 1 to January 31) could disturb wintering burrowing owls, which could cause the birds to abandon burrows and overwintering habitat.

Table 2.3.3-2 summarizes estimated permanent and temporary impacts on western burrowing owl habitat in the biological study area.

Table 2.3.3-2. Impacts on Western Burrowing Owl Nesting and Foraging Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.55	7.72
Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

INDIRECT EFFECTS

Compaction of soils in the area could prevent or discourage occupancy by California ground squirrels and other small mammals, thereby decreasing the availability of potentially suitable burrows that owls could use. The buildout of the project would also fragment suitable habitat, potentially increase predation pressure, and create barriers to foraging areas and colonization opportunities. Further urban development of the area would potentially decrease the overall suitability of the habitat in the area.

STANDARDIZED MEASURES

Caltrans standard specifications shown below, which are consistent with measures identified in the Chapter 5, *Conservation Strategy* in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, would ensure that there would be no adverse effect on western burrowing owls. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described below under Avoidance, Minimization, and/or Mitigation Measures, would further ensure the project would not result in adverse effects to this species.

CONDUCT PRECONSTRUCTION SURVEYS FOR BURROWING OWL AND ESTABLISH DISTURBANCE BUFFERS AROUND OCCUPIED BURROWS, AND USE PASSIVE RELOCATION IF BURROWS CANNOT BE AVOIDED

A qualified biologist will conduct a preconstruction survey for burrowing owl 14 days prior to and within 24 hours of the start of ground-disturbing activities within suitable habitat.

- If an active burrow is identified near a proposed work area and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish a no-disturbance buffer that extends a minimum of 250 feet around the burrow. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow. Buffers may be modified based on the opinion of the biological monitor and in coordination with California Department of Fish and Wildlife taking into consideration site specific conditions (e.g., line of sight to activities, specific activities taking place).
- If burrowing owls are present within the direct disturbance area and cannot be avoided during the non-breeding season (September 1 through January 31), passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used. Passive relocation also may be used during the breeding season (February 1 through August 31) if a qualified biologist, coordinating with CDFW, determines through site surveillance that the burrow is not occupied by burrowing owl adults, young, or eggs. Passive relocation will be accomplished by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method). The one-way

doors will be left in place for a minimum of 1 week and will be monitored daily to ensure that the owls have left the burrow. The burrow will be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel during excavation to maintain an escape route for any animals that may be inside the burrow.

Standardized measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would further avoid and minimize impacts to burrowing owls.

Golden Eagle

DIRECT EFFECTS

The proposed project would have direct permanent and temporary impacts on golden eagle foraging habitat (annual grassland and weedy areas). The proposed project would not impact golden eagle nesting habitat.

Table 2.3.3-3 summarizes estimated permanent and temporary impacts on suitable golden eagle foraging habitat.

Table 2.3.3-3. Impacts on Golden Eagle Foraging Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.56	7.72
Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

INDIRECT EFFECTS

Increased human presence and noise from construction activities, and soil compaction may temporarily discourage small and medium sized mammals (the typical prey items of golden eagles) from using the biological study area, and thus may temporarily discourage golden eagles from foraging in the biological study area.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to conduct mandatory environmental awareness training for construction personnel and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to golden eagles. These measures are consistent with Chapter 5, *Conservation Strategy* of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described below under Avoidance, Minimization, and/or Mitigation Measures, would further ensure the project would not result in adverse effects to these species.

Loggerhead Shrike

DIRECT EFFECTS

If the proposed project is conducted during the nesting season (February 1 to August 31), construction activities could have direct effects on loggerhead shrikes potentially nesting in trees or shrubs in the biological study area. Removal or pruning of the trees and shrubs could result in destruction of active nests, including eggs, nestlings, or juveniles. Construction-related disturbances (e.g., equipment noise, presence of workers) could disrupt normal nesting behavior, resulting in nest abandonment and nest failure. Construction of the proposed project would result in direct permanent loss of and temporary impacts on suitable nesting and foraging habitat for loggerhead shrikes.

Table 2.3.3-4 summarizes estimated permanent and temporary impacts on suitable loggerhead shrike nesting and foraging habitat.

Table 2.3.3-4. Impacts on Loggerhead Shrike Nesting and Foraging Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Nesting: Number of trees potentially removed	1 tree	0 trees
Foraging: Ephemeral Drainage	0.02	0.01
Foraging: Weedy	9.55	7.72
Foraging: Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

INDIRECT EFFECTS

An increase in loggerhead shrikes being struck by vehicles is a potential indirect impact of the project. Shrikes flying across the on-ramps and off-ramps to access suitable foraging habitat would be exposed to increased vehicle traffic.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and to retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to loggerhead shrikes. Impacts on loggerhead shrikes would be further avoided by the following standard measures below, which are consistent with San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, and by participating in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described below under Avoidance, Minimization, and/or Mitigation Measures.

REMOVE VEGETATION DURING THE NONBREEDING SEASON AND CONDUCT PRECONSTRUCTION SURVEYS FOR NESTING MIGRATORY BIRDS, INCLUDING SPECIAL STATUS BIRDS

To the extent practicable, vegetation removal (including short annual grasses and ruderal vegetation) will occur during the non-breeding season for most migratory birds (generally between September 2 and February 14). If vegetation cannot be removed between September 2 and February 14, these areas will be surveyed as described below.

If construction activities are expected to begin during the nesting season (generally February 15 through September 1), a qualified biologist will conduct nesting surveys 7 days prior to the start of construction. Surveys will include a search of all vegetation (i.e., annual grassland, shrubs, trees), including ruderal areas, that provide suitable nesting habitat in the biological study area. If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the biological study area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until a biological monitor determines that the young have fledged and moved out of the project. The extent of these buffers will be determined by the qualified biologist and will depend on the level of noise or construction disturbance (including noise and vibration from pile driving), line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

White-Tailed Kite

DIRECT EFFECTS

If construction activities are conducted during the white-tailed kite nesting season (February to October), the activities could result in the disturbance of white-tailed kites. The project would not result in the loss of nesting habitat because nesting habitat does not occur within the biological study area. Project-related activities that result in take of white-tailed kites are not permitted under California Fish and Game Code Section 3511 because the white-tailed kite is a fully protected species.

Construction of the proposed project would result in the permanent loss of and temporary disturbance of suitable foraging habitat for white-tailed kite (consisting of weedy areas and annual grassland).

Table 2.3.3-5 summarizes estimated permanent and temporary impacts on suitable white-tailed kite foraging habitat.

Table 2.3.3-5. Impacts on White-Tailed Kite Foraging Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.55	7.72
Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

INDIRECT EFFECTS

The proposed project would fragment annual grasslands and could decrease foraging opportunities for white-tailed kites. Soil compaction and temporary displacement of small rodents (voles, field mice) and reptiles (fence lizards, alligator lizards, gopher snakes), would decrease overall availability of prey abundance for white-tailed kites. Development is correlated to negative reproductive success; studies have shown that successful nests in the Sacramento Valley were all more than 328 feet (100 meters) from a road and surrounded by natural vegetation and non-urban human development.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and to retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to white-tailed kites. Impacts on white-tailed kites would be further avoided by conducting preconstruction surveys and removing vegetation only during the nonbreeding season for nesting migratory birds, and by participating the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan as described below under Avoidance, Minimization, and/or Mitigation Measures.

American Badger

DIRECT EFFECTS

Construction of the proposed project would result in direct permanent and temporary impacts on suitable foraging, denning, or resting habitat for American badgers. Construction activities could result in noise and vibration disturbance leading to badgers temporarily avoiding the area. Staging and operation of construction equipment and vehicles within suitable grassland habitat could also injure or trap the species or accidentally strike or kill a badger, if present. Excavation or other ground-disturbing construction activity could crush a burrow and entomb a badger, if present in underground refuge. If badgers were denning in the biological study area and construction activities occurred when litters are born (generally March and April), it could disturb denning badgers and could cause den abandonment. The proposed project would result in temporary impacts on movement corridors during the construction phase and result in permanent loss of some foraging habitat.

Table 2.3.3-6 summarizes estimated permanent and temporary impacts on suitable American badger habitat.

Table 2.3.3-6. Impacts on American Badger Foraging, Resting, Movement, and Denning Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.55	7.72
Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

INDIRECT EFFECTS

The buildout of the project would fragment the annual grassland and potentially create movement barriers for American badgers. Soil compaction in the area could prevent or discourage occupancy by small mammals, thereby decreasing the availability of prey for badgers.

STANDARDIZED MEASURES

Caltrans standard specifications shown below, which are consistent with measures identified in the Chapter 5, *Conservation Strategy* in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, would ensure that there would be no adverse effect on American badgers. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described below under Avoidance, Minimization, and/or Mitigation Measures, would further ensure the project would not result in adverse effects to this species.

PRECONSTRUCTION SURVEY FOR AND AVOIDANCE OF SPECIAL-STATUS MAMMALS, INCLUDING BADGERS, AND SAN JOAQUIN KIT FOX AND DENS

A qualified biologist will conduct a preconstruction survey, within the limits of proposed temporary and permanent impact in grassland and ruderal habitat, no more than 30 days before the beginning of ground disturbance or any activity likely to affect American badger and San Joaquin kit fox. The biologist will conduct den searches by systematically walking transects spaced 30 to 100 feet apart through the biological study area. Transect distance will be determined on the basis of the height of vegetation such that 100 percent visual coverage of the ground disturbing area is achieved. If dens are found during the survey, the biologist will map the location of each den as well as record the size and shape of the den entrance; the presence of tracks, scat, and prey remains; and if the den was recently excavated. The status of the San Joaquin kit fox den as defined by United States Fish and Wildlife and California Department of Fish and Wildlife will also be determined and recorded. Dens will be classified in one of the following four den status categories:

Potential den: Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is sufficient to conclude that it is being used or has been used by a San Joaquin kit fox. Potential dens comprise: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for San Joaquin kit fox use.

Known den: Any existing natural den or artificial structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records; past or current radio telemetry or spotlighting data; San Joaquin kit fox signs such as tracks, scat, and/or prey remains; or other reasonable proof that a given den is being or has been used by a San Joaquin kit fox.

Natal or pupping den: Any den used by San Joaquin kit fox to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more San Joaquin kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which San Joaquin kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two; therefore, for purposes of this definition either term applies.

Atypical den: Any artificial structure that has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

If potential American badger and San Joaquin kit fox dens are present, their disturbance and destruction will be avoided. Results of the survey will be submitted to United States Fish and Wildlife and California Department Fish and Wildlife within one week of the completion of the survey and prior to the beginning of ground disturbance and/or construction activities likely to affect American badger and San Joaquin kit fox.

If potential American badger dens are located within the proposed work area and cannot be avoided during construction, a qualified biologist will determine if the dens are occupied or were recently occupied using remote cameras, media tracking, or methodology coordinated with California Department of Fish and Wildlife. If unoccupied, the qualified biologist will request permission from California Department of Fish and Wildlife to temporarily plug the burrow entrance with sand bags to prevent badgers from re-using them during construction, and or if necessary, to collapse these dens by hand. If occupied, the biologist will consult with California Department of Fish and Wildlife regarding best practices for encouraging the badger(s) to move to alternate dens outside the work areas, including excavation or construction of artificial dens.

Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas are active.

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to American badgers.

Townsend's Big-Eared Bat and Pallid Bat

DIRECT EFFECTS

The proposed project may disturb bats roosting in suitable roosting habitat. Construction activities could be conducted during the bat maternity season (April 1 through September 15). Disturbance of structures providing suitable roosting habitat could result in displacement of roosting special-status bats, if present during disturbance of structures. Construction noise, lights, or vibration could displace bats, causing them to relocate to another roost site, and potentially compete with other bats for roost sites or expose them to predators if alternative roosts are not available. Roosting bats, if present, would be temporarily disturbed by construction activities that disturb suitable roost habitat. Because no suitable roost habitat would be removed, no permanent impacts would result.

INDIRECT EFFECTS

A potential indirect impact of the proposed project would be the degradation of foraging habitat for special-status bats from the wider road, because bat activity near large roads has been found to be lower than activity at 950 feet from large roads.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to Townsend's big-eared bats and Pallid bats. Impacts on bats would be further avoided by the following measures to identify suitable roosting habitat for bats and implement avoidance and protective measures. These measures are consistent with San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures for Townsend's big-eared bat. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described below under Avoidance, Minimization, and/or Mitigation Measures, would further ensure the project would not result in adverse effects on Townsend's big-eared bat and would also benefit pallid bats, which are not covered under the plan.

IDENTIFY SUITABLE ROOSTING HABITAT FOR BATS AND IMPLEMENT AVOIDANCE AND PROTECTIVE MEASURES

Trees

- To avoid and minimize impacts on maternity roosts and hibernating bat species, trees should be removed or pruned between September 1 and October 30.
- A qualified biologist (i.e., a biologist with experience with tree roosting habitats and life histories of local bats) will examine trees for suitable bat roosting habitat (e.g., large tree cavities, loose or peeling bark, basal hollows, large snags) 7 to 14 days before tree removal or pruning. Trees will also be evaluated to determine if they provide suitable habitat for foliage roosting bats.
- If the biologist determines that trees to be removed or pruned provide suitable bat roosting habitat, the biologist will monitor tree removal or pruning. The biologist will make recommendations to implement measures to avoid and minimize disturbance or mortality of bats, such as conducting pruning and removal during the late afternoon or evening when it is closer to the time that bats would normally arouse, removing the tree in pieces rather than felling an entire tree, and gently shaking each tree with construction equipment and waiting several minutes before felling trees or removing limbs to allow bats time to arouse and leave the tree. The biologist will search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to CDFW. The biologist will prepare a biological monitoring report, which will be provided to the project lead and CDFW.

Structures

- Preconstruction roost surveys for bats will be conducted by a qualified biologist 14 days prior to structure modification. The type of preconstruction survey (i.e. emergence survey, acoustic survey etc.) will be determined by the qualified biologist in discussion with Caltrans. If bat roosts are observed, structure disturbance will be postponed until bats have relocated or exited the structure.
- If roost habitat needs to be physically altered, then bat exclusion will be considered. If possible, roost entrances will be fitted with one-way doors or other exclusionary devices that allow bats to exit but not enter, to encourage bats to relocate.
- If a maternity roost is determined, the structure with the maternity roost will be avoided and bat relocation efforts will be postponed until young have fledged.
- If roost avoidance is not feasible, depending on the species of bat present, size of the bat roost, and timing of construction activities, additional

protective measures may be necessary. Appropriate measures will be determined in coordination with the California Department of Fish and Wildlife.

Special-Status and Other Migratory Birds

DIRECT EFFECTS

Direct impacts on migratory nesting birds would be the same as identified for white-tailed kites, loggerhead shrikes, and golden eagles above. The project has the potential to affect nesting migratory birds either through direct injury or mortality during ground-disturbing activities (clearing of weedy and annual grassland vegetation, excavation) or by disrupting normal behaviors, including nesting. Tree removal or pruning may be required for construction of the proposed project. If construction activities are conducted during the nesting season of migratory birds (generally February 1 through August 31), project activities could result in injury to or mortality of nesting birds. Removal or destruction of nests or construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment.

INDIRECT EFFECTS

Temporary disturbances of annual grassland and weedy areas would decrease the availability of ground nesting habitat for some species of nesting birds. Soil compaction and removal of vegetation cover could reduce invertebrate prey abundance and negatively affect food resources for birds nesting in the biological study area.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to special-status and other migratory birds. Impacts on special-status and other migratory birds would be further avoided by the following measures.

REMOVE VEGETATION DURING THE NONBREEDING SEASON AND CONDUCT PRECONSTRUCTION SURVEYS FOR NESTING MIGRATORY BIRDS, INCLUDING SPECIAL-STATUS BIRDS

To the extent practicable, vegetation removal (including short annual grasses and weedy vegetation) will occur during the non-breeding season for most migratory birds (generally between September 2 and February 14). If vegetation cannot be removed between September 2 and February 14, these areas will be surveyed as described below.

- If construction activities are expected to begin during the nesting season (generally February 15 through September 1), a qualified biologist will

conduct nesting surveys 7 days prior to the start of construction. Surveys will include a search of all vegetation (i.e., annual grassland, shrubs, trees), including weedy areas, that provide suitable nesting habitat in the biological study area. If no active nests are detected during these surveys, no additional measures are required.

- If an active nest is found in the biological study area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until a biological monitor determines that the young have fledged and moved out of the project. The extent of these buffers will be determined by the qualified biologist and will depend on the level of noise or construction disturbance (including noise and vibration from pile driving), line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

Colonies of Roosting Non-Special-Status Bats

Direct and indirect impacts on colonies of roosting non-special-status bats would be the same as those described for Townsend's big-eared bats and pallid bats.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to colonies of roosting non-special-status bats. Impacts on colonies of roosting non-special-status bats would be further avoided by conducting preconstruction surveys for suitable roosting habitat and implementing avoidance measures if necessary

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no temporary or permanent impacts on special-status animal species.

Avoidance, Minimization, and/or Mitigation Measures

The standardized measures, discussed in Section 2.3.1, Section 2.3.2, and Section 2.3.3 and the avoidance and minimization measures listed below would help to avoid and reduce the severity of effects on animal species threatened and endangered species.

Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.

The project is covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and measures detailed in Chapter 5, Compensation Strategy, will be implemented. The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan has been incorporated into this document by reference and is available for review online at <https://www.sjcog.org/DocumentCenter/View/5/Habitat-Planpdf?bidId=>. The plan includes incidental take coverage. With participation in this plan no further compensatory mitigation for special-status species is necessary.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the United States Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows

for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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

San Joaquin County Multi-Species Habitat and Open Space Conservation Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan was adopted by the San Joaquin Transportation Authority on November 14, 2000. The key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan is to provide a strategy for balancing the need to conserve Open Space and the need to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish, and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA), providing and maintaining multiple open-spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to project proponents and society at large.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non- open space uses which affect the plant, fish and wildlife species covered by the Plan (San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Covered Species). The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-

agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which are covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan.

San Joaquin Council of Governments administers the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, a voluntary mitigation plan, and holds the mitigation land. Project applicants are given the option of participating in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan as a way to streamline compliance with required local, state, and federal laws regarding biological resources, and typically avoid having to approach each agency independently. Applicants pay mitigation fees or provide land in-lieu of fees on a per-acre basis, as established by the San Joaquin Council of Governments according to the measures needed to mitigate impacts to the various habitat and biological resources.

Affected Environment

The following discussion is based upon the Natural Environment Study completed for the project in November 2019 and updated in an addendum in June 2020.

Consultation under Section 7 of the ESA was conducted for potential effects of the proposed project on the federally-listed species that could occur in the project area. Species lists were obtained from United States Fish and Wildlife Service (December 3, 2018), National Oceanic and Atmospheric Administration Fisheries Service (May 3, 2019). The biological study area is not located within United States Fish and Wildlife Service-designated critical habitat, or within anadromous fish critical habitat under the National Oceanic and Atmospheric Administration Fisheries Service. There is no suitable aquatic habitat for fish species or essential fish habitat within the project area.

A Biological Assessment was submitted to the United States Fish and Wildlife Service on December 4, 2019, and a request for additional information was received and addressed. United States Fish and Wildlife Service revised the effects determination for California red-legged frog to may affect, likely to adversely affect. The City is currently seeking coverage under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. A

review form was submitted to the San Joaquin Council of Governments to request coverage on May 28, 2020.

The proposed project is consistent with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, as amended, as reflected in the conditions of project approval for this proposal. Pursuant to the Final Environmental Impact Report/Study for the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, dated November 15, 2000, and certified by the San Joaquin Council of Governments on December 7, 2000, implementation of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan is expected to reduce impacts to biological resources resulting from the proposed project to a level of less-than-significant. That document is hereby incorporated by reference and is available for review during regular business hours at the San Joaquin Council of Governments (555 E. Weber Avenue, Stockton, CA 95202) or online at: www.sjcog.org. Five state-listed wildlife species; palmate-bracted bird's beak, California tiger salamander, Swainson's hawk, tricolored blackbird, and San Joaquin kit fox have a potential to occur in the biological study area. To date, there has been no California Endangered Species Act consultation with California Department of Fish and Wildlife for the proposed project. With implementation of standardized measures and avoidance and minimization measures described below and in the Natural Environment Study, it is anticipated that take will be avoided, and no incidental take permit would be necessary.

Data from the California Natural Diversity Database, National Oceanic and Atmospheric Administration Fisheries Service, United Services Fish and Wildlife, and California Native Plant Society were reviewed. Listed species with the potential to occur in the biological study area are listed in Table C-2 in Appendix C. Suitable habitat for one endangered plant species, palmate-bracted bird's-beak, occurs in the biological study area. Suitable habitat for five threatened or endangered wildlife species occurs in the biological study area—California red-legged frogs, California tiger salamanders (Central California tiger salamanders, specifically), Swainson's hawk, tricolored blackbirds, and San Joaquin kit foxes.

Reconnaissance-level field surveys of the biological study area were conducted on March 8, 2019 and August 27, 2019 to document existing conditions and evaluate habitat suitability for threatened and endangered plant and animal species. Biologists walked parallel transects through the biological study area where permission to enter was obtained and recorded all wildlife habitat and biological resources observed. Transects were spaced about 15 to 30 feet apart. For areas where permission to enter was not obtained, biologists drove publicly accessible roads and used binoculars to scan the biological study area out to the field of view.

An additional 0.5 mile buffer was included from the project limits to establish a biological study area for Swainson's hawks to look for suitable Swainson's hawk nesting trees and to assess potential direct and indirect effects of the proposed project on Swainson's hawk habitat. All trees that were accessible via public roads or, where permission was obtained to enter the property, were examined for their potential to provide suitable nesting habitat.

The biological study area contains two seasonal wetlands that are not connected to navigable waters, and two ephemeral drainages that may be connected to navigable waters. No suitable aquatic habitat for fish is present within the biological study area. Therefore, there is no further discussion of fish species in this document.

Palmate-bracted Bird's-Beak

Palmate-bracted bird's-beak is listed as an endangered species under the Federal and State Endangered Species Acts. Suitable habitat for this species is found in one portion of the biological study area. Botanical surveys conducted in the blooming period, from May to October, and the species was not observed.

California Red-Legged Frog

The California red-legged frog is listed as a threatened species under the Federal Endangered Species Act and is a California species of special concern. Focused field surveys for California red-legged frogs were not conducted; however, all accessible habitat was evaluated for California red-legged frog habitat suitability. California red-legged frogs were not observed during the field surveys.

The biological study area is within, but on the edge of, the known range of California red-legged frogs. There are numerous California Natural Diversity Database records for the species within 10 miles of the biological study area, with the closest occurrence (from 2001), located within 500 feet of the biological study area. The biological study area is not within designated critical habitat for California red-legged frogs.

California red-legged frogs breed in lowland and foothill streams or water associated with emergent wetlands (such as cattails, tule, or hard stem bulrush) or overhanging willows, including livestock ponds. No aquatic habitat, breeding or non-breeding, is within the biological study area.

Suitable dispersal habitat is present within the biological study area, particularly west of I-580. The upland habitat is characterized by low disturbance annual grassland and weedy vegetation. The grassland west of I-580 is contiguous with a larger expanse of undisturbed grassland west and southwest of the biological study area. Ground squirrel burrow complexes and other small mammal burrows also provide underground refuge for California red-legged frogs. The weedy vegetation and annual grasslands that make up

most of the biological study area, particularly west of I-580, provides suitable seasonal migration/dispersal and upland habitat for California red-legged frogs. Although there is suitable upland habitat for California red-legged frogs in the northwestern and southwestern portion of the biological study area, International Parkway may act as a potential barrier to movement between the northern and southern portions of the biological study area.

A narrow strip of grass and weedy vegetation within, between, and east of I-580 and west of the California Aqueduct, is generally not suitable upland or dispersal habitat for California red-legged frogs because it is isolated from larger, suitable, or occupied breeding and upland habitat. The interstate on-ramps and off-ramps are also barriers to movement. Although grasslands around I-580 and east of the interstate are generally not suitable for California red-legged frogs, the species has been recorded breeding next to of the California Aqueduct; the record is within 0.5 mile of the biological study area.

The California Aqueduct, industrial complexes, and urban development are located east of I-580. Suitable breeding habitat for California red-legged frogs is absent east of I-580; however, there is an occurrence of breeding California red-legged frogs within one mile of the biological study area (Occurrence Number 758). The potential for California red-legged frogs to cross the California Aqueduct into the eastern portion of the biological study area is low.

California Tiger Salamander

The California tiger salamander is listed as a threatened species under the Endangered Species Act and the California Endangered Species Act. California tiger salamanders use both aquatic and terrestrial habitat and spends the most of its life underground. California tiger salamanders can be found in permanent ponds, but permanent aquatic sites are less likely to be used for breeding unless they lack fish predators or breeding bullfrog populations. The species is not known to breed in streams or rivers; however, breeding populations have been reported in ditches with seasonal wetlands and in slow-moving swales and creeks near other suitable breeding habitat. California tiger salamanders also require dry-season refuge sites near breeding sites (generally within 1 mile). California ground squirrel burrows are important refuge sites for adults and juveniles, but the species is also known to use pocket gopher burrows. Upland habitat surrounding known California tiger salamander breeding pools is typically characterized by grassland, oak savanna, or oak woodland. California tiger salamanders have been reported to migrate up to 1.3 miles (2.2 kilometers) between breeding ponds and upland habitat. Average migration distances are estimated to be 1,844 feet (562 meters), with an estimate that 95 percent of the population occurs within 1.16 miles (1.86 kilometers) of the breeding pond.

The biological study area is within the known range of California tiger salamanders, but outside of critical habitat for California tiger salamander.

The California tiger salamander is a distinct population segment that could occur in the biological study area.

No breeding habitat for California tiger salamanders was identified in the biological study area. There are no ponds in the biological study area that hold water at the appropriate time and for an adequate duration for California tiger salamanders to reproduce. There is a known breeding pond located 2.55 miles from the biological study area. One feature located 1.24 miles from the biological study area may provide suitable breeding habitat, but no California tiger salamander has been observed at that location. No protocol level surveys were conducted for California Tiger Salamander

Annual grassland within the biological study area and west of I-580 would be considered suitable upland habitat for California tiger salamanders because potentially suitable breeding habitat is within 1.24 miles of the biological study area. Grasslands east of I-580 would not be suitable upland habitat for tiger salamanders because the grassland is fragmented from larger suitable, occupied habitat and surrounded by development that California tiger salamanders would not be able to successfully migrate across.

From north to south, the upland habitat is crossed by Patterson Pass Road. Patterson Pass Road is a two-lane road and is bordered by weedy vegetation. Because the road does not have a solid road divider, curbs, or gullies, California tiger salamanders may be able to travel across the road when suitable conditions are present (i.e., on rainy nights with little vehicle traffic). From east to west, the biological study area is crossed by I-580, which is an impassible movement barrier for California tiger salamanders. The Union Pacific railroad tracks are also a potential movement barrier.

Because California tiger salamanders have been reported to migrate only up to 1.3 miles (2.2 kilometers) between breeding ponds and upland habitat, and the closest known breeding occurrence is about 2.55 miles from of the biological study area and other potential sites are also distant, there is low potential for California tiger salamanders to occur within the biological study area.

Swainson's Hawk

The Swainson's hawk is listed as threatened under the California Endangered Species Act. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation. Most Swainson's hawks spend winter in South America. Swainson's hawks arrive in California during early March to establish nesting territories and breed. They usually nest in large, mature trees. Most nest sites (87 percent) in the Central Valley are found in riparian habitats, primarily because trees are more available there. Swainson's hawks

also nest in mature roadside trees and in isolated trees in agricultural fields or pastures. The breeding season is from March through August.

Protocol-level surveys for Swainson's hawks were not conducted; however, all trees within accessible parcels in the biological study area established for Swainson's hawks were accessed for their suitability to provide nesting habitat for Swainson's hawks. Swainson's hawks and hawk nests were not observed during the field survey. Potentially suitable Swainson's hawk nest trees were not observed within the biological study area but were observed within 0.5 mile of the biological study area. Inaccessible parcels could contain trees that provide suitable nesting opportunities for Swainson's hawks.

About four individual trees or tree clusters within 0.5 mile of the biological study area for Swainson's hawks may provide suitable nesting habitat for the species. Swainson's hawks could forage in the expansive annual grassland, weedy areas, and low-growing agricultural land that occurs in the biological study area, particularly west of I-580. Strips of annual grassland east of I-580 and west of the California Aqueduct may also provide foraging opportunities for hawks, but to a lesser extent than the larger grassland west of I-580. Grassland located between the northbound and southbound lanes of I-580 and between the on-ramps and off-ramps of the interstate would not provide suitable foraging habitat because these areas are likely not occupied by enough prey items.

The nearest recent record of an active Swainson's hawk nest (Occurrence Number 1215) is about 3.2 miles east of the biological study area.

Tricolored Blackbird

The tricolored blackbird is listed as a threatened species under the California Endangered Species Act. The tricolored blackbird is a highly colonial species that is largely endemic to California. Tricolored blackbird breeding colony sites require open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. Tricolored blackbird breeding colonies occur in freshwater marshes dominated by tules and cattails, in Himalayan blackberry, and in silage and grain fields. The breeding season is from late February to early August. Tricolored blackbird foraging habitats in all seasons include annual grasslands, dry seasonal pools, agricultural fields (such as large tracts of alfalfa with continuous mowing schedules, and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also forage occasionally in riparian scrub habitats and along marsh borders. Weed-free row crops and intensively managed vineyards and orchards do not serve as regular foraging sites. Most tricolored blackbirds forage within 3 miles of their colony sites but commute distances of up to 8 miles have been reported.

Focused surveys for tricolored blackbirds were not conducted and no tricolored blackbirds were observed in the accessible parcels during the field survey; however, there are 21 California Natural Diversity Database records within 10 miles of the biological study area, the closest about 0.4 mile away. No suitable freshwater wetland, upland bramble habitat, or milk thistle patch were observed in accessible parcels during the field survey. Inaccessible parcels were not surveyed and may contain suitable foraging habitat for blackbirds. Tricolored blackbird foraging habitat is present in nonnative annual grassland, weedy areas, and seasonal wetland in the biological study area, particularly west of I-580, and between I-580 and the California Aqueduct. Grasslands and weedy areas immediately next to I-580 northbound and southbound lanes and between the on-ramps and off-ramps of the interstate would provide marginally suitable foraging habitat for the tricolored blackbird.

San Joaquin Kit Fox

The San Joaquin kit fox, endemic to California, is a federally endangered and a state-listed threatened species. The species historically occurred in alkali scrub/shrub and arid grasslands throughout the level terrain of the San Joaquin Valley floor from southern Kern County north to Tracy, and up into more gradual slopes of the surrounding foothills and adjoining valleys of the interior coast ranges. The species is currently distributed through the valley bottom and foothills from southern Kern County north to central Contra Costa, eastern Alameda and southwestern San Joaquin Counties on the west, and near La Grange in Stanislaus County on the east side of the Central Valley.

San Joaquin kit foxes occur in arid habitats typically in relatively flat terrain or in gently sloping hills, washes, drainages, and roadside berms characterized by sparse or absent shrub cover, sparse ground cover, and short vegetation; they are also found in California annual grassland habitat and altered habitat. Occupied habitats are usually associated with open, level, loose-textured sandy soils to facilitate subsurface den construction, as well as suitable prey base. Shallow soils near bedrock, soils with high-water tables, and impenetrable hardpan layers are generally avoided. Kit foxes dig burrows and modify burrows dug by other animals, such as California ground squirrel. Within the northern limit of the species range, kit foxes do not seem to construct their own den and appear to enlarge California ground squirrel burrows. The San Joaquin kit fox is primarily nocturnal, and its prey consists largely of nocturnal species such as kangaroo rats (*Dipodomys* spp.), pocket mice (*Perognathus* spp.), and white-footed mice (*Peromyscus* spp.). In the northern portions of its range California ground squirrels, rabbits (*Sylvilagus* spp.), hares (*Lepus* spp.), and insects are consumed.

Focused surveys for San Joaquin kit foxes were not conducted; however, parallel transects, spaced 20 to -30 feet apart were walked through all accessible parcels and scanned for potentially suitable kit fox dens and for kit fox signs (i.e. key hole shaped den opening of at least 4 inches, with dirt

apron, scat piles or similar signs of use). Kit foxes and suitable kit fox dens were not observed during the field survey in accessible parcels. Inaccessible parcels were not surveyed and may contain suitable kit fox habitat and or dens. There are numerous California Natural Diversity Database records for San Joaquin kit foxes within 10 miles of the biological study area, with the closest record (from 1994) overlapping with the northern portion of the biological study area; all records for San Joaquin kit foxes from the area are dated 2002 or earlier. Another record, from 1999, is north of Patterson Pass Road. These California Natural Diversity Database records represent the satellite population within the northernmost portion of species' range.

The biological study area is within the northern limit of the species' range and is within a narrow band of suitable habitat that occurs in San Joaquin County and northeastern Alameda County. Although suitable habitat is present, habitat suitability in the northern range is patchy and limited because of the varied land use and topography. However, low rolling hills of annual grassland and open habitat is present in the biological study area, particularly west and southwest of I-580. Annual grasslands between I-580 and the California Aqueduct may also provide marginally suitable movement and dispersal habitat for kit fox. Grasslands immediately along I-580 northbound and southbound lanes and within the on-ramps and off-ramps are not suitable for kit fox denning. Ground squirrel and small mammal complexes were also observed within the biological study area. The soil is generally friable, although it possibly contains more clay loam than do soils in the more southern San Joaquin kit fox range. The biological study area and contiguous undeveloped land west of the biological study area provides suitable foraging and movement habitat for the species. The biological study area has also been identified in regional studies as a potential movement corridor for the San Joaquin kit fox. Because of the location of the biological study area (i.e. northern limit of species' range), the biological study area's proximity to a heavily travelled interstate, and patchy habitat suitability, there is low potential for the San Joaquin kit fox to den within the biological study area.

Environmental Consequences

Effects of the Build Alternative

California Red-Legged Frog

DIRECT EFFECTS

California red-legged frogs could be directly affected by construction activities within suitable upland habitat, if they are present. If frogs are present within the construction work area, they could be inadvertently killed or wounded by construction vehicles and construction personnel. Frogs could be trapped in burrows and harmed from accidental spills of construction related fluids (e.g., gasoline and other petroleum-based products). Construction activity may displace individuals, exposing California red-legged frog to predation and/or desiccation. There would be a temporary impact on the movement corridor or dispersal habitat during the construction period. Construction of final buildout

could result in permanent movement barriers. Construction staging, work areas, and equipment storage, would directly but temporarily affect availability of upland habitat for California red-legged frog. Construction activities would take place in upland dispersal habitat and would result in direct, permanent impacts.

Table 2.3.4-1 summarizes estimated permanent and temporary impacts on suitable California red-legged frog upland dispersal habitat.

Table 2.3.4-1. Impacts on California Red-Legged Frog Upland Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0	<0.001
Weedy	5.45	6.15
Wild Oat Grassland	7.06	7.33
Total Impacts	12.51	13.48

INDIRECT EFFECTS

Construction activities in California red-legged frog habitat could result in indirect effects on upland habitat next to the construction work area. Exposed soil surfaces left unvegetated have the potential to result in increased sedimentation, which could reduce the suitability of California red-legged frog habitat next to the construction area by filling in the seasonal wetland feature. Accidental spills of toxic fluids also could result in the subsequent mortality of California red-legged frogs if these substances spread through the construction area and California red-legged frogs are exposed to the material. Displacement of small mammals may result in decreased availability of underground refuge.

The potential for California red-legged frogs to occur within the biological study area is low. The proposed project may affect, but is not likely to adversely affect, the federally threatened California red-legged frog through the loss of suitable dispersal (upland) habitat, in accordance with the definition of take in the Federal Endangered Species Act.

STANDARD SPECIFICATIONS

Caltrans standard specifications to conduct preconstruction surveys for special-status amphibians, including California red-legged frogs and implement measures to remove individuals from the area if present would ensure that there would be no adverse effect on California red-legged frogs. Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts on California red-legged frogs. These measures are consistent with Chapter 5, Conservation Strategy of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures.

Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described under Avoidance, Minimization, and/or Mitigation Measures in Section 2.3.3, would further ensure the project would not result in adverse effects to California red-legged frog.

Palmate-bracted Bird's-Beak

There are no anticipated impacts to Palmate-bracted bird's beak as a result of the proposed project.

California Tiger Salamander

DIRECT EFFECTS

The proposed project would result in direct temporary and permanent effects on upland habitat for California tiger salamanders. Construction activities (e.g., grading, excavation) and creation of a construction material and equipment staging area would directly affect upland habitat for California tiger salamanders. The proposed project may result in mortality or, injury of California tiger salamanders, reduce available habitat, and result in displacement of juvenile and adult California tiger salamanders if the species is present within subterranean refugia (small mammal burrows or soil cracks) in weedy areas or annual grassland habitat in the biological study area during project construction. Construction activities may crush small mammal burrows and soil cracks occupied by California tiger salamanders and could displace the species, exposing them to predation and dryness. Trenches or excavation pits left open overnight could also entrap the species. The project would result in permanent and temporary impacts on California tiger salamander upland habitat.

Table 2.3.4-2 summarizes estimated permanent and temporary impacts on suitable California Tiger Salamander upland habitat.

Table 2.3.4-2. Impacts on California Tiger Salamander Upland Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0	<0.001
Weedy	5.45	6.15
Wild Oat Grassland	7.06	7.33
Total Impacts	12.51	13.48

INDIRECT EFFECTS

Potential indirect effects on California tiger salamanders could result from ground-disturbing activities associated with construction of the project. Construction activities also have the potential to result in degradation of upland habitat from leaking or accidental chemical or petroleum-based products associated with equipment and vehicles used during construction. Construction activities may displace or eradicate small mammals that excavate and create subterranean refuge for California tiger salamanders,

thereby decreasing suitable burrows for the species to use the upland habitat. Widening the road and building additional on-ramps and off-ramps would also create permanent physical obstacles and increase habitat fragmentation in the project region. Habitat fragmentation reduces habitat and population connectivity and creates dispersal and migration barriers for species.

Roads can prevent California tiger salamanders from migrating to new breeding habitat or prevent them from returning to breeding habitat and underground burrows. According to the United States Fish and Service Wildlife, I-580 from Pleasanton to Tracy has created an impassable barrier for California Tiger Salamanders from the western edge of San Joaquin County through Alameda County.

The potential for California tiger salamanders to occur in the biological study area is low. The proposed project may affect, and is likely to adversely affect, the federally threatened Central California tiger salamander through the loss of suitable upland habitat, in accordance with the definition of take in the Federal Endangered Species Act.

STANDARDIZED MEASURES

Caltrans standard specifications to conduct preconstruction surveys for special-status amphibians, including California tiger salamanders and implement measures to remove individuals from the area if present would ensure that there would be no adverse effect on California tiger salamanders. Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts on California tiger salamander. These measures are consistent with Chapter 5, *Conservation Strategy* of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described under Avoidance, Minimization, and/or Mitigation Measures in Section 2.3.3, would further ensure the project would not result in adverse effects on California tiger salamander.

Swainson's Hawk

DIRECT EFFECTS

The proposed project would not result in the removal of suitable nesting trees, but noise from construction (including pile driving) could disturb nesting and foraging hawks. If construction is conducted during nesting season (from May to August), this disturbance could result in the loss of fertile eggs or nestling or lead to nest abandonment. There is an existing level of noise in the biological study area from vehicle traffic and farm equipment, but the construction noise would represent a substantial increase over existing conditions. Suitable nesting trees are located approximately 0.5 mile from the

project area, and noise dissipates over distance, somewhat reducing this temporary impact on Swainson's hawk. The project would not result in permanent impacts on nesting habitat.

Construction of the proposed project would result in permanent loss and temporary disturbance of suitable Swainson's hawk foraging habitat. The impacts on annual grassland and weedy areas would reduce the amount of available foraging habitat in the biological study area and would result in permanent loss of some foraging habitat in the region.

Permanent and temporary impacts on potential Swainson's hawk foraging habitat are summarized in Table 2.3.4-3.

Table 2.3.4-3. Impacts on Swainson's Hawk Foraging Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.55	7.72
Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

Due to the relative minimal amount of permanent foraging habitat loss, compared with the amount available in the project vicinity, the loss would not be substantial and would not adversely affect foraging Swainson's hawks.

INDIRECT EFFECTS

The increased presence of vehicles and human activity may potentially degrade the surrounding undeveloped habitat through the introduction of trash and debris, resulting in increased predator presence. Compacted ground and increased noise from construction activity could temporarily deter the presence of small mammals, affecting prey availability for Swainson's hawks.

STANDARDIZES MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas would avoid and minimize impacts to Swainson's hawks. Impacts on Swainson's hawk would be further avoided by conducting focused surveys for nesting birds prior to construction and implementation of protective measures during construction. These measures are consistent with Chapter 5, *Conservation Strategy* of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described under Avoidance, Minimization, and/or Mitigation Measures in Section 2.3.3, would

further ensure the project would not result in adverse effects on Swainson’s hawk.

Tricolored Blackbird

DIRECT EFFECTS

If construction activities are conducted during the tricolored blackbird nesting season (late February to early August), project activities could result in the disturbance of tricolored blackbirds. Construction disturbance during the nesting season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Construction of the proposed project would result in direct permanent loss of and temporary impacts on suitable foraging habitat (nonnative annual grassland and weedy areas) for tricolored blackbirds.

Table 2.3.4-4 summarizes estimated permanent and temporary impacts on suitable tricolored blackbird foraging habitat.

Table 2.3.4-4. Impacts on Tricolored Blackbird Foraging Habitat

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.55	7.72
Annual Grassland	13.38	14.00
Seasonal Wetland	0.01	0
Total Impacts	22.96	21.73

INDIRECT EFFECTS

Compaction of soils in the area could decrease abundance of insect resources (e.g. grasshoppers, beetles, butterflies), thereby decreasing the availability of food resources that are required to sustain blackbird colonies. The buildout of the project would also fragment suitable foraging habitat and potentially increase predation pressure.

STANDARDIZED MEASURES

Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas will be implemented to avoid and minimize impacts on tricolored blackbirds. Impacts on tricolored blackbirds would be further avoided by a standardized measure limiting vegetation removal to the nonbreeding season for migratory birds. These measures are consistent with Chapter 5, *Conservation Strategy* of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described under Avoidance,

Minimization, and/or Mitigation Measures in Section 2.3.3, would further ensure the project would not result in adverse effects on tricolored blackbird.

San Joaquin Kit Fox

DIRECT EFFECTS

Construction of the proposed project would result in direct permanent and temporary impacts on suitable foraging habitat and movement corridor for San Joaquin kit foxes. Construction activities could result in noise and vibration disturbance leading to kit foxes temporarily avoiding the area. Staging and operation of construction equipment and vehicles within suitable annual grassland habitat could also injure or trap the species or accidentally strike or kill a kit fox, if present. Excavation or other ground-disturbing construction activity could entrap a kit fox or entomb it if it were taking refuge in dens present in the work area. The proposed project would result in temporary impacts on movement corridor during the construction phase and result in permanent loss of foraging habitat.

Table 2.3.4-5 summarizes estimated permanent and temporary impacts on suitable San Joaquin kit fox habitat.

Table 2.3.4-5. Impacts on San Joaquin Kit Fox Foraging Habitat and Movement Corridor

Habitat Type	Permanent (acres)	Temporary (acres)
Ephemeral Drainage	0.02	0.01
Weedy	9.55	7.72
Wild Oat Grassland	13.38	14.00
Total Impacts	22.95	21.73

INDIRECT EFFECTS

The buildout of the project would fragment the annual grassland and contribute to movement barriers and loss of wildlife corridors for San Joaquin kit foxes. Soil compaction in the area could prevent or discourage occupancy by small mammals, thereby decreasing the availability of prey abundance and suitable dens for kit foxes, as many portions of the northern range may be unsuitable for kit foxes if ground squirrels are not present.

Based on the lack of suitable burrows and unknown occupancy within the project region (no recent sightings), the proposed project is unlikely to substantially affect San Joaquin kit foxes. The proposed project may affect, but is not likely to adversely affect, the federally threatened San Joaquin kit fox.

STANDARDIZED MEASURES

Caltrans standard specifications to conduct preconstruction surveys for special-status mammals and dens and implement avoidance or protection

measures as necessary would ensure that there would be no adverse effect on San Joaquin kit foxes. Standardized and avoidance measures described in Section 2.3.1 to install fencing and/or flagging to protect biologically sensitive resources, conduct mandatory environmental awareness training for construction personnel, and retain a qualified biological monitor for construction in sensitive areas will be implemented to avoid and minimize impacts to San Joaquin kit foxes. These measures are consistent with Chapter 5, *Conservation Strategy* of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures. Participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan described under Avoidance, Minimization, and/or Mitigation Measures in Section 2.3.3, would further ensure the project would not result in adverse effects on San Joaquin kit fox.

Effects Determinations for Federally Listed Species

Table 2.3.4-6 lists effect determinations for federally listed species that were identified on the United States Fish and Wildlife Service list for the biological study area.

Table 2.3.4-6. Effects Determinations for Federally Listed Species

Species	Effects Determination
San Bruno elfin butterfly	No effect
Valley elderberry longhorn beetle	No effect
Vernal pool fairy shrimp	No effect
Vernal pool tadpole shrimp	No effect
Delta smelt	No effect
California red-legged frog	May affect, likely to adversely affect
California tiger salamander	May affect, likely to adversely affect
Alameda whipsnake	No effect
Giant garter snake	No effect
San Joaquin kit fox	May affect, not likely to adversely affect

California Endangered Species Act Consultation Summary

Five state-listed wildlife species; Palmate-bracted bird's-beak, California tiger salamander, Swainson's hawk, tricolored blackbird, and San Joaquin kit fox have a potential to occur in the biological study area or otherwise be affected by the proposed project. To date, there has been no California Endangered Species Act consultation with California Department Fish and Wildlife for the proposed project. With implementation of standardized measures and avoidance and minimization measures, it is anticipated that take will be avoided.

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no temporary or permanent impacts on threatened or endangered species.

Avoidance, Minimization, and/or Mitigation Measures

The standardized measures, discussed in Section 2.3.1, Section 2.3.2, and Section 2.3.3 and the avoidance and minimization measures listed below would help to avoid and reduce the severity of effects on threatened and endangered species.

- *Install Fencing and/or Flagging to Protect Sensitive Biological Resources.*
- *Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats.*
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

2.3.5 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

Affected Environment

The following discussion is based upon the Natural Environment Study completed for the project in November 2019 and updated in an addendum in June 2020.

Methods

Botanical surveys were conducted in the biological study area on September 6, 2017, April 3, 2019, and August 29, 2019. During the surveys, botanists walked or visually surveyed all the biological study area and compiled a list of plant species that were evident and identifiable.

Invasive Plant Species in the Biological Study Area

Invasive plant species consist of species designated as federal noxious weeds by the United States Department of Agriculture, state noxious weeds species designated by the California Department of Food and Agriculture, and invasive plants identified by California Invasive Plant Council Invasive plants

displace native species, change ecosystem processes, alter plant community structure, and lower wildlife habitat quality. Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plants and their propagules.

The Federal Highway Administration requires that state departments of transportation use the state’s noxious weed list to identify invasive plant species that could be spread by construction of transportation projects. Accordingly, Table 2.3.5-1 lists the invasive plant species identified by the California Department of Food and Agriculture and California Invasive Plant Council that are known to occur in the biological study area. Two plant species with a California Invasive Plant Council rating of high were found in the biological study area.

The California Invasive Plant Council classifies invasive plant species into five categories: High, Moderate, Limited, Alert, and Watch. Species classified as high have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure and they are easily spread. Species classified as moderate have substantial, but not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure and they are less easily spread. Species classified as limited are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. An “alert” is listed on species with high or moderate impacts that have limited distribution in California but may have the potential to spread much further. Watch species have been assessed as posing a high risk of becoming invasive in the future in California.

Four plant species in the biological study area are identified on the California list of noxious weed species. No plant species designated as a federal noxious weed was identified in the biological study area. Invasive plant species occur in all the land cover types in the biological study area.

Table 2.3.5-1 Invasive Plant Species Identified in the Biological Study Area

Species	California Department of Food and Agriculture	California Invasive Plant Council
<i>Avena barbata</i> (wild oat)	Not listed	Moderate
<i>Brassica nigra</i> (black mustard)	Not listed	Moderate
<i>Bromus diandrus</i> (ripgut brome)	Not listed	Moderate
<i>Bromus hordeaceus</i> (soft chess)	Not listed	Limited
<i>Bromus madritensis</i> (foxtail chess)	Not listed	High
<i>Carduus tenuiflorus</i> and <i>C. pycnocephalus</i> (Italian thistle)	Noxious weed list	Limited
<i>Centaurea melitensis</i> (Malta thistle)	Noxious weed list	Moderate
<i>Centaurea solstitialis</i> (yellow star thistle)	Noxious weed list	High
<i>Cirsium vulgare</i> (bull thistle)	Not listed	Moderate
<i>Conium maculatum</i> (poison-hemlock)	Not listed	Moderate

Species	California Department of Food and Agriculture	California Invasive Plant Council
<i>Convolvulus arvensis</i> (bindweed)	Noxious weed list	--
<i>Erodium cicutarium</i> (redstem filaree)	Not listed	Limited
<i>Festuca myuros</i> (rat-tail fescue)	Not listed	Moderate
<i>Festuca perennis</i> (= <i>Lolium multiflorum</i>) (Italian ryegrass)	Not listed	Moderate
<i>Geranium dissectum</i> (cutleaf geranium)	Not listed	Limited
<i>Hirschfeldia incana</i> (shortpod mustard)	Not listed	Moderate
<i>Hordeum marinum</i> (seaside barley)	Not listed	Moderate
<i>Hordeum murinum</i> (Mediterranean barley)	Not listed	Moderate
<i>Medicago polymorpha</i> (California burclover)	Not listed	Limited
<i>Phalaris aquatic</i> (Harding grass)	Not listed	Moderate
<i>Plantago lanceolata</i> (English plantain)	Not listed	Limited
<i>Raphanus sativus</i> (Wild radish)	Not listed	Limited
<i>Rumex crispus</i> (curly dock)	Not listed	Limited
<i>Salsola tragus</i> (Russian thistle)	Noxious weed list	Limited
<i>Schinus molle</i> (Peruvian peppertree)	Not listed	Limited
<i>Silybum marianum</i> (blessed milk thistle)	Not listed	Limited
<i>Sisymbrium irio</i> (London rocket)	Not listed	Limited
<i>Torilis arvensis</i> (hedgearsley)	Not listed	Moderate
<i>Tribulus terrestris</i> (puncture vine)	Noxious weed list	Limited
<i>Trifolium hirtum</i> (rose clover)	Not listed	Limited

Environmental Consequences

Effects of the Build Alternative

The proposed project would create temporary soil disturbances leading to an increased susceptibility for colonization or the spread of invasive plant species.

STANDARDIZED MEASURES

The following standardized measures to avoid and minimize the avoid and minimize the spread of invasive plant species during project construction would be implemented to avoid and minimize impacts related to invasive species:

Avoid and Minimize the Spread of Invasive Species during Project Construction

The City will be responsible for avoiding and minimizing the introduction of new invasive plants and the spread of invasive plants previously documented in the biological study area. The following best management practices will be written into the construction specifications and implemented during project construction.

- Retain all excavated soil material onsite or dispose of excess soil in a permitted offsite location to prevent the spread of invasive plants to uninfested areas adjacent to the project footprint.
- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1% weed seed).

- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).
- Use sterile grass seed and native plant stock during revegetation.
- Restore temporarily disturbed areas to pre-project conditions or better. Revegetate or mulch disturbed soils within 30 days of completing ground-disturbing activities to reduce the likelihood of invasive plant establishment.

Effects of the No-Build Alternative

Under the No-Build Alternative, no construction would take place and there would be no associated potential to result in the colonization or spread of invasive plant species.

Avoidance, Minimization, and/or Mitigation Measures

No compensatory mitigation pertaining to invasive plants is required

2.4 Cumulative Impacts

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 Code of Federal Regulations Section 1508.7.

2.4.2 Approach to Cumulative Impacts

The CEQA Guidelines provide that cumulative impacts may be analyzed by the list or projections approach. The list approach requires a list of reasonably foreseeable projects that contribute to the same cumulative impacts as the project. The projection approach relies on adopted plans to represent the reasonably foreseeable projects. The cumulative analysis for the project takes into consideration other ongoing projects in the same geographic area as the proposed project, as well as planned land use and transportation and circulation projects identified in the city of Tracy and San Joaquin County general plans and policy documents. Developments and plans in the project region include the following:

- *Cordes Ranch Specific Plan*: A commercial/light industrial development including nearly 28 million square feet of business park industrial land use, as well as general office and commercial space, and 88.6 acres of parks and open space located north of I-580 and south of I-205.
- I-205/Mountain House Parkway/International Parkway Interchange Improvement: The proposed improvement of the interchange to accommodate projected traffic from build out of the *Cordes Ranch Specific Plan*.
- Mountain House Master Plan: A 7.5-square-mile mixed-use development including 12 neighborhoods and commercial and public services to serve the community of Mountain House, located north of I-205 and west of Mountain House Parkway.
- I-205/Lammers Road/West Eleventh Street Interchange Improvement Project: An interchange improvement project to convert the current Lammers Road half-interchange to a full interchange at Lammers Road and West Eleventh Street. The project is approved and permitted. Construction is expected in 2022.
- I-205 Managed Lanes Project: A project to widen I-205 between I-5 and I-580 which will consider use of high-occupancy vehicle lanes and express lanes.

2.4.3 Assessment of Cumulative Impacts

A cumulative impact analysis is required whenever an environmental document is prepared. The purpose of a cumulative impacts analysis is to examine the potential for incremental environmental impacts of the proposed project, in combination with impacts of past, present, and reasonably foreseeable future projects, to result in one or more significant cumulative impacts on resources. As specified in Caltrans/Federal Highway Administration 2016 *Guidance for Preparers of Cumulative Impact Analysis*, the cumulative impact analysis should focus only on resources that are adversely affected by the cumulative action. These may include resources currently in poor or declining health or at risk.

The proposed project would not result in impacts related to the resource areas that are discussed at the beginning of Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures*. Analysis in Chapter 2 and Chapter 3 also determined that other resource areas would not be affected by the project. Therefore, the project could not contribute to cumulative impacts on the following resources, and they are not discussed further in this cumulative impact analysis.

- Consistency with Plans
- Land Use and Planning
- Coastal Zone
- Wild and Scenic Rivers
- Parks and Recreational Facilities
- Timberland
- Growth
- Community Character and Cohesion
- Environmental Justice
- Cultural Resources
- Tribal Cultural Resources
- Natural Communities
- Minerals
- Population and Housing
- Public Services
- Wildfire

Resource Areas with No Cumulative Impacts

There would be no significant cumulative impacts related to the following resource areas.

Human Environment

Relocations and Real Property Acquisition

The study area for evaluating cumulative effects related to property acquisition and relocation consists of the city of Tracy and the next unincorporated areas of San Joaquin County. The city of Tracy and San Joaquin County have general plans that address growth and displacement of businesses and residences. Displacements of businesses and residences resulting from other projects are expected to be minimal, and some projects would result in the construction of new residential and commercial areas. Potentially adverse impacts associated with residential and commercial displacements for transportation projects, including the proposed project,

would be handled in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended. Because development projects in the area are largely on undeveloped land, relocations are few. Therefore, there does not appear to be a cumulative impact related to relocation and real property acquisition.

As currently designed, the proposed project would result in permanent acquisition of some acreage of seven parcels. No structures would be affected and no displacements would occur. Construction of the project could result in some reduction in parking space at the ARP Mini-Mart. With implementation of Caltrans' standard procedure for displacement and relocations to comply with the Federal Uniform Relocation and Real Property Act (see Appendix B), the proposed project would not contribute to a cumulative impact, if one did exist.

Utilities and Emergency Services

The study area for evaluating cumulative impacts on utilities and emergency services is the city of Tracy and immediately adjacent communities. Utilities and emergency services currently operate at acceptable service levels, and, therefore, the health of the resource is good. The proposed project would not result in impacts on utilities or emergency services related to operation by creating additional demand. Therefore, operational cumulative impacts are not addressed.

Construction of the proposed project would require the relocation of some utilities, as discussed in Section 2.1.4, Utilities and Emergency Services. Coordination with utility providers would result in little or no effect on utilities. Construction may result in temporary impacts on emergency services that could result in longer response times. Short-term impacts on emergency service response times resulting from the construction of the proposed project and other projects would be avoided through coordination with providers and by providing notice about detours. Other projects in the area would be required to coordinate with utility and emergency service providers as well. However, it is not expected that construction of two projects would occur at the same place and the same time; therefore, no cumulative impact resulting from construction-related impacts on utilities or emergency services is expected. The long-term impacts of the proposed project on emergency service response times are expected to be positive because the proposed project would improve circulation.

Physical Environment

Water Quality and Stormwater

The proposed project would result in potential impacts on water quality during construction only. The study area for evaluating cumulative impacts on water quality and stormwater is the city of Tracy, adjacent communities, and the adjacent unincorporated areas of San Joaquin County. The proposed project,

like other projects, would be required to comply with requirements of permits that would be necessary for construction. Best management practices to address water quality would be implemented for the proposed project and other projects. Therefore, there would be no cumulative impact related to water quality and stormwater.

Geology, Soils, Seismicity, and Topography

The study area for evaluating cumulative impacts related to geology, soils, seismicity, and topography is the city of Tracy, adjacent communities, and the adjacent unincorporated areas of San Joaquin County. As described in Section 2.2.3, Geology, Soils, Seismicity, and Topography, the project vicinity generally is not seismically active or susceptible to landslides, nor does it contain unstable geologic units. The project vicinity does contain soils with moderate liquefaction susceptibilities, and final geotechnical studies would be necessary to minimize this risk. Therefore, the health of the resources is good.

Impacts of the proposed project on this resource area would be related to construction and avoided through compliance with regulations and implementation of standard design and best management practices. Other projects in the area would encounter similar conditions and restrictions. The proposed project would be required to meet regulations and standards associated with Universal Building Code Seismic Hazard Zone 4 hazards, as would all projects in the San Joaquin Valley. Therefore, a cumulative impact related to geology, soils, seismicity, or topography is not expected.

Hazardous Waste and Materials

The study area for evaluating cumulative impacts related to hazardous materials is the project area and a 0.5-mile radius around the area. There is one hazardous materials site in the vicinity, the ARP Mini-Mart and the associated monitoring wells. Although this site is not closed, it is undergoing monitoring. Other potential contamination in the area is related to agricultural and transportation uses that are widespread in California. Therefore, the health of the resource is moderate.

Construction of the proposed project and other projects in the vicinity would result in potential exposure of workers or the public to hazardous materials related to ground-disturbing activities and the removal or modification of facilities or 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. Construction may disturb contaminated soils or require the removal of structures containing hazardous materials, releasing them into the environment. These impacts are all related to construction, and all projects must comply with state and federal regulations to prevent the release of hazardous materials and ensure worker

and public safety. Not all projects will be constructed at the same time or in the same place. Therefore, no cumulative impact related to hazardous waste or materials is expected.

Noise and Vibration

Noise levels in the project area are moderate, with traffic noise as the dominant ambient noise. The study area for evaluating cumulative impacts on noise consists of the project area and sensitive land uses within a 500-foot radius.

As discussed in Section 2.2.7, Noise and Vibration, there are no sensitive land uses within the project area and sound levels would not increase significantly; therefore, operation of the project would not result in impacts related to noise or vibration.

Temporary increases in noise could occur during construction activities. However, implementation of Caltrans Standard Specifications and compliance with applicable local noise standards to minimize the temporary noise effects of construction would ensure that noise impacts caused by construction would be short term and not adverse. Other projects are required to adopt similar noise-reduction measures, either as directed by Caltrans or as a result of local noise ordinances. Also, construction of more than one project is not expected to take place at the same time or in the same location. Consequently, a cumulative impact related to construction noise is not expected.

Resources with Cumulative Impacts

Human Environment

Farmland

The study area for evaluating cumulative effects on farmland is the northern San Joaquin Valley. As development in the area continues, agricultural lands continue to be converted to non-agricultural uses. According to data from the California Department of Conservation, from 2014 to 2016, about 3,000 acres of the nearly 750,000 acres of agricultural lands in San Joaquin County were removed from agricultural use (0.4 percent), although there was a net gain of 81 acres in important farmland. There continues to be a loss of agricultural land, though efforts are being made to preserve this resource.

In the immediate project vicinity, commercial and residential developments in Tracy and the nearby community of Mountain House result in fewer acres in agricultural production. There are parcels of farmland (Prime Farmland and Farmland of Local Importance) that are designated Urban Reserve and Industrial in the City's General Plan. Therefore, a cumulative impact on farmland does exist. However, the project would result in the conversion of 5.489 acres of grazing land. This amounts to less than 0.001 percent of the existing agricultural land in San Joaquin County. Because the portions of

parcels that would be converted are immediately next to transportation facilities, no remaining parcels would be in agriculture because of the project. Therefore, the contribution of the project to the cumulative impact on agricultural land would not be considerable.

Traffic and Transportation

The study area used for evaluating cumulative traffic and transportation effects, including pedestrian and bicycle facilities, extends along Patterson Pass Road, International Parkway from I-580 to the California Aqueduct, and I-580 between the project post miles. Under existing conditions, all mainline segments operate at acceptable levels of service, and three of the four intersections analyzed operate at unacceptable levels of service, as indicate in Section 1.2.2, Need. The health of the resource is moderate.

Traffic analysis is inherently cumulative because models used for analysis include input from all known and reasonably foreseeable projects. As indicated in Table 2.1.5-6 in Section 2.1.5, Traffic and Transportation and Pedestrian and Bicycle Facilities, all freeway segments would operate at unacceptable levels of service in the westbound direction during the morning peak hours and in the eastbound direction during the evening peak hours under 2043 conditions, with or without the project. Without the project, three of the four intersections analyzed would operate at unacceptable levels of service in 2043 (Table 2.1.5-4 in Section 2.1.5). Therefore, a cumulative impact clearly exists. However, with the project, only one of the four intersections would operate at an unacceptable level of service, and all mainline segments would experience less delay, although they still would operate at level of service F. The contribution of the project would not be considerable, but rather would be beneficial.

Visual/Aesthetics

The land surrounding the project corridor is primarily rolling grassland with some rural and light industrial development and views of the Diablo Range and Black Hills. The study area for evaluating cumulative visual effects is the project area and a 0.5-mile radius around the project area. The current visual health of the project vicinity is moderate, because views are characterized by the open lands and the Diablo Range, along with highways in the background. Views are moderately intact.

The study area northeast of I-580 is characterized by the California Aqueduct and light industrial and commercial development. The study area southwest of I-580 is generally undeveloped but also includes the Musco Family Olive Company factory and the ARP Mini-Mart. Lighting in the project vicinity is associated with the existing development, overhead lighting and traffic lights along International Parkway/Patterson Pass Road at the on-ramps and off-ramps, and local street lighting along International Parkway and Schulte

Road. The California Aqueduct, wind turbines, and large lattice steel transmission line towers are common visible elements in the project vicinity.

The only proposed development within 0.5 mile of the project area is associated with the *Cordes Ranch Specific Plan*, a commercial development that is partially built out. Continued build out would introduce more of the same light industrial land use, consistent with the current land use. Cordes Ranch development also would introduce additional glare and ambient lighting associated with street and building lighting. Therefore, there could be a cumulative impact.

The proposed project would result in minor changes to an existing interchange, which would likely not be noticeable to most viewers. The project would also include minimal additional lighting. The amount of new pavement would be minimal, and it is expected that any increase in daytime glare would not be perceptible. Minimization measures, including adherence to design standards and standard specifications related to construction lighting, would be implemented to further reduce impacts. Therefore, the contribution of the proposed project to cumulative impacts on visual resources would be less than considerable.

Physical Environment

Hydrology and Floodplain

The study area for evaluating cumulative impacts on hydrology and floodplain is the San Joaquin River watershed. The proposed project would result in an increase in impervious surfaces, as would other development and transportation projects in the area. Therefore, a cumulative impact related to hydrology and floodplain exists. However, the area of added impervious surface would be small in comparison with the watershed area of the San Joaquin River, and it would not affect 100-year flow or existing drainage patterns. Therefore, the project's contribution would be less than considerable.

Air Quality

The study area for evaluating air quality effects is the San Joaquin Valley Air Basin. Air quality effects are inherently cumulative because the assessment of air quality depends largely on traffic forecasts, which include build-out assumptions that are consistent with adopted demographic forecasts. Consequently, an evaluation of air quality operational effects assumes future regional growth consistent with projections. As discussed in Section 2.2.6, Air Quality, the study area has experienced violations of federal and state air quality standards; therefore, the health of the resource is poor.

Air quality analysis is inherently cumulative in nature, because the evaluation relates to the air basin as a whole and evaluates conditions during the construction and design years (2023 and 2043, respectively). Because the

proposed project and cumulative projects would result in impacts on air quality, there is a cumulative impact on air quality. As noted in Section 2.2.6, operation of the proposed project would result in beneficial impacts related to criteria pollutant emission (see Table 2.2.6-2 in Section 2.2.6). Therefore, the proposed project would not contribute to a cumulative impact on air quality associated with operations.

Construction of the proposed project and cumulative projects would result in construction-related criteria pollutant emissions. The temporary impacts of the proposed project would be minimized with the implementation of Caltrans Standard Specification Section 14 and compliance with state and federal regulations. Other projects would also be required to comply with regulations to reduce temporary air quality impacts. Therefore, with implementation of avoidance and minimization measures, the contribution of the proposed project would not be considerable.

Wetlands and Other Waters

As discussed in Section 2.3.1, Wetlands and Other Waters, the project area supports seasonal wetlands and ephemeral drainages that are considered waters of the United States and waters of the State.

The study area for evaluating cumulative impacts on wetlands and other waters is the San Joaquin Valley. Development throughout the state has affected Waters of the United States and Waters of the State, both directly through fill and indirectly through impacts on water quality. The Clean Water Act requires project proponents to mitigate impacts on waters of the United States from fill and to avoid and minimize the discharge of pollutants through preparation and implementation of Stormwater Pollution Prevention Plans. The Porter-Cologne Act protects Waters of the State using waste discharge requirements. Adherence to the federal and state requirements largely offset impacts on wetlands and other waters. However, as more area is converted from open space and farmland to other uses (including transportation), the overall health of this resource declines and a cumulative impact on wetlands and other waters likely exists.

Construction of the project would result in direct fill of one of the two seasonal wetlands in the project area. The other seasonal wetland would be completely avoided. Construction would also result in temporary impacts on 0.003 acre of ephemeral drainage and permanent impacts on 0.007 acre of ephemeral drainage. The implementation of avoidance and minimization measures would minimize sedimentation and protect water quality. The purchase of compensatory credits to mitigate effects on wetlands and ephemeral drainages would likely be required as part of the Clean Water Act Sections 401 and 404 permitting process to ensure no net loss of functions or habitat values. Although the proposed project would contribute to a cumulative effect on wetlands and other waters, the contribution would not be considerable,

because the acreage affected by the project would be so small and compensatory mitigation would be purchased.

Plant Species

As discussed in Section 2.3.2, Plant Species, there is a potential for the project to affect one special-status species, big tarplant. However, this impact can be identified only as a potential impact because portions of the project area were burned prior to the 2019 field surveys, and it was not possible to determine if the species is present.

The study area for evaluating cumulative impacts on the big tarplant is the range of the species, which includes valley and foothill grasslands in the San Francisco Bay area, and Alameda, Contra Costa, San Joaquin, Stanislaus, and Solano Counties. Development in these areas has reduced the acreage of habitat for this species, although all projects with federal and state funding would be required to consider potential impacts on the species, which would offset direct effects on individuals. However, as more area is converted from open space and farmland to other uses (including transportation), more populations of the big tarplant are at risk for removal, and a cumulative impact on the big tarplant habitat likely exists.

Construction of the proposed project could contribute to the cumulative loss of big tarplant habitat and could potentially result in direct impacts on this special-status plant species. Loss of special-status plants and their habitats from urban development, conversion to agricultural uses, competition with nonnative plant species, sedimentation and pollution from runoff, and herbicides are threats to special-status plant species. The proposed project might contribute to a cumulative loss of habitat and a cumulative impact on the species through direct impacts on individuals. However, implementation of avoidance and minimization measures to conduct surveys and implement protective measures as necessary and to mitigate for any unavoidable permanent impacts, should they result, would ensure that the contribution would not be considerable.

Animal Species

As discussed in Section 2.3.3, Animal Species, the proposed project would affect potential habitat for non-listed special-status wildlife species (California glossy snakes, coast horned lizards, San Joaquin coachwhips, golden eagles, loggerhead shrikes, white-tailed kites, western burrowing owls, American badgers, Townsend's big-eared bats, and pallid bats).

California glossy snakes, coast horned lizards, and San Joaquin coachwhips are listed as species of special concern in California. Their habitat represents the study area for cumulative effects. As development reduces open grassland or converts it to agriculture or other uses, the habitat for these species is reduced. Because this type of habitat is being converted to transportation and urban uses throughout the Central Valley, the health of the

resource (foraging habitat) is poor. Therefore, a cumulative likely exists. Because a net loss of habitat would result from the proposed project, construction of the proposed project would contribute to the cumulative loss of suitable habitat for California glossy snakes, coast horned lizards, and San Joaquin coachwhips. However, with the implementation of measures to avoid and minimize potential impacts on these special-status species, preconstruction surveys, restoration of temporarily affected weedy areas and annual grassland to pre-project or better conditions, and the relatively small amount of habitat lost, and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, the project's contribution to the cumulative effect on California glossy snakes, coast horned lizards, and San Joaquin coachwhips would not be considerable.

Loggerhead shrikes and western burrowing owls are listed as species of special concern in California. White-tailed kites and golden eagles are fully protected by the California Fish and Game Code. Other migratory bird species are protected under the Migratory Bird Treaty Act. Foraging habitat for all these species and nesting habitat for western burrowing owls and loggerhead shrikes occurs within the project area. Some suitable nesting habitat for white-tailed kites is nearby. The study area for cumulative effects on these species is the San Joaquin Valley and surrounding foothills. As development occurs in these areas, foraging habitat is reduced. This type of habitat is being converted to transportation and urban uses throughout the Central Valley; therefore, the health of the resource (foraging habitat) is moderate, because these animals have a large range for foraging. A cumulative impact likely exists and the proposed project would contribute to the cumulative impact on these species and their habitat. However, with implementation of avoidance and minimization measures, and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures identified in Section 2.3.3, the contribution of the project would not be considerable.

The American badger is a California species of special concern. The study area for cumulative impacts on the American badger is its habitat range, which encompasses much of California. Development in California continues to convert open spaces that would provide wildlife habitat to transportation and other uses. Grassland habitat in particular is being converted to urban and transportation uses throughout the Central Valley; therefore, the health of the resource is poor to moderate. A cumulative impact exists. Because a net loss of foraging habitat would result from the construction of the proposed project, the project would contribute to the cumulative loss of suitable habitat for American badgers in the project region. By implementing measures to avoid and minimize potential impacts on American badgers, and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and considering the overall availability of foraging habitat near the project area, the proposed project's contribution to a cumulative impact on American badgers would not be considerable.

Townsend's big-eared bats and pallid bats are California state species of special concern and considered high-priority species in California by the Western Bat Working Group. Structures that provide suitable roosting habitat for bats could be modified through the proposed project. Although construction of the proposed project could contribute to the temporal loss of suitable roosting habitat, no permanent loss of habitat would result. With implementation of avoidance and minimization measures and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, the proposed project's contribution to a cumulative impact on special-status bats would not be considerable.

Threatened and Endangered Species

As discussed in Section 2.3.4, *Threatened and Endangered Species*, the biological study area includes potential habitat for California red-legged frogs, California tiger salamanders, Swainson's hawks, tricolored blackbirds, and San Joaquin kit foxes.

CALIFORNIA RED-LEGGED FROG AND CALIFORNIA TIGER SALAMANDER

The California red-legged frog is listed as a threatened species under Federal Endangered Species Act and is a California species of special concern. The California tiger salamander is listed as a threatened species under Federal and California Endangered Species Act. Within the biological study area, these species occupy similar habitat. The study area for assessing cumulative impacts on these species is upland habitat in the San Joaquin Valley, which includes grasslands and woodlands next to aquatic habitat. Development in California continues to convert open space areas to urban and transportation uses; therefore, the health of the resource is poor and cumulative impacts on either species could result from construction of other general development projects in the area. Because a net loss of suitable dispersal habitat would result from the project activities, construction of the proposed project would contribute to the cumulative loss of suitable dispersal habitat in the project region. With implementation of measures to avoid and minimize potential impacts on both species and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, the project's contribution to cumulative effects on California red legged frogs and California tiger salamanders would not be considerable.

SWAINSON'S HAWK

The Swainson's hawk is listed as threatened under California Endangered Species Act. The study area for assessing cumulative impacts on Swainson's hawks is foraging habitat within the Central Valley and Coast Ranges. Because development in California continues to result in the conversion of open grasslands and agricultural lands to urban and other uses, the health of the resource is declining and a cumulative impact on foraging habitat for Swainson's hawks exists. Implementation of the project would result in the conversion of foraging habitat in a way that would contribute to the cumulative

impact. With implementation of measures to avoid and minimize potential impacts on Swainson's hawks and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, the proposed project's contribution to the cumulative effect on Swainson's hawks would not be considerable.

TRICOLORED BLACKBIRD

The tricolored blackbird is listed as threatened under California Endangered Species Act. It nests near open water but forages in grasslands and agricultural fields. Suitable foraging habitat exists within the project area. The study area for assessing cumulative impacts on tricolored blackbirds is foraging habitat within the Central Valley and Coast Ranges. Because development in California continues to result in the conversion of open grasslands and agricultural lands to urban and other uses, the health of the resource is declining and a cumulative impact on foraging habitat for tricolored blackbirds exists. Because a net loss of foraging habitat would result from the construction of the proposed project, the project would contribute to the cumulative loss of suitable foraging habitat for tricolored blackbird in the project region. By implementing measures to avoid and minimize potential impacts on tricolored blackbirds and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, the proposed project's contribution to a cumulative effect on tricolored blackbirds would not be considerable.

SAN JOAQUIN KIT FOX

The San Joaquin kit fox is listed as endangered under Federal Endangered Species Act and as threatened under California Endangered Species Act. The study area for assessing cumulative impacts on San Joaquin kit foxes is its foraging habitat in the San Joaquin Valley, from Tracy south to Kern County. As development in the southern San Joaquin Valley continues to expand, grassland and open area that provide foraging habitat are being converted to urban and other uses. Therefore, the health of the resource is declining, and a cumulative impact exists. Because a net loss of foraging habitat and movement corridor would result from the construction of the proposed project, the project would contribute to the cumulative loss of suitable foraging habitat and movement corridor for San Joaquin kit foxes in the northern range of the species. By implementing measures to avoid and minimize potential impacts on San Joaquin kit foxes and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures, the proposed project's contribution to a cumulative effect on San Joaquin kit foxes would not be considerable.

Invasive Species

The study area for evaluating cumulative impacts related to invasive species is the city of Tracy, adjacent communities, and the adjacent unincorporated areas of San Joaquin County. Invasive plant species are known to occur in

annual grasslands, along roadways, and in disturbed areas. Disturbed areas temporarily created during construction are susceptible to colonization by or spread of invasive plants. Considering past, current, and probable future projects, such as the development of the surrounding area, a cumulative impact likely exists. Ground disturbance and construction vehicle traffic associated with the proposed project could contribute to this cumulative impact. However, implementation of measures to revegetate or mulch disturbed soils within 30 days of ground-disturbing activities and to avoid and minimize the spread of invasive plant species during construction would ensure that the proposed project's contribution is not considerable.

Chapter 3 CEQA Evaluation

3.1 Determining Significance under CEQA

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

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

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

3.2 CEQA Environmental Checklist

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

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as best management practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The discussions accompanying this checklist are summaries of information contained in Chapter 2 to provide 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 Chapter 1 and Chapter 2.

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

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

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

Less Than Significant Impact—The widened bridge structure would visually match the existing bridge structure; the larger size of the bridge would result in only minor alterations to the visual landscape. These changes would only be apparent in the immediate vicinity of the bridge and would not affect the scenic route because the widened bridge structure would retain the visual character of the existing bridge. Scenic vista views of the Diablo Range and Black Hills that are available from the International Parkway/Patterson Pass Road bridge over I-580 would not be altered in any way. Widening the roadway and ramps would result in minor landform alterations along the ramp and road shoulders. To minimize visual effects associated with project construction, Caltrans’ *Highway Design Manual* design standards would be implemented and no additional avoidance, minimization, or mitigation measures would be needed. Therefore, changes associated with the project would be in keeping with the existing visual environment associated with the

existing conditions, as seen by all viewers, and would not have a significant visual impact on scenic vistas for all viewers. Therefore, impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact—Changes associated with the project would have minimal effects on views from I-580, an officially designated State Scenic Route. The project would widen facilities into vacant lands. It would mostly affect low-lying, grassy vegetation, and only one of the three mature pepper trees would need to be removed. The relocated private access road would cross grasslands and would not affect visual resources seen from the I-580 off-ramp. The widened bridge structure would visually match the existing bridge structure; the larger size of the bridge would result in only minor alterations to the visual landscape. These changes would only be apparent in the immediate vicinity of the bridge and would not affect the scenic route because the widened bridge structure would retain the visual character of the existing bridge and would not detract from views from the scenic route.

Widening the roadway and ramps would result in minor landform alterations along the ramp and road shoulders. The proposed project would not affect views associated with the California Aqueduct that are available from the scenic route. To minimize visual effects associated with project construction, Caltrans' *Highway Design Manual* design standards would be implemented and no additional avoidance, minimization, or mitigation measures would be needed. Changes associated with the project would be in keeping with the existing visual environment associated with the existing scenic route, as seen by highway users, and would not have a significant visual impact on these viewers. Therefore, impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact—The proposed project is in a non-urbanized area; therefore, the project would not conflict with applicable zoning or other regulations governing scenic quality in an urbanized area. The widened bridge structure would visually match the existing bridge structure; the larger size of the bridge would result in only minor alterations to the visual landscape. These changes would only be apparent in the immediate vicinity of the bridge and would not affect views from I-580 because the widened bridge structure would retain the visual character of the existing bridge. Widening the roadway and ramps would result in minor landform alterations

along the ramp and road shoulders. The project would widen facilities into vacant lands. It would mostly affect low-lying, grassy vegetation, and only one of the three mature pepper trees would need to be removed. The ARP Mini-Mart gas station would not be affected by the project. The relocated private access road would cross grasslands and would not affect visual resources seen from the I-580 off-ramp. The proposed project would not affect views associated with the California Aqueduct that are available from I-580. To minimize visual effects associated with project construction, Caltrans' *Highway Design Manual* design standards would be implemented and no additional avoidance, minimization, or mitigation measures would be needed. Changes associated with the project would be in keeping with the existing visual environment associated with the existing conditions, as seen by all viewers, and would not have a significant visual impact on the existing visual character or quality of public views of the site and its surroundings for all viewers. Therefore, impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact—Minimal nighttime construction is proposed, which would require the use of extremely bright lights. However, Section 7-1.04 of Caltrans Standard Specifications would ensure that no lighting is aimed toward homes or businesses or aimed in a manner that would affect roadways users traveling at night. Lighting and signalization of the additional bridge lanes at the ramps would slightly increase nighttime lighting. However, this additional lighting would be minor and would result in a negligible increase in nighttime lighting. The amount of new pavement that would be introduced would be minor and would result in a negligible increase in daytime glare that would not be perceptible. Therefore, impacts would be less than significant. No mitigation is required.

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for Agriculture and Forest Resources

In determining whether impacts on 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 on 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—No prime farmland, unique farmland, or farmland of state or local importance would be converted as a result of the proposed project. Therefore, there is no impact.

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

Less Than Significant Impact—There are no parcels in the project area under Williamson Act contract. The acquisition of narrow strips of land next to I-580 and Patterson Pass Road would not take the parcels out of agricultural production. Therefore, this impact would be less than significant.

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

No Impact—No forest land or timberland is within the project area; therefore, there is no potential to conflict with zoning for forest or timberland.

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

No Impact—No forest land is within the project area; therefore, no forest land would be converted 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 improve an existing interchange and involve the conversion of small portions of parcels next to existing roadways. It would not involve any other changes that could result in further conversion of farmland to other uses. There would be no impact.

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

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

Would the project:

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

Less Than Significant Impact—The proposed project was included in the regional emissions analysis conducted by San Joaquin Council of Governments for the conforming Regional Transportation Plan/Sustainable Communities Strategy. Projects included in the Regional Transportation Plan/Sustainable Communities Strategy are consistent with the planning goals of State Implementation Plan adopted by local air quality management agencies.

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—Long-term operational emissions from motor vehicles operating on the roadway network were quantified using the Caltrans Emission Factor model and vehicle activity data provided by the 2019 Traffic Operations Analysis Report prepared for this project. The emissions analysis presented in Table 2.2.6-2 in Section 2.2.6, Air Quality, indicates that operation of the project under Design Year (2043) conditions would increase particulate matter emissions compared with existing conditions and would decrease reactive organic gases, nitrogen oxides, carbon dioxide, and sulfur dioxide emissions. These results are exclusively due to factors external to the project. The increase in particulate matter is due to background growth in vehicle miles traveled from 2017 to 2043, because particulate matter emissions are primarily a function of vehicle miles traveled. The decreases in other pollutants are due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles, which reduces exhaust emissions.

Emissions effects resulting from implementation of the project under opening (2023) and design year (2043) conditions are obtained through a comparison of emissions with and without the project. As shown in Table 2.2.6-2, implementation of the project would result in no change in criteria pollutant emissions compared with no-build conditions. This is because the project is would not increase capacity on the mainline and would not result in new trips or daily vehicle miles traveled relative to the No-Build Alternative.

The project has been determined to not be a Project of Air Quality Concern for localized particulate matter through San Joaquin Council of Governments interagency consultation process. The potential for the project to contribute to localized carbon monoxide hot-spots was evaluated using the Carbon Monoxide Protocol. Through this screening process, it was determined that the project is not expected to result in a new or more severe exceedance of either the National Ambient Air Quality Standards or California Ambient Air Quality Standards. The detailed carbon monoxide analysis is presented in the Air Quality Report.

Based on the above analyses, the project would not contribute a significant amount of criteria pollutant emissions during either construction or operation such that regional or local air quality would be substantially degraded. This impact would be less than significant. No mitigation is required.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact—Heavy-duty equipment would generate diesel particulate matter during roadway-widening activities. As shown in Table 2.2.6-3 in Section 2.2.6, particulate matter emissions would be minor (one to two pounds per day, depending on subphase) and only occur over a period of 13 months. The short-term construction period would be well below the 30-year exposure period typically associated with increased cancer risks, according to the 2015 Office of Environmental Health Hazard Assessment. Moreover, diesel particulate matter from construction equipment would dissipate as a function of distance and would be lower at the nearest receptor locations, which are more than 2,000 feet from the project. Accordingly, construction of the proposed project would not result in a significant increase in cancer or non-cancer risks at nearby sensitive receptors.

There are no geologic features normally associated with naturally occurring asbestos (i.e., serpentine rock or ultramafic rock near fault zones) in or near the project area. Consequently, there is no potential for impacts related to naturally occurring asbestos emissions during construction activities. The Patterson Pass Road overcrossing, which may contain asbestos, would be modified during construction. Testing for asbestos has not been conducted at the time of preparation of this report. It is not known whether the overcrossing structure contains asbestos. If asbestos is encountered, the project would comply with the California Air Resource Board's asbestos regulations.

As discussed in Section 2.2.6, Air Quality, the Federal Highway Administration has issued an updated interim guidance using a tiered approach on how mobile source air toxics for transportation projects should be evaluated. Based on the three project categories outlined in the Federal Highway Administration's guidance, the proposed project would not cause a meaningful increase in regional mobile source air toxic emissions compared with those of the No-Build Alternative. The roadway widening proposed as

part of the project could result in localized changes in mobile source air toxic emissions, including moving some traffic closer to existing land uses. Therefore, under the proposed project, there may be localized areas where ambient concentrations of mobile source air toxics could be higher than under the No-Build Alternative. The localized increases in mobile source air toxic concentrations would likely be most pronounced along Patterson Pass Road, although there are no sensitive receptors within 2,000 feet of the project area. Moreover, the magnitude and the duration of these potential increases compared with the no-build conditions cannot be reliably quantified because of incomplete or unavailable information in forecasting project-specific mobile source air toxic health impacts.

Based on the above analysis, the project would not expose receptors to substantial diesel particulate matter, asbestos, or mobile source air toxic concentrations. Likewise, as discussed under checklist item b, neither construction nor operation of the project would generate criteria pollutant emissions that would deteriorate or impede progress toward achieving air quality goals as stated in the clean air plans, which have been adopted to achieve the health-protective ambient air quality standards. This impact would be less than significant. No mitigation is required.

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

Less Than Significant Impact—Some phases of construction, particularly asphalt paving, would 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. Therefore, objectionable odors affecting a substantial number of people would be less than significant, and no mitigation is required.

3.2.4 Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

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

Less Than Significant With Mitigation Incorporated

Plants

One special-status plant species, the big tarplant, maybe be present within the project area. One area of suitable habitat for this species is present within

the project area but had been recently burned when summer surveys were conducted. Therefore, it is not possible to determine if the species is present, and presence must be assumed. Disturbance or destruction of this species would be a significant impact. Implementation of the avoidance and minimization measures to conduct floristic surveys and implement protective measures as feasible, and the measure to compensate for permanent impacts on special-status plants discussed in Section 2.3.2, Plant Species, would reduce this impact to a less-than-significant level.

Wildlife

The proposed project would result in temporary and permanent impacts on several natural communities that provide habitat for special-status wildlife species.

California Red-Legged Frog

Although the potential for California red-legged frogs to occur in the project area is low, construction of the proposed project could result in direct impacts on individual through mortality or injury, if they are present at that time. There would be temporary impact on their movement corridor and dispersal habitat during construction. Project implementation would also result in permanent and temporary impacts on upland habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 6.15 acres of weedy, 7.33 acres of wild oat grassland, and less than 0.001 acre of ephemeral drainage habitat, and permanent impacts on 5.45 acres of weedy and 7.06 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

California Tiger Salamander

Although the potential for California tiger salamander to occur in the project area is low construction of the proposed project could result in direct impacts on individual through mortality or injury, if they are present at that time. There would be temporary impact on their movement corridor and dispersal habitat

during construction. Project implementation would also result in permanent and temporary impacts on upland habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 6.15 acres of weedy, 7.33 acres of wild oat grassland, and less than 0.001 acre of ephemeral drainage habitat, and permanent impacts on 5.45 acres of weedy and 7.06 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

California Glossy Snake, Coast Horned Lizard, San Joaquin Coachwhip

Construction of the proposed project could result in direct impacts on these species through mortality or injury and would result in permanent and temporary impacts on foraging habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 6.15 acres of weedy, 7.33 acres of wild oat grassland, and less than 0.001 acre of ephemeral drainage habitat, and permanent impacts on 5.45 acres of weedy and 7.06 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

Western Burrowing Owl

Construction grading, excavation, and the movement of equipment and vehicles could injure and/or kill burrowing owl adults, nestlings, and eggs if present in burrows in project work areas. Project implementation would also result in the permanent and temporary impacts on suitable nesting and foraging habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 0.01 acre of ephemeral drainage, 7.72 acres of weedy and 14.00 acres of wild oat grassland habitat, and permanent impacts on 0.02 acre of ephemeral drainage, 9.55 acres of weedy and 13.38 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

Swainson's Hawk

A Swainson's hawk was observed in the biological study area during survey. The closest suitable nesting trees are 0.5 mile from the project area, so nesting habitat would not be affected. However, the project provides foraging habitat for Swainson's hawks. There would be permanent and temporary impacts on foraging habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 0.01 acre of ephemeral drainage, 7.72 acres of weedy and 14.00 acres of wild oat grassland habitat, and permanent impacts on 0.02 acre of ephemeral drainage, 9.55 acres of weedy and 13.38 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and the measures listed below, and discussed in Section 2.3.1, Section 2.3.3, and Section 2.3.4, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel

- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- Remove Vegetation during the Nonbreeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

Golden Eagle

The proposed project would result in permanent and temporary impacts on foraging habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 0.01 acre of ephemeral drainage, 7.72 acres of weedy and 14.00 acres of wild oat grassland habitat, and permanent impacts on 0.02 acre of ephemeral drainage, 9.55 acres of weedy and 13.38 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and those listed below, and discussed in Section 2.3.1, impacts would be less than significant.

- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

Loggerhead Shrike and White-Tailed Kite

There is suitable nesting habitat within the project area. If construction occurs during nesting season (February 1 to August 31) construction activity could have direct impacts on birds nesting in trees or shrubs. Project construction would also result in permanent and temporary impacts on foraging habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 0.01 acre of ephemeral drainage, 7.72 acres of weedy and 14.00 acres of wild oat grassland habitat, and permanent impacts on 0.02 acre of ephemeral drainage, 9.55 acres of weedy and 13.38 acres of wild oat grassland habitat. With implementation of San Joaquin County Multi-Species Habitat Conservation and Open Space Plan measures and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- Remove Vegetation during the Nonbreeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds
- *Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species Through Participation in the San Joaquin County Multi-Species Habitat and Open Space Conservation Plan.*

Tricolored Blackbird

There is no suitable nesting habitat near the project area, so nesting habitat would not be affected. However, the project area provides foraging habitat for tricolored blackbird. There would be permanent and temporary impacts on foraging habitat, including weedy and wild oat grassland land cover types, and a seasonal wetland. The project would result in temporary impacts on 0.01 acre of ephemeral drainage, 7.73 acres of weedy and 14.01 acres of wild oat grassland habitat, and permanent impacts on 9.56 acres of weedy, 13.38 acres of wild oat grassland habitat, and 0.01 acre of seasonal wetland. With implementation of the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
 - Conduct Mandatory Environmental Awareness Training for Construction Personnel
 - Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats
- Remove Vegetation during the Nonbreeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

San Joaquin Kit Fox

Though the potential for San Joaquin kit foxes to occur in the project area is low due to the lack of suitable burrows and the lack of recent sightings, construction of the proposed project could result in direct impacts on individual through mortality or injury, if foxes are present at that time. There would be temporary impact on their movement corridor and dispersal habitat during construction. Project implementation would also result in permanent and temporary impacts on foraging habitat, including weedy and wild oat

grassland land cover types. The project would result in temporary impacts on 7.73 acres of weedy and 14.01 acres of wild oat grassland habitat, and permanent impacts on 9.56 acres of weedy and 13.38 acres of wild oat grassland habitat. With implementation of Caltrans standard specifications to conduct preconstruction surveys for special-status mammal dens and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel

Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

American Badger

Construction activities could result in disturbance, injury or mortality of individual badgers, if they are present. Project construction would also result in permanent and temporary impacts on foraging, resting, denning, and movement habitat, including weedy and wild oat grassland land cover types. The project would result in temporary impacts on 7.73 acres of weedy and 14.01 acres of wild oat grassland habitat, and permanent impacts on 9.56 acres of weedy and 13.38 acres of wild oat grassland habitat. With implementation of Caltrans standard specifications to conduct preconstruction surveys for special-status mammal dens and the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel

Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

Townsend's Big-Eared Bat and Pallid Bat and Colonies of Roosting Non-Special-Status Bats

Because no suitable roosting habitat would be removed, there would be no permanent impacts. However, construction activities, including noise and lighting, maybe disturb roosting bats which could result in bat displacement. The road widening could result in some degradation of foraging habitat. With implementation of the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources

- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

Identify Suitable Roosting Habitat for Bats and Implement Avoidance and Protective Measures

Special-Status and Other Migratory Birds

If construction occurs during nesting season, construction activities could have direct impacts on birds nesting in trees or shrubs. The proposed project could result in increased mortality of individuals as a result of vehicle collisions as hawks fly across wider roadways for ramps. The closest suitable nesting trees are 0.5 mile from the project area, so nesting habitat would not be affected. With implementation of the measures listed below, and discussed in Section 2.3.1 and Section 2.3.3, impacts would be less than significant.

- Install Fencing and/or Flagging to Protect Sensitive Biological Resources
- Conduct Mandatory Environmental Awareness Training for Construction Personnel
- Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

Remove Vegetation during the Nonbreeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

- Conduct Focused Surveys for Nesting Swainson’s Hawks Prior to Construction and Implement Protective Measures during Construction

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 United States Fish and Wildlife Service?

No Impact—The only sensitive natural communities present in the project area are two potential seasonal wetlands and a roadside drainage, which are addressed below under state or federally protected wetlands. There is no riparian habitat or other sensitive natural community. Therefore, there is no 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?

Less Than Significant With Mitigation Incorporated—There are two potential seasonal wetlands and one roadside drainage feature within the

project area. Construction of the project would result in direct impacts on the entirety of one of the seasonal wetlands (SW-1) and the roadside drainage. The second seasonal wetland would be avoided. These features do not appear to be connected to any traditional water of the United States but would likely be considered waters of the state. Construction of the proposed project would result in permanent loss of 0.01 acre of seasonal wetland and 0.007 acre of roadside drainage, and temporary impacts on 0.005 acre of roadside drainage. Implementation of avoidance and minimization measures discussed in Section 2.3.1, to install fencing or flagging to protect sensitive biological resources, to conduct mandatory environmental awareness training for construction personnel, and to conduct monitoring during construction in sensitive areas would reduce this impact. Implementation of measure, *Compensate for Loss of Wetlands* would reduce this impact to a less-than-significant level.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact—The project would improve an existing interchange and would not introduce any new barriers to movement of wildlife species. Construction of the project may result in temporary barriers to movement of wildlife. No known nursery sites are located within the biological study area. Avoidance and minimization measures would ensure that any effects associated with construction of the project would be less than significant.

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

Less Than Significant Impact—The *San Joaquin County General Plan* contains a policy to protect significant woodlands and heritage trees. No woodlands or heritage trees occur within the project area. The same policy also protects rare, threatened, and endangered species and their habitats. With implementation of avoidance and minimization measures, impacts on habitat would be reduced to a less-than-significant level.

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

No Impact—The project area is within the *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan*. The City has also adopted a Habitat Conservation Plan for the Swainson's hawk. The project, however, would not interfere with either plan and would comply with all requirements. There would be no impact.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

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

No Impact—There are no historical resources within the area of potential effects. Two historic built resources, unrecorded segments of the Southern Pacific Railroad (P-39-000002) and the California Aqueduct (P-39-000090) were identified within 0.5 mile of the area of potential effects; however, the project would not result in impacts on either of these resources, either directly or indirectly. There would be no impact on a historical resource.

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

Less Than Significant Impact—No archaeological resources, new or previously recorded, were identified in the project area. The project area is not considered sensitive for buried resources.

However, there is always the potential that buried cultural resources or human remains may be encountered during construction. Caltrans standard procedures to stop work in case of accidental discovery, described below, would ensure that these potential impacts would not be significant.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

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

Less Than Significant Impact—As discussed above, the area of potential effects is not considered sensitive for buried resources, including human remains. However, there is always the potential that buried cultural resources including human remains may be encountered during construction. Caltrans standard procedures and state regulations, described below, would ensure that these potential impacts would not be significant.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted.

Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the California Native American Heritage Commission, which will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact Caltrans District 10 Professionally Qualified Staff so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable.

3.2.6 Energy

The California Environmental Quality Act (CEQA) Guidelines section 15126.2(b) and Appendix F, Energy Conservation, require an analysis of a project's energy use to determine if the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

CEQA Significance Determinations for Energy

Would the project:

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

Less Than Significant Impact—The project is needed to reduce congestion resulting from ongoing and planned development. In 2043, projected build out of the *Cordes Ranch Specific Plan* and regional traffic from Schulte Road will result in the existing I-580/International Parkway Interchange operating at unacceptable level of service (F) during both morning and evening peak hours. Implementation of the project would result in transportation efficiencies such as improved on-ramps and off-ramps. As a result, there would be no increase in energy consumption during project operation.

The project's use of energy during construction and operations would be necessary to provide for improved transportation and would not be wasteful or inefficient.

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

No Impact—The project would not obstruct state or local plans for renewable energy or energy efficiency. There would be no impact.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

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

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

No Impact—The project site is not located within or in the immediate vicinity of an Alquist-Priolo Earthquake Fault. Field surveys and literature review did not result in any evidence suggesting active faulting throughout or in the immediate vicinity of the project site. The nearest active fault is over a mile to the northeast of the proposed project's construction footprint. Therefore, there would be no impact.

ii) Strong seismic ground shaking?

Less Than Significant Impact—According to the United States Geological Service, Earthquake Shaking Potential for California, the project site is in an area of moderate shaking potential. The project will be designed to Caltrans' seismic standards and a further, more detailed, geotechnical study will be conducted prior to final design, which would account for any potential for loss, injury, or death due to seismic ground shaking. Therefore, this impact is less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact—The existing interchange has a very low risk of liquefaction due to the sandstone and claystone that underlies the project site. Future construction may be underlain by Quaternary alluvial deposits which could be susceptible to liquefaction; however, adhering to the California Building Code and Caltrans' Highway Design Manual would minimize for the risk of liquefaction. Therefore, this impact would be less than significant.

iv) Landslides?

No Impact—There is no risk of landslides on the project site because of the flat nature of the landscape. Best management practices and soil erosion controls would be implemented as part of the project design that would reduce the loss of topsoil. Therefore, there would be no impact.

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

Less Than Significant—The project would have very little potential to be susceptible to erosion/loss of topsoil due to the project site's generally gentle slope. Vegetation and utilization of other best management practices and avoidance measures listed in Chapter 2.2.2. would greatly reduce the risk of erosion and topsoil loss. Therefore, this impact would be less than significant.

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 site is not located on an unstable geologic unit, nor would project implementation have the potential to destabilize the underlying geologic unit resulting in landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, there would be no impact.

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—Although the project is on soils that are characterized as expansive (Calla-Carbona complex, eight to 30 percent slopes; Carbona clay loam, two to eight percent slopes; and Calla-Plieto complex, eight to 30 percent slopes), the project would not result in substantial direct or indirect risks to life and/or property. Building on expansive soils could cause foundations, underground utility lines, and pavement to crack and fail; however, the city of Tracy would be required to design and construct the interchange and associated project components in conformance with the California Building Code and Caltrans' Highway Design Manual. The California Building Code requires measures such as soil replacement, lime treatment, and post-tensioned foundations to offset expansive soils. With the above mentioned avoidance measures implemented, there would be no impact, and therefore no mitigation is suggested at this time.

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—Not applicable. No septic tanks or other wastewater disposal systems are involved in the project; therefore, the soils' ability to support such systems are not relevant.

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

Less Than Significant With Mitigation Incorporated—There would be a chance the project would impact paleontological resources during the ground disturbance phase of construction. To avoid and minimize the likelihood of an impact occurring, Caltrans' standard measures to stop work would be implemented. A Paleontological Evaluation Report will be prepared, and if necessary, a Paleontological Mitigation Plan will be prepared and implemented.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

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

and

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

a-b) Less Than Significant—While the proposed project will result in greenhouse gas emissions during construction, it is expected that the project will not result in any increase in operational greenhouse gas emissions. Vehicle miles traveled is projected to increase as a result of growth from ongoing and planned development; however, as mitigation for the planned development, the proposed project is intended to improve operations and traffic flow, which would reduce greenhouse gas emissions. The project would not add travel lanes or result in new vehicle trips. Operational greenhouse gas emissions are projected to be the same under both future Build and No-Build alternatives, and less than existing (2017) emissions under both scenarios. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction greenhouse gas-reduction measures, the impact would be less than significant.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

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

No Impact—Operation of the project would improve the interchange but would not result in any changes to the current conditions related to the transportation, use, and disposal of hazardous materials. Therefore, there would be no impact.

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

Less Than Significant—Construction of the project would entail the transportation, use, and disposal of hazardous materials and therefore this

the potential that a spill could occur, exposing workers and the public to a health hazard. However, best management practices discussed in Section 2.2.5, Hazardous Waste and Materials, would ensure that the risk of accidents to less than significant.

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

No Impact—No existing or proposed schools are located within one quarter mile of the project site; therefore, there is no potential to affect schools as result of the project.

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

No Impact—The agency database search completed by Environmental Data Resources identified one site, the ARP Mini-Mart Corporation/ARCO Station Number 6100 located at 25775 South Patterson Pass Road, near the project area. Records indicate petroleum hydrocarbon releases from underground storage tanks impacting soil and groundwater. Following initial remediation, elevated petroleum hydrocarbons were detected in the deep groundwater zone (about 90 to 114 feet below ground surface) in wells located along the southeast shoulder of Patterson Pass Road. As a result, monitoring and remediation equipment is present along the northwestern and southeastern edges of South Patterson Pass Road. Clean-up status for the site is listed as “open.”

Although construction is not expected to affect the ARP Mini-Mart gas station, associated monitoring wells may be within the construction area and could be disturbed by construction activities exposing workers and the public to hazardous materials or wastes. This impact is considered potentially significant. However, implementation of best management practices and avoidance measures discussed in Section 2.2.5, Hazardous Waste and Materials, would ensure that the impacts on human health would be reduced to a less-than-significant level

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 site is not within an airport land use or plan.

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

No Impact—The project is within the San Joaquin County’s Emergency Operations Plan service area. As discussed under Sections 2.15, Traffic and Transportation/Pedestrian and Bicycle Facilities and 3.2.17, Transportation, a project-specific Transportation Management Plan, would be developed and implemented before and during construction. The Transportation Management Plan would follow Caltrans’ Transportation Management Plan Guidelines and would include public information announcements, signage, coordination with emergency service providers, and construction scheduling coordination. There would be no impact on emergency response plans, emergency services or evacuation plans.

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 area is within an area of moderate fire hazard and is predominantly surrounded by open rangelands and the *Cordes Ranch Specific Plan* development. The project would improve an existing interchange and would not result in the location of either people or occupied structures in an area prone to wildfires, nor would it introduce new human presence or activity that could increase the potential for wildland fires. Therefore, there would be no impact.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

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

Less Than Significant Impact—All project activities would be subject to existing regulatory requirements. During Project operation, the proposed project would be required to meet all applicable water quality objectives for surface waters and groundwater contained in the Central Valley Water Board’s Basin Plan, would act in accordance with related regulatory agencies guidelines, and meet the goals and objectives of the San Joaquin County and the city of Tracy General Plans. Further, discharge of pollutants from urban runoff would be minimized with implementation of practices required by the municipal stormwater management programs for San Joaquin County, the city of Tracy, and Caltrans, and other CEQA, federal, and state requirements. Therefore, construction and operation activities would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Impacts on water quality would be less than significant.

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

No Impact—Construction activities would use commercially available water. No groundwater sources would be used as water supply for construction or operation of the project, and no groundwater pumping is required.

There would be minimal areas of additional impervious surface added, compared to the overall size of the groundwater basin. Recharge in the area would continue to occur through infiltration of precipitation. Therefore, the project would not affect groundwater levels or the capability for groundwater recharge within the localized groundwater aquifer area or the overall Tracy Subbasin. The project's minimal use of water would not deplete or interfere with groundwater supply or recharge or impede sustainable groundwater management of the basin. Therefore, there would be no impact on groundwater supplies or recharge.

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

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

Less Than Significant Impact—During construction, existing drainage patterns could temporarily be altered through grading, potentially resulting in temporary erosion. Best management practices would be implemented to manage runoff and potential erosion, as described in the Stormwater Pollution Prevention Plan and in compliance with the Construction General Permit. Good housekeeping practices identified in the stormwater pollution prevention plan would prevent runoff and contain associated sediment.

Minimal additional impervious surface would be added as part of the project. The proposed drainage would be like the existing drainage, and the existing drainage pattern would be maintained. Water resource management measures would limit disturbance of existing vegetation and permanent vegetation would be included. As a result, excess soil disturbance would be minimized, and associated soil erosion and siltation impacts would also be reduced. Further, the implementation of erosion and sediment control measures as identified in the Stormwater Pollution Prevention Plan and the addition of biofiltration swales or biofiltration strips would reduce erosion and siltation. This impact would be less than significant.

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

Less Than Significant Impact—Project construction activities may temporarily alter existing drainage patterns and result in temporary increases

in the rate or amount of local surface runoff and temporary flooding. Prior to rain, construction best management practices as identified in the Stormwater Pollution Prevention Plan would be in place to reduce surface runoff and temporary flooding. The minimal increase in impervious area would not cause onsite or offsite flooding. The proposed drainage would be like the existing drainage, with runoff directed by a combination of new and existing pipes, drainage inlets, and other storm drain facilities. The existing drainage pattern would be maintained, with flows draining into these ditches and channels. Drainage would ultimately be improved because the project would result in new drainage infrastructure and connections to the existing storm drain system that serves the site. To treat runoff from additional new impervious surface, the project would include biofiltration swales, biofiltration strips, or detention basins, which would reduce the volume of runoff entering the storm drainage system. Potential flooding would be no greater than under existing conditions. Impacts would be less than significant.

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

iv) Impede or redirect flood flows?

No Impact—During construction, the drainage pattern of the site or area may be temporarily altered. Construction equipment would be relocated to minimize flood risks or redirect flood flows. The project would implement best management practices to control construction site runoff, ensure proper stormwater control and treatment, reduce the discharge of pollution to the storm drain system, and ensure enough storm drain capacity for the project. A drainage plan would be submitted for approval by the City for onsite measures consistent with the city of Tracy's Storm Water Management Program and other applicable stormwater standards and requirements. Drainage facilities would accommodate events up to and including a 100-year 24-hour storm. Therefore, the project would not impede or redirect flood flows. There would be no impact.

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

No Impact—The project area is outside of the 100-year floodplain and is not near a large body of water. Thus, no risk for tsunami or seiche exists. There would be no impact.

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

No Impact—The project is within the San Joaquin County Water Management Plan area. The project is an interchange improvement project and would comply with the plan. There would be no impact.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project would improve an existing interchange. It would not introduce a new road or barrier between communities. Therefore, there would be no impact.

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

No Impact—The project would improve an existing interchange and would affect only small portions of parcels zoned for agriculture and urban reserve. There are no known land use plans, policies, or regulations that were adopted for avoiding or mitigating environmental effects that apply to the project area or the immediate surroundings. Therefore, there would be no impact.

3.2.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

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

No Impact—There are no mapped mineral resource zones within the project area. Because there are no known mineral resources present there would be no impact.

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—There are no mapped mineral resource zones within the project area according to the San Joaquin County and city of Tracy General Plans or the *Cordes Ranch Specific Plan*. Thus, there would be no impact.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

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

Less Than Significant Impact—The traffic noise modeling documented in the Noise Study Report indicates that traffic noise levels would increase relative to existing conditions by up to four decibels under the proposed project. This value does not exceed the threshold for a substantial increase in noise levels as defined by Caltrans (i.e., 12 decibels above existing levels). Therefore, under CEQA, this impact would be less than significant, and no mitigation is required.

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

Less Than Significant Impact—Operation of construction equipment may result in perceptible levels of ground-borne vibration in the immediate vicinity of construction areas. Heavy equipment used during construction may include rollers, bulldozers, and heavy trucks. These types of equipment may produce peak particle velocity vibration levels of up to 0.21 inch per second at a distance of 25 feet, which at this level could potentially be noticeable on an intermittent basis inside of buildings. The nearest building is a convenience store located in the southwest quadrant of the interchange, about 40 feet away from the limit of work.

Use of heavy construction equipment would be temporary and cease once construction is complete. The types of equipment scheduled for use in the work areas would not produce a level of vibration that is likely to be noticeable, result in negative community reaction, or cause building damage. Therefore, this impact would be less than significant, and no mitigation is required.

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 area does not lie within an airport influence or plan area. There are no airports within 2 miles of the project. Therefore, there would be no impact.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

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

No Impact—The project would improve an existing interchange. It would not induce growth either directly through the introduction of housing or jobs, or indirectly, by making new areas accessible for development. There would be no impact.

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

No Impact—The project would improve an existing interchange. Although some right-of-way would be acquired, the acquisition would not displace any residents and, therefore, would not necessitate the construction of housing elsewhere. There would be no impact.

3.2.15 Public Services

CEQA Significance Determinations for Public Services

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

Fire protection?

Less Than Significant Impact—The proposed project would improve an existing interchange. There would be no additional need for fire protection and no new or expanded facilities would be necessary. Construction of the project may involve temporary lane closures, which could result in temporarily decreased response times. This impact would be reduced to a less-than-significant level by the preparation and implementation of a Transportation Management Plan and early coordination with emergency service providers.

Police protection?

Less Than Significant Impact—The proposed project would improve an existing interchange. There would be no additional need for police protection and no new or expanded facilities would be necessary. Construction of the

project may involve temporary lane closures, which could result in temporarily decreased response times. This impact would be reduced to a less-than-significant level by the preparation and implementation of a Transportation Management Plan and early coordination with emergency service providers.

Schools?

No Impact—The proposed project would improve an existing interchange. It would not introduce new students, which might strain the capacities of existing schools. Therefore, the project would not result in the need for any modifications to existing schools or the construction of new schools.

Parks?

No Impact—The proposed project would improve an existing interchange. It would not introduce new residences, which might strain the capacities of existing parks. Therefore, the project would not result in the need for any modifications to existing parks or the construction of new parks.

Other public facilities?

No Impact—The proposed project would improve an existing interchange. It would not introduce new residences, which might strain the capacities of other public facilities. Therefore, the project would not result in the need for any modifications to existing facilities or the construction of new facilities.

3.2.16 Recreation

CEQA Significance Determinations for Recreation

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

No Impact—The proposed project would improve an existing interchange. It would not introduce new residences, which might lead to increased use of existing parks that could result in the degradation of the facility. Therefore, there would be no impact.

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 proposed project does not include any recreational facilities, nor would it result in additional population that would require the construction or expansion of recreational facilities. There would be no impact.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

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

No Impact—The proposed project is consistent with the *San Joaquin County General Plan*, the *City of Tracy General Plan* and the *Cordes Ranch Specific Plan*. It is also included in the regional emissions analysis conducted by the San Joaquin Council of Governments for the conforming Regional Transportation Plan/Sustainability Communities Strategy. There would be no impact.

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

No Impact—The proposed project is consistent with the CEQA Guidelines Section 15046.3.

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 involves interchange improvements and would be designed to avoid hazardous geometric design features and incompatible uses. There would be no impact.

d) Result in inadequate emergency access?

No Impact—The project would result in improved emergency access after project completion. During construction, emergency access would not be affected because a project-specific Transportation Management Plan would be developed and implemented before and during construction. The Transportation Management Plan includes a public information program and coordination with emergency service providers. The project would have no impact on emergency access.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less Than Significant Impact—There are no resources within the project area that are listed in or eligible for listing in the California Register of Historic Resources. The area is not considered to be sensitive for buried archaeological resources. In the case of an inadvertent discovery, Caltrans' standard measures to stop work in the event of an accidental discovery would ensure that impacts on any potential resources would be less than significant.

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 I of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision(c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact—There are no resources within the project area that meet the criteria for listing in the National Register of Historic Places. The area is not considered to be sensitive for buried archaeological resources. Caltrans' standard measures to stop work in the event of an accidental discovery would ensure that impacts on any potential resources would be less than significant.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

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

Less Than Significant Impact—The following utility companies have been determined to have facilities within the project vicinity: Pacific Gas and Electric, AT&T, Verizon, and Zayo (fiber network). During construction, potholing would be conducted to determine if any utilities exist in the construction area and need to be relocated. Any potential relocations will be handled on an as-needed basis in coordination with the utility owner to minimize interruptions in service. The physical impacts of the relocation of these facilities are addressed throughout this document.

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 proposed project is an interchange improvement project and would only require water supply during construction. Water for construction would be provided by water trucks. Therefore, the project would not require any additional water supply and there would be no impact.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact—The proposed project would improve an existing interchange and would not result in a change of demand for wastewater treatment. Therefore, there would be no impact.

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?

Less Than Significant Impact—Any solid waste produced by the proposed project would be limited to construction waste. All solid waste created during construction would be hauled away and disposed of according to state and local standards. Impacts would be less than significant.

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

Less Than Significant Impact—Any solid waste produced by the proposed project would be limited to construction waste. All solid waste created during construction would be hauled away and disposed of according to state and local standards. Impacts would be less than significant.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

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

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

No Impact—The project is an interchange improvements project and would not have an impact on an emergency response or evacuation plans after construction. During construction, the existing overpass would remain open and all traffic would be limited to existing or new pavement. No detours are expected. Also, a project-specific Transportation Management Plan would be developed and implemented before and during construction. The Transportation Management Plan would follow Caltrans' Transportation

Management Plan Guidelines and would include public information in multiple media; motorist information using radio announcements, traveler information systems, and signs; construction scheduling coordination; and other strategies as appropriate to the scale and scope of the project. Caltrans Standard Specifications Section 12, a part of all construction contracts, provides instructions on traffic control systems and devices to maintain traffic during construction within areas under Caltrans' control. The project would have no impact on emergency response plans or evacuation plans.

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?

Less Than Significant Impact—The project would improve the I-580/International Parkway Interchange. The project is designed to alleviate the impact of planned development and would not increase capacity; therefore, the potential for roadside fires would not increase. There would be no substantially increased risk related to pollutant concentrations or uncontrolled spread of wildfire. This impact would be less than significant.

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

No Impact—The project involves interchange improvements and would not require installation of new roadways, not addressed in the project description. Utilities might need to be relocated, but no new utilities would be required. Therefore, the project would not result in the installation of other infrastructure that may result in impacts on 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?

Less Than Significant Impact—The project involves interchange improvements and would not result in the relocation of structures. Other than the constructed slopes next to the overpass, site topography is relatively flat. Changes in site drainage and stormwater runoff control and treatment would be incorporated into project design and addressed through best management practices outlined in Section 2.2.2, *Water Quality and Storm Water Runoff*. Therefore, this impact would be less than significant.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant With Mitigation Incorporated—The project would not result in impacts on cultural resources, but would result in less than significant impacts with mitigation on biological resources. No jurisdictional wetlands or special plant species would be affected by project construction. Impacts on Waters of the State would be minimal and compensatory mitigation would result in no net loss of the resource. Impacts on special-status animal species would be reduced to a less-than-significant level with the implementation of mitigation discussed in Sections 2.3.3, Animal Species, and 2.3.4, Threatened and Endangered Species. These impacts on special-status species and their habitat would not cause any populations to drop below self-sustaining levels, threaten to eliminate an animal community, or substantially reduce numbers or restrict the range of any species.

b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant With Mitigation Incorporated—As discussed in Section 2.4, Cumulative Impacts, although past, present, and future projects in the area may result in cumulative impacts on some resource areas, the contributions of the proposed project would not be considerable. Cumulative impacts on farmlands, traffic/transportation, aesthetics (visual resources), hydrology and floodplain, air quality, noise, and biological resources (wetlands and other waters, plant species, animal species, threatened and endangered species, and invasive species) are expected. With the implementation of avoidance, minimization, and mitigation measures identified in Chapter 2 and Chapter 3, the project’s contribution to those cumulative impacts would not be considerable.

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

Less Than Significant Impact—The proposed project would not result in substantial adverse effects on human beings, either directly or indirectly. The project would involve some property acquisition but would not result in any business or residential relocations. Relocation of utilities may result in limited service disruptions and construction may result in minor inconvenience for travelers. Coordination with utilities and preparation of a Transportation Management Plan are standard measures that would reduce the minimal impacts further. The proposed project is an interchange improvement project and would not introduce more population or spur growth that would affect public services or utilities

3.3 Climate Change

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

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

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing greenhouse gas emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.3.1 Regulatory Setting

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

Federal

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

NEPA (42 United States Code Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

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

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 United States Code Section 6201) and Corporate Average Fuel Economy Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy program on the basis of 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, House of Representatives Bill 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 United States Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration is responsible for setting greenhouse gas emission standards for new cars and light-duty vehicles to

significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The current standards require vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. The United States Environmental Protection Agency and National Highway Traffic Safety Administration are currently considering appropriate mileage and greenhouse gas emissions standards for 2022 through 2025 light-duty vehicles for future rulemaking.

The United States Environmental Protection Agency's authority to regulate greenhouse gas emissions stems from the United States Supreme Court decision in *Massachusetts v. United States Environmental Protection Agency* (549 U.S. 497 (2007)). The Supreme Court ruled that greenhouse gases meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably expected to endanger public health or welfare. Responding to the Court's ruling, United States Environmental Protection Agency finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and Environmental Protection Agency's assessment of the scientific evidence that form the basis for Environmental Protection Agency's regulatory actions (United States Environmental Protection Agency 2009).

The National Highway Traffic Safety Administration and United States Environmental Protection Agency issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce carbon dioxide emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

State

California has been innovative and proactive in addressing greenhouse gas emissions and climate change by passing multiple Senate and Assembly bills and executive orders including, but not limited to, the following:

Executive Order S-3-05 (June 1, 2005): The goal of this executive order is to reduce California's greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 greenhouse gas emissions reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the

statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires the California Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. 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 for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under Assembly Bill 32.

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

Executive Order B-30-15 (April 2015) establishes an interim statewide greenhouse 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 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. Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every three years, and to ensure that its provisions are fully implemented.

Greenhouse gases differ in how much heat each trap in the atmosphere (global warming potential). Carbon dioxide is the most important greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called “carbon dioxide equivalent”. The global warming potential of carbon dioxide is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of carbon dioxide.

Senate Bill 32, Chapter 249, 2016, 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, declared “it to be the policy of the state that the protection and management of natural and working lands ... is an important strategy in meeting the state’s greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.”

Assembly Bill 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state’s goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

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

Executive Order B-55-18, (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing greenhouse gas emissions.

3.3.2 Environmental Setting

The proposed project is near and in the city of Tracy in western San Joaquin County, in the northern part of the San Joaquin Valley. Land uses within the project corridor are primarily agriculture, industrial, and transportation, sited amid gently rolling terrain and mostly weedy vegetation and agricultural fields. I-580 is an officially designated scenic route in the project area. Under

existing conditions, the I-580/International Parkway Interchange serves traffic to and from the Cordes Ranch Specific Plan Area (located north of I-580) and regional traffic from Schulte Road in the city of Tracy. A significant amount of commuter traffic to and from the San Francisco Bay Area uses the I-580/International Parkway Interchange and Patterson Pass Road to avoid congestion on the interstates and bypass Altamont Pass during morning and evening peak hours.

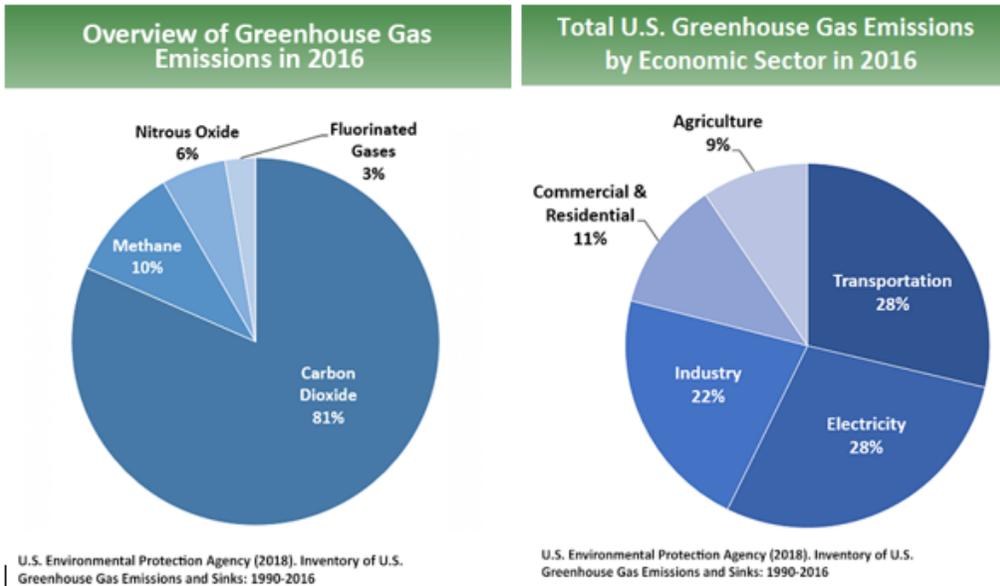
The San Joaquin Council of Governments' *Regional Transportation Plan/Sustainable Communities Strategy*, the *San Joaquin County General Plan 2035*, the *City of Tracy Transportation Master Plan*, and the *City of Tracy General Plan* guide transportation and housing development in the project area.

A greenhouse gas emissions inventory estimates the amount of greenhouse gases discharged into the atmosphere by specific sources over a period, 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. United States Environmental Protection Agency is responsible for documenting greenhouse gas emissions nationwide, and the California Air Resource Board does so for the state, as required by Health and Safety Code Section 39607.4.

National Greenhouse Gas Inventory

The United States 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, hexafluoroethane, 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 to 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 (United States Environmental Protection Agency 2018). In 2016, greenhouse gas emissions from the transportation sector accounted for nearly 28.5 percent of United States greenhouse gas emissions (see Figure 3.4-1).

Figure 3.4-1. United States 2016 Greenhouse Gas Emissions



State Greenhouse Gas Inventory

The California Air Resources Board collects greenhouse gas emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state’s progress in meeting its greenhouse gas reduction goals. The 2019 edition of the greenhouse gas emissions inventory found total California emissions of 424.1 million metric tons of carbon dioxide equivalent for 2017, with the transportation sector responsible for 41 percent of total greenhouse gases (see Figure 3.4-2) (California Air Resources Board 2019a). It also found that overall statewide greenhouse gas emissions declined from 2000 to 2017 despite growth in population and state economic output (see Figure 3.4-2) (California Air Resources Board 2019b).

Figure 3.4-2. California 2017 Greenhouse Gas Emissions

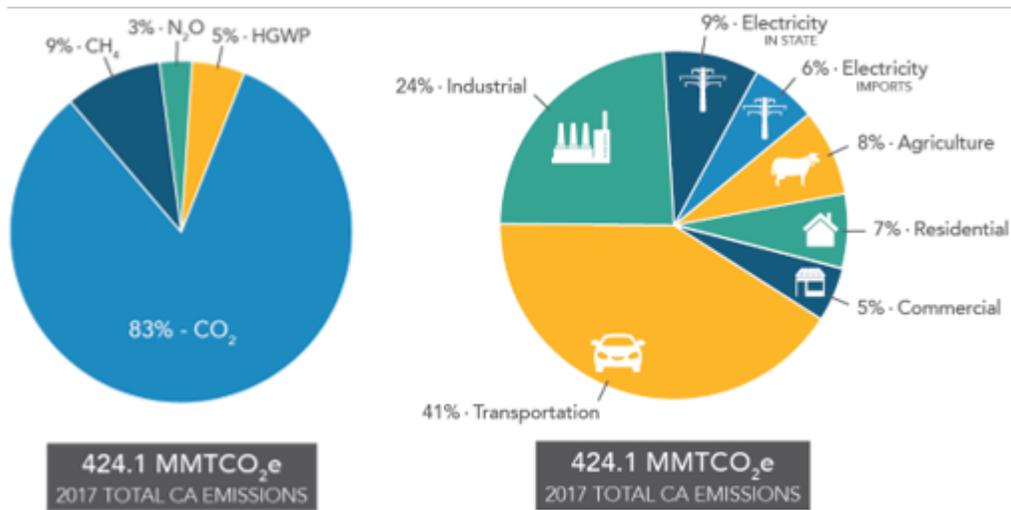
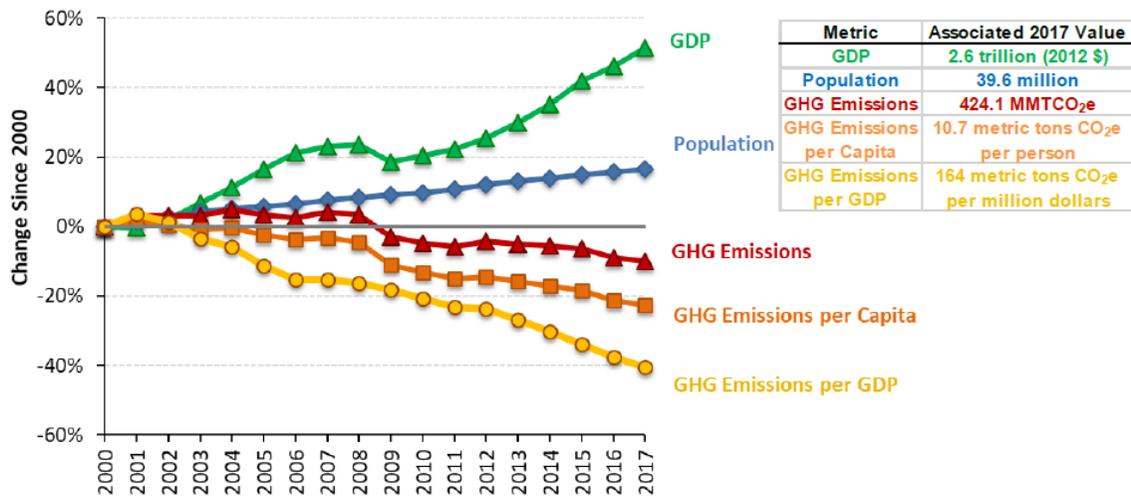


Figure 3.4-3. Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions Since 2000



Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every 5 years. The California Air Resources Board adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in Executive Order B-30-15 and Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions.

Regional Plans

California Air Resources Board sets regional targets for California’s 18 metropolitan planning organizations to use in their Regional Transportation Plan/Sustainable Communities Strategy to plan future projects that will cumulatively achieve greenhouse 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 San Joaquin Council of Governments Regional Transportation Plan/Sustainable Communities Strategy. The regional reduction targets for the San Joaquin Council of Governments are 12 percent by 2020 and 15 percent by 2035 (California Air Resources Board 2019c).

In addition to the San Joaquin Council of Governments Regional Transportation Plan/Sustainable Communities Strategy, the San Joaquin County General Plan 2035, the City of Tracy Transportation Master Plan (2012), the City of Tracy General Plan (2011), and the City of Tracy Sustainability Action Plan (2011) contain goals and policies related to greenhouse gases and climate change. These goals are summarized in Table 3.4-1.

Table 3.4-1. Applicable Greenhouse Gas Reduction Policies from Regional Plans

Title	Greenhouse Gas Reduction Policies or Strategies
San Joaquin Council of Governments Regional Transportation Plan/Sustainable Communities Strategy (San Joaquin Council of Governments 2018)	<ul style="list-style-type: none"> • Policy: Maximize Mobility and Accessibility • Strategy Number 4. Improve Regional Transportation System Efficiency
San Joaquin County General Plan 2035 Policy Document (San Joaquin County 2016)	<ul style="list-style-type: none"> • Public Health and Safety Element • Goal PHS-6. To reduce greenhouse gas emissions as part of the Statewide effort to combat climate change. • Transportation Greenhouse Gas Reduction Strategies: 0.05 percent reduction in vehicle miles traveled based on percentage of streets with planned improvements. • Public Facilities and Services Element—Transportation and Mobility • TM-2.4: Rural Complete Streets. The County shall strive to serve all users on rural roadways in the County and shall design and construct rural roadways to serve safely bicyclists, transit passengers, and agricultural machinery operators. • TM-4.3 Bicycle Safety. The County shall support bicycle safety programs for children and commuters in the County. • TM-4.4 Safe Pedestrian Crossings • TM-4.12 Sidewalk Design

Title	Greenhouse Gas Reduction Policies or Strategies
City of Tracy General Plan (Design, Community, and Environment 2011)	<ul style="list-style-type: none"> • Air Quality Element • Goal AQ-1. Improved air quality and reduced greenhouse gas emissions • Action A5. The City shall evaluate the installation of light emitting diodes or similar technology for traffic, street and other outdoor lighting where feasible. • Objective AQ-1.3 Provide a diverse and efficient transportation system that minimizes air pollutant and greenhouse gas emissions. • Circulation Element • Goal CIR-1 A roadway system that provides access and mobility for all of Tracy's residents and businesses while maintaining the quality of life in the community. • Policy P1. ...Enhance multi-modal transportation by increasing mobility and improving safety for autos, trucks, transit, pedestrians and bicyclists. • Objective CIR-1.8 Minimize transportation-related energy use and impacts on the environment. • Policy P2. When possible, road construction and repair projects shall use sustainable materials. • P3. The City shall encourage the use of non-motorized transportation and low-emission vehicles.
City of Tracy Citywide Roadway & Transportation Master Plan (RBF Consulting 2012)	<ul style="list-style-type: none"> • The Transportation Management Plan builds upon the goals and objectives as defined in the Circulation Element of the City's General Plan (July 2010) and the Sustainable Action Plan (February 1, 2011).
City of Tracy Sustainability Action Plan (City of Tracy 2011)	<ul style="list-style-type: none"> • Transportation and Land Use Target • Target Number 6a: 20 percent reduction in the community vehicle miles traveled per capita from current (2006) levels. • Sustainability Measures • T-10: Ramp Metering on Interstate 205. Work with Caltrans and the San Joaquin Council of Governments to implement ramp metering on Interstate 205 to minimize congestion-related greenhouse gas emissions from both through trips and trips generated by Tracy that use Interstate 205.

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 primary greenhouse gases produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. A small amount of hydrofluorocarbon emissions is included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Public Resources Code, Section 21083(b)(2)). As the California Supreme Court

explained, “because of the global scale of climate change, any one project’s contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130)).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

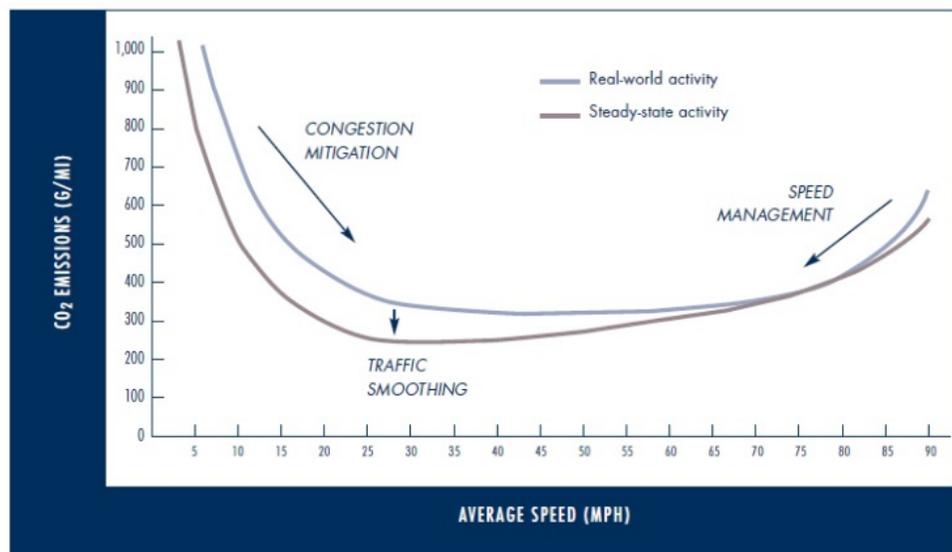
Operational Emissions

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

The highest levels of carbon dioxide from mobile sources such as automobiles occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0 to 25 miles per hour (Barth and Boriboonsoms in 2010) (see Figure 3.4-4). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

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

Figure 3.4-4. Possible Use of traffic operation strategies in reducing on-road carbon dioxide emissions



The proposed project is identified in San Joaquin Council of Governments' 2018 Regional Transportation Plan/Sustainable Communities Strategy under project ID SJ14-2002. The Regional Transportation Plan/Sustainable Communities Strategy contains adopted policies strategies for greenhouse gas emissions reduction from transportation sources on a regional scale. The Build Alternative directly supports the 2018 Regional Transportation Plan/Sustainable Communities Strategy "Maximize Mobility and Accessibility" policy, Strategy Number 4, Improve Regional Transportation System Efficiency, by reducing vehicle delay and congestion. This policy and strategy contribute to the overall greenhouse gas reduction efforts from mobile sources within the San Joaquin Council of Governments region. Greenhouse gas analysis for the proposed project incorporates by reference the greenhouse gas analysis included in Section 4.9 of the Draft Environmental Impact Report for the 2018 Regional Transportation Plan/Sustainable Communities Strategy as background setting information. The Draft Environmental Impact Report for the 2018 Regional Transportation Plan/Sustainable Communities Strategy found that the Regional Transportation Plan/Sustainable Communities Strategy would not impede attainment of the State 2030 and 2050 emissions targets (San Joaquin Council of Governments 2018).

The proposed project incorporates elements that support a connected multi-modal transportation system. Specifically, complete pedestrian and bicycle facilities will be provided through the interchange as part of the city of Tracy Bicycle Plan. These facilities will improve bicycle and pedestrian safety and support a mode shift to local active transit. Because the proposed project is mitigation to address traffic from the Cordes Ranch Specific Plan, which is

primarily comprised of fulfillment centers, bus transit alternatives would have limited effectiveness for reducing project generated vehicle miles traveled and were therefore eliminated from consideration. Four public bus service types are operated in the city of Tracy, including fixed route, dial-A-ride, intercity, and inter-regional. Regional commuter rail service is also provided by the Altamont Corridor Express and Amtrak San Joaquins, both of which stop in Tracy. Operational enhancements to both Altamont Corridor Express and Amtrak San Joaquins are planned, providing a stronger commuter link between northern San Joaquin Valley and the Bay Area (San Joaquin Council of Governments 2018).

Greenhouse emissions for existing year (2017), Opening Year (2023),¹ and Design Year (2043) with and without project conditions were evaluated through modeling using the Caltrans Emission Factor 2014 model and vehicle activity data provided by the project traffic engineer, Fehr and Peers (in 2019). As shown in Table 3.4-2, implementation of the Build Alternative would result in no change in greenhouse gas emissions compared with no-build conditions. This is because the project would not increase capacity and would not result in new trips or increase vehicle miles traveled relative to the No-Build Alternative, according to the Traffic Operation Analysis report completed in July 2019). Although average peak-hour vehicle speeds through the I-580/International Interchange would improve as a result of the proposed project, there would be minimal effects on overall vehicle miles traveled in the transportation study area, and, consequently, no change in emissions. Greenhouse gases would decrease relative to existing conditions, primarily because of improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles.

Table 3.4-2. Summary of Operational Greenhouse Gas Emissions (metric tons per year)

Scenario/Analysis Year	Carbon Dioxide Equivalent	Annual Vehicle Miles Traveled
Existing Year (2017)	868,255	1,905,421,416
Opening Year (2023 No-Build Alternative)	814,705	2,058,223,907
Opening Year (2023 Build Alternative)	814,705	2,058,223,907
Design Year (2043)	733,101	2,669,433,871
Design Year (2043)	733,101	2,669,433,871

Note: Modeled using Caltrans Emission Factor 2014

^a Annual vehicle miles traveled values derived from Daily vehicle miles traveled values multiplied by 347, per California Air Resources Board methodology (California Air Resources Board 2008).

¹ The traffic analysis originally assumed the project would be open-to-traffic in 2022. However, a one-year delay from 2022 to 2023 would not materially affect the traffic operations analysis, and as such, the vehicle volumes and intersection analysis presented in the *Traffic Operations Analysis Report* for the proposed project is representative of opening year conditions in 2023 (Choa pers. comm.)

While the Caltrans Emission Factor 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. 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 the Caltrans Emission Factor are therefore estimates and may not reflect actual physical emissions. Though the Caltrans Emission Factor 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 will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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.

The project’s construction emissions were calculated using the Roadway Construction Emissions Model Version 9.0. The model estimates emissions using a spreadsheet based on various parameters regarding the type of construction, area of disturbance, construction duration, and year of construction Table 3.4-3 shows construction-period greenhouse gas emissions for the Build Alternative, which are 3,677 metric tons of carbon dioxide equivalent over the two-year construction duration. Measures to reduce construction emissions include maintenance of construction equipment and vehicles, limiting of construction vehicle idling time, and scheduling and routing of construction traffic to reduce engine emissions.

Table 3.4-3. Summary of Construction Greenhouse Gas Emissions under the Build Alternative (metric tons per year)^a

Year	Carbon Dioxide	Methane	Nitrous Oxide	Carbon Dioxide Equivalent
Year 1	2,251	<1	<1	2,336
Year 2	1,307	<1	<1	1,341
Total	3,557	<1	<1	3,677

Emissions estimated using the Sacramento Metropolitan Air Quality Management District Road Construction Model, version 9.0 using project-specific data provided by design staff.

^a The emissions analysis was conducted using emission factors for 2021 and 2022 conditions. Because the project will now be constructed in 2022 and 2023, and emission factors decline annually due to fleet turnover, actual emissions will likely be lower than those presented above.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and Section 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all California Air Resources Board emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

CEQA Conclusion

While the proposed project will result in greenhouse gas emissions during construction, it is expected that the project will not result in any increase in operational greenhouse gas emissions. Vehicle miles traveled is projected to increase as a result of growth from ongoing and planned development; however, as mitigation for the planned development, the proposed project is intended to improve operations and traffic flow, which would reduce greenhouse gas emissions. The project would not add travel lanes or result in new vehicle trips. Operational greenhouse gas emissions are projected to be the same under both future Build and No-Build alternatives, and less than existing (2017) emissions under both scenarios. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction greenhouse-reduction measures, the impact would be less than significant.

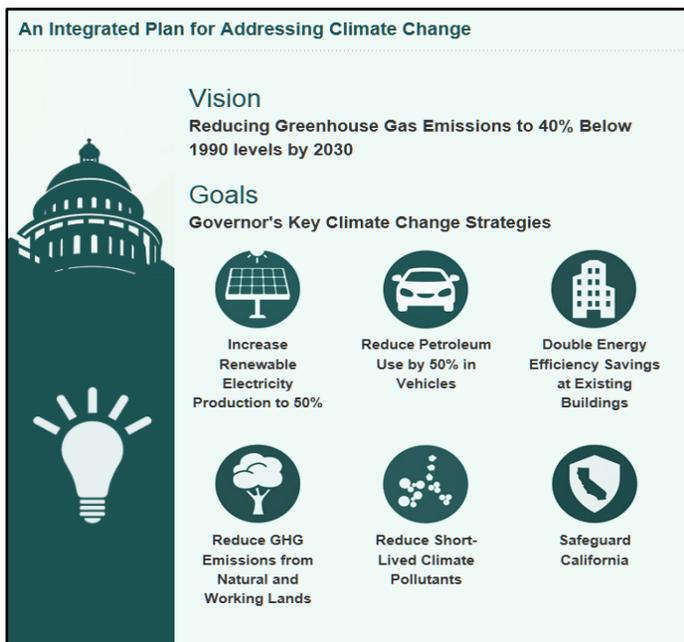
Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. Former Governor Edmund G. Brown promoted greenhouse reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California* (see Figure 3.4-5).

Figure 3.4-5. 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).

Senate Bill 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above-ground and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Executive Order B-30-15, issued in April 2015, and Senate Bill 32 (2016), set an interim target to cut greenhouse gas emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan 2040

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with carbon dioxide reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

Senate Bill 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under Assembly Bill 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While metropolitan planning organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation Plan 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

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

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

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 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 greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

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

- Caltrans Standard Specifications such as Section 14-9.02, Air Pollution Control, require contractors to comply with all Federal, State, and local air pollution control rules, regulations, and ordinances. Requirements such as idling restrictions and keeping engines properly tuned reduce emissions, including greenhouse gas emissions.
- A Transportation Management Plan will be prepared during the design phase of the project to minimize traffic disruptions from project construction. Minimizing traffic delays during construction will help reduce greenhouse gas emissions from idling vehicles.
- Per Caltrans standards for energy efficient roadway lighting, the project will use energy efficient light-emitting diode lighting fixtures.
- Bicycle and pedestrian facility improvements included in the project design support these alternative modes of transportation to reduce vehicle use emissions.
- A lifecycle cost analysis for pavements will be prepared to support the design and installation of long-life pavement structures.

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

The United States 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 United States 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” (United States Global Change Research Program 2018).

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

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

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California’s Fourth Climate Change Assessment* (2018) is the state’s effort to “translate the state of climate science into useful information for action” in a variety of sectors at both statewide and local scales. It adopts the

following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- Resilience is the “capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience”. Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

Executive Order S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

Executive Order S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (Sea Level Rise Guidance) in 2010, with instructions for how state agencies could incorporate “sea-level rise projections into planning

and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This Executive Order recognizes that effects of climate change other than sea-level rise also threaten California’s infrastructure. At the direction of Executive Order B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

Assembly Bill 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and expected climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure*—Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence*—Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization*—Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the

vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea Level Rise

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

Floodplains

The project area does not contain any naturally occurring water bodies; the California Aqueduct is a built feature immediately east of the project area. Most stormwater runoff from the existing interchange is conveyed as sheet flow and percolates into adjacent unpaved areas; berms along the California Aqueduct prevent runoff from reaching it (ICF International 2015). The San Joaquin County flood zone viewer shows that the project area is in a Federal Emergency Management Agency Zone X, an area determined to be outside the 0.2 percent annual chance (500-year) flood. While future climate change is projected to bring less frequent but more intense storms in California, specific projections for the local project area are not available. Nonetheless, the project will incorporate temporary and permanent stormwater best management practices including construction and maintenance of biofiltration strips and biofiltration swales to treat stormwater runoff. Materials and design features would be selected for their resilience to extremes in precipitation and temperature.

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3.4 Wildfire

The proposed project is not in a very high fire hazard severity zone (California Department of Forestry and Fire Protection, 2007).

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

4.1 Coordination during Preparation of Technical Studies and the Initial Study/Categorical Exclusion

The following agency coordination took place during preparation of the technical studies and the Draft Initial Study.

Coordination for cultural resources included contacts as discussed below.

- Central California Information Center: A cultural resources records search was obtained from the Central California Information Center on August 8, 2017.
- California Native American Heritage Commission: A letter was sent on March 19, 2019 to the California Native American Heritage Commission to request a search of the Sacred Lands File and to request a list of Native American representatives who may be able to provide information about resources of concern to them located within or next to the area of potential effects. The Native American Heritage Commission responded on March 26, 2019, provided a list of Native American contacts and stated that the Sacred Lands File had no records of sacred lands in the immediate vicinity of the area of potential effects.
- California Valley Miwok Tribe: A letter was sent on May 6, 2019, and a follow up phone call was made on May 13, 2019. The California Valley Miwok Tribe indicated that they would like to be informed if any cultural materials were encountered.
- United Auburn Indian Community of the Auburn Rancheria: A letter was sent on May 6, 2019, and a follow up phone call was made on May 13, 2019. They have indicated that they have chosen not to consult on this project.

- North Valley Yokuts Tribe: A letter was sent on May 6, 2019, and a follow up phone call was made on May 13, 2019. The North Valley Yokuts have indicated that they would like to consult on this project and consultation is ongoing.
- Wilton Rancheria: A letter was sent on May 6, 2019, and a follow up phone call was made on May 13, 2019. The Wilton Rancheria has expressed interest in monitoring during construction. Consultation is ongoing.
- Buena Vista Rancheria of Me-Wuk Indians: A letter was sent on May 6, 2019, and a follow up phone call was made on May 13, 2019. As of this writing, no response has been received.
- Lone Band of Miwok Indians: A letter was sent on May 6, 2019, and a follow up phone call was placed on May 25, 2019. At the request of Jeremy Dutschke, Cultural Committee Member, the letter that had been sent earlier was forwarded. As of September 3, 2019, there has been no further communication from the Lone Band.
- California Valley Miwok Tribe/Sheep Rancheria of Me-Wuk Indians of California: A letter was sent on May 6, 2019, and a follow up phone call was made on May 13, 2019. As of this writing, no response has been received.

United States Fish and Wildlife Service: An official species listed was obtained from the United States Fish and Wildlife Service, Sacramento Fish and Wildlife Office, on October 2, 2019. A Biological Assessment was prepared and submitted to the United States Fish and Wildlife Service on December 4, 2019.

National Marine Fisheries Service: An unofficial species list was obtained from the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, West Coast Region on May 3, 2019.

California Department of Fish and Wildlife: An official species list was obtained from the California Department of Fish and Wildlife listing species from the California Natural Diversity Database on September 29, 2019.

Interagency Consultation: The project underwent Interagency Consultation through the San Joaquin Council of Governments interagency consultation process, in which memos requesting concurrence were circulated to the Interagency Consultation partners (the United States Environmental Protection Agency and the Federal Highway Administration).

The United States Environmental Protection Agency and the Federal Highway Administration concurred that the project is not a project of air quality concern on May 8, 2019 and May 14, 2019, respectively. Documentation is included in Appendix D.

4.2 Public Comments on the Initial Study and Responses

4.2.1 Public Circulation

Caltrans will circulate the draft environmental document for a 30-day review by agencies and members of the public. Upon completion of the public review and comment period, written responses to all comments will be prepared and made part of the final environmental document for consideration by decision-makers for the project.

Chapter 5 List of Preparers

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

David Farris, Associate Environmental Planner. B.S., Environmental Biology and Management, University of California, Davis; 2 years of preliminary environmental analysis experience; 17 years of environmental planning experience. Contribution: Generalist Oversight.

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: Air Quality Oversight.

David Lanner, Associate Environmental Planner (Arch). B.F.A., Art, Utah State University; 26 years of cultural resources experience. Contribution: Archeology Oversight.

Rogério Leong, Engineering Geologist. B.S., Geology, University of Sao Paulo, Brazil; 17 years of environmental site assessment and investigation experience. Contribution: Water Quality Oversight.

Jennifer Lugo, Senior Environmental Planner. M.A., History, California State University, Fresno; B.A., History, Minor in Political Science, California State University, Fresno; 14 years of environmental planning experience. Contribution: Generalist Senior Oversight.

Shawn Ogletree, Engineering Geologist. B.S., Environmental Conservation of Natural Resources, Texas Tech University; B.S., Wildlife/Fisheries Management, Texas Tech University; MPH, California State University, Fresno; 14 years of environmental health, environmental technical studies experience; 10 years of biology experience. Contribution: Hazardous Waste Oversight.

Alexander Christopher Rodriguez, Environmental Planner (Natural Science). B.S., Wildlife, Fish, and Conservation Biology, University of California, Davis; 1 year of environmental planning and wildlife biology experience, 2 years of Storm Water inspector experience. Contribution: Biology Oversight.

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; 17 years of paleontology/geology experience. Contribution: Paleontology Oversight.

Vladimir Timofei, Transportation Engineer. M.S., Civil Engineering, California State University, Fullerton; 18 years of environmental technical studies experience. Contribution: Noise Oversight.

Shahira Ashkar, ICF Project Manager/Managing Director. M.A., Anthropology, University of Arizona; 25 years of archaeology and environmental planning experience. Contribution: Environmental Document Preparation.

Jennifer Ban, ICF Visual Resources Specialist. B.L.A., Landscape Architecture, Pennsylvania State University, University Park; 20 years visual resources experience. Contribution: Visual resources.

Joseph Bashore, ICF Environmental Generalist. B.S., Environmental Management and Protection, Cal Poly, San Luis Obispo; 2 years' experience. Contribution: Community Impacts, Farmland, Relocations, Utilities and Emergency Services, Hazardous Materials.

Lindsay Christensen, ICF Senior Environmental Planner. B.S., Community and Regional Development, University of California, Davis; 14 years environmental planning experience. Contribution: Community Impact, Farmland, Relocations Senior Review.

John Howe, ICF Senior Wildlife Biologist. M.S., Environmental Biology, University of California, Los Angeles; 23 years of biological resources experience. Contribution: Wildlife Biology Senior Review.

Amy Poopatanapong, ICF Wildlife Biologist. M.S., Zoology, Washington State University; 17 years of biological resources experience. Contribution: Wildlife Biology.

Sarah "Renee" Richardson, ICF Botanist/Wetland Ecologist. B.S., Botany, Cal Poly, Pomona; 10 years' experience. Contribution: Plant Species, Wetlands and Other Waters, Invasive Species.

Tina Sorvari, ICF Environmental Planner. B.A., Anthropology, California State University, Sacramento; 19 years of environmental planning experience. Contribution: Hazardous Materials senior review; Traffic, Cultural Resources.

Katrina Sukola, ICF Water Quality Specialist. M.Sc., Chemistry, University of Manitoba; 15 years of environmental planning experience. Contribution: Floodplain/Hydrology, Water Quality/Stormwater.

Ellen Unsworth, ICF Geologist. M.S., Interdisciplinary Studies (Geology, Biology, Technical Communications), Boise State University, Idaho; 20 years environmental planning experience. Contribution: Geology and Paleontology Senior Review.

Jason Volk, ICF Acoustical Engineer. M.S., Mechanical Engineering, North Carolina State University, Raleigh. 19 years noise analysis experience. Contribution: Noise.

Jonathan “Hunter” Watkins, ICF Environmental Planner. B.S., Environmental Studies (minor in GIS), California State University, Sacramento; 6 years of environmental planning and GIS experience. Contribution: Geology, Paleontology, GIS, Project Coordination.

Lisa Webber, ICF Senior Botanist/Wetland Ecologist. M.S., Botany, University of Massachusetts, Amherst; 29 years botany and wetland ecology experience. Contribution: Plant Species, Wetlands, and Invasive Species Senior Review.

Laura Yoon, ICF Air Quality Specialist. M.S., Environmental Management, University of San Francisco; 10 years air quality and climate change analysis experience. Contribution: Air Quality, Greenhouse Gas.

Sandy Lin, ICF Air Quality Specialist. M.C.P., City and Regional Planning, University of Pennsylvania; 9 years environmental planning and air quality analysis experience. Contribution: Air Quality and Greenhouse Gas.

Lizetta Quick, ICF Environmental Planner. B.A., Environmental Studies/Politics, Whitman College; 18 years environmental planning experience. Contribution: Community Impacts, Farmland, Relocations, Utilities and Emergency Services, Hazardous Materials.

Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

Govin Newsom, Governor

DEPARTMENT OF TRANSPORTATION

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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.

A handwritten signature in blue ink, appearing to read "Toks Omishakin".

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

FAIR HOUSING

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

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

organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

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

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

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

RESIDENTIAL RELOCATION 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 Caltrans obtains control of the property to be eligible for relocation payments.

Purchase Differential

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

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

Rent Differential

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

Last Resort Housing

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

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

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

NONRESIDENTIAL RELOCATION ASSISTANCE

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

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items 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 a Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from Caltrans’ Division of Right-of-Way and Land Surveys. California’s law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Appendix C Special-Status Tables

Bound Separately

Appendix D Avoidance, Minimization and/or Mitigation Summary

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

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

Comply with Uniform Relocation Assistance and Real Property Acquisition Act

Any acquisitions and compensation to property owners would comply with the Uniform Relocation Assistance and Real Property Acquisition Act, as amended. In accordance with this act, compensation is provided to eligible recipients for property acquisitions. Relocation assistance payments and counseling would be provided by the transportation agencies to persons and businesses in accordance with the act, as amended, to ensure adequate relocation and a decent, safe, and sanitary home for displaced residents. All eligible displacees would be entitled to moving expenses. All benefits and services would be provided equitably to all residential and business displacees without regard to race, color, religion, age, national origins, and disability, as specified under Title VI of the Civil Rights Act of 1964. All relocation activities would be conducted by the implementing agencies in accordance with the Uniform Act, as amended. Relocation resources would be available to all displacees without discrimination.

The Nonresidential Relocation Assistance Program assists businesses, farms, and nonprofit organizations in locating suitable replacement properties and reimbursement for certain costs involved in relocation. The Relocation Assistance Program would provide current lists of properties offered for sale or rent, suitable for a business' specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are instead of any moving, searching, and re-establishment expenses.

All displacees would be contacted by a Relocation Agent, who would ensure that eligible displacees receive their full relocation benefits, including advisory assistance, and that all activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources would be available to all displacees

Conduct Future Geotechnical Investigation

Additional subsurface exploration and laboratory testing will be conducted for project design. Once the final interchange design is complete, drilling and sampling will occur. The additional investigation will include the depth at which groundwater is encountered, soil depths, and collections of bulk and relatively undisturbed soil samples for laboratory testing. As new components of the interchange are built, the liquefaction potential of the alluvial material will need to be analyzed further in a design-level geotechnical investigation to ensure the interchange maintains its low liquefaction potential.

Write a Paleontological Evaluation Report and Prepare and Implement a Paleontological Mitigation Plan, if needed

Following the recommendation of the Paleontological Identification Report written for the proposed project, a Paleontological Evaluation Report would be written and (if necessary) a Paleontological Mitigation Plan would be developed for project implementation. If the Paleontological Evaluation Report determines there could be significant impacts on paleontological resources, a Paleontological Mitigation Plan would be required prior to the start of any construction activities. The paleontological monitoring plan would consist of preconstruction, construction, and post-construction mitigation. Examples of mitigation activities to be incorporated into the final Paleontological Mitigation Plan would include the following:

Preconstruction Mitigation

- Designate a Principal Paleontologist—A Principal Paleontologist would be contracted to develop a detailed mitigation plan and supervise the paleontological mitigation program.

Construction Mitigation

- Retain full-time and on-call paleontology monitors—One or more paleontology monitors would be contracted to monitor construction-related excavation. Two individuals would be contracted to be on call to assist in the salvage of large specimens or fossil concentrations.
- Make repository arrangements—The Principal Paleontologist would conduct preliminary discussions with potential repository institution(s) to determine their needs and requirements for permanent conservation.
- Conduct monitoring during qualifying excavation—A paleontology monitor would be onsite during periods in which excavation into paleontologically sensitive geologic units (e.g., the Modesto Formation) is expected.

Excavations into paleontologically sensitive geologic units extending more than 5 feet below the native soil surface are recommended for monitoring.

- Salvage specimens—Salvage of potentially significant specimens discovered in situ in excavated surfaces would be conducted by the monitor in compliance with all safety regulations and with the implementation of all feasible precautions.
- Stop work if significant resources are encountered—The monitor or Principal Paleontologist would have the authority to halt or redirect excavation operations in the event of the discovery of fossils.

Post-Construction Mitigation

- Prepare fossils according to repository agreement—Any potentially significant fossils recovered during the monitoring and salvage phase would be cleaned, repaired, and hardened to the level required by the repository institution and would be donated to that institution.
- Provide copies of field records to repository institution—Copies of all supporting field records, notes, maps, geologic sections, and photographs would be submitted to the repository institution in accordance with its policies.
- Prepare final report—The Principal Paleontologist would prepare a final report of the mitigation plan and its implementation and results and submit it to the appropriate parties, institutions, and government agencies.

Monitor Wells

Monitoring/vapor recovery/air sparge wells, including below grade vapor recovery piping, that would be impacted by the improvement project must be properly protected in place or abandoned in accordance with San Joaquin County Environmental Health Department requirements prior to construction activities that may impact the wells.

Implement Health and Safety Plan

Contractors will be required to work under a health and safety plan and soil management plan. These plans will be prepared to address worker safety when working with potentially hazardous materials, including potential asbestos containing materials, lead-based paint, soils potentially containing aerially deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans will provide for identification of potential hazardous materials at the work site and for specific actions to avoid worker exposure.

To prevent exposure of workers and the public to contaminated soils, requirements as detailed in the Department of Toxic Substances Control Agreement will be followed. Surface soils from potentially contaminated areas will be screened and contaminated soils disposed of appropriately. Soil

excavated from the surface to a depth of 1 foot can be reused within the Caltrans right-of-way if covered with at least 1 foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within the Caltrans right-of-way, then the excavated soil should be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

If soils are to be moved from a roadway-adjacent parcel to another parcel, before construction the project will conduct a preliminary investigation and screening for aerially deposited lead to assess levels in the surface and near-surface soils along the project alignment. If soils contain aerially deposited lead in excess of established thresholds, soils will be disposed of in a manner compliant with the San Joaquin County Certified Unified Program Agencies regulatory requirements. Because construction activities are planned on South Patterson Pass Road in areas with known petroleum hydrocarbon impacts on soil, soil sampling should be conducted to evaluate potential environmental impairments, and soil management/reuse and possible disposal requirements.

To protect workers and the public from lead exposure, pavement striping subject to construction disturbance or removal will be tested for lead-based paints prior to disturbance or removal. All aspects of the proposed project associated with removal, storage, transportation, and disposal of yellow pavement striping will be in strict accordance with appropriate regulations of the California Health and Safety Code. Disposal of the stripes will be at a Class 1 disposal facility. The responsibility of implementing this measure will be outlined in the contract between the city or Tracy and its contractors.

To prevent exposure of workers and the public to asbestos and lead, a hazardous materials survey will be conducted prior to demolition or significant renovation of any structures. If lead or asbestos is found in these structures, an abatement plan will be developed prior to removal or renovation. The abatement plan will provide for a California-certified asbestos consultant and California Department of Health Services-certified lead project designer who will prepare hazardous materials specifications for the abatement of the asbestos containing materials and lead-containing paint. The specification will be the basis for selecting qualified contractors to perform the proposed asbestos and lead abatement work. A California-licensed asbestos abatement contractor will be retained to perform the abatement of any asbestos-containing construction materials and lead-based paint deemed potentially hazardous. Abatement of hazardous building materials will be completed prior to any work on these structures.

Implement Measures to Comply with San Joaquin Valley Air Pollution Control District Rule 9510

As required by San Joaquin Valley Air Pollution Control District Rule 9510, prepare and submit an air impact assessment to the San Joaquin Valley Air Quality Management District. The air impact assessment includes the calculation of emissions generated by the project and the emission reductions required by the provisions set forth in the rule. The air impact assessment must be submitted to the San Joaquin Valley Air Pollution Control District no later than applying for final discretionary approval, and offsite mitigation fees, if applicable, must be paid to the San Joaquin Valley Air Pollution Control District before issuance of the first grading/building permit, whichever comes first. Required onsite emission reductions and potential offsite emission reduction fees (if necessary) will be calculated through the permitting process, as dictated by Rule 9510, to reduce construction-related nitrogen oxide emissions by 20 percent and particular matter exhaust emissions by 45 percent, compared to the statewide fleet average.

Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Prior to construction, high-visibility orange construction fencing and/or flagging will be installed along the perimeter of the work area next to environmentally sensitive areas (e.g., wetlands, special-status species habitat, and active bird nests). Where specific buffer distances are required for sensitive biological resources (e.g., special-status species habitats and active bird nests), they will be specified under the corresponding measures identified below. The final construction plans would show the locations where fencing will be installed. The plans will also define the fencing installation procedure. The fencing would be maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities would cease until the fencing is repaired or replaced. The project's special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within environmentally sensitive areas.

Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

A qualified biologist would monitor all construction activities that involve ground disturbance (e.g., vegetation removal, grading) within or next to environmentally sensitive areas (e.g., wetlands, special-status species habitat, and active bird nests). The purpose of the monitoring is to ensure that measures identified in this Initial Study/Environmental Assessment are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the project complies with all applicable permit

requirements and agency conditions of approval. The biologist would ensure that fencing around environmentally sensitive areas remains in place during construction and that no construction personnel, equipment, or runoff/sediment from the construction area enters environmentally sensitive areas.

Compensate for Loss of Wetlands

Final compensatory ratios would be determined during the permitting process. The city of Tracy would compensate for permanent loss of seasonal wetland through one or more of the following mitigation options:

- Purchase compensatory credits for the affected habitat types at a United States Army Corps of Engineers-approved mitigation bank.
- Pay into the National Fish and Wildlife Foundation Sacramento District In-Lieu Fee Program.

Mitigate for Permanent Impacts on Special-Status Plants

If complete avoidance of special-status plants is not feasible, the project may compensate for unavoidable permanent direct effects on special-status plants through protection of the existing seed base by the collection of topsoil which will be used to reseed disturbed areas. Special-status plants may be planted or transplanted.

Mitigate and/or Compensate for Impacts on Threatened and Endangered/Animal Species through participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The project is covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and measures detailed in Chapter 5, Compensation Strategy, will be implemented. The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan has been incorporated into this document by reference and is available for review online at <https://www.sjcog.org/DocumentCenter/View/5/Habitat-Planpdf?bidId=>. The plan includes incidental take coverage. With participation in this plan no further compensatory mitigation for special-status species is necessary.

Appendix E Required Consultation and Concurrence Documentation

Bound Separately

List of Technical Studies

- Air Quality Report
- Noise Study Report
- Water Quality Report
- Community Impact Assessment Memo
- Natural Environment Study
- Location Hydraulic Study
- Historical Property Survey Report
- Archaeological Survey Report
- Hazardous Waste Reports
- Initial Site Assessment
- Visual Impact Assessment
- Paleontology Identification Report

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

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