

State Route 99/Cartmill Avenue Interchange Improvements

State Route 99 and Cartmill Avenue Interchange
between 0.6 mile south of and 0.7 mile north of Cartmill Avenue

City of Tulare, Tulare County

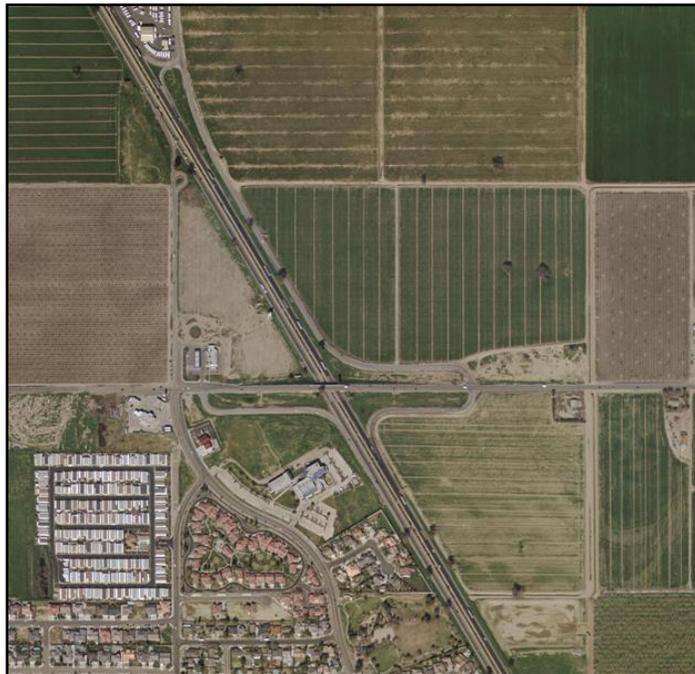
06-TUL-99-31.3/32.6

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06-332200

SCH# 2012041050

Initial Study with Mitigated Negative Declaration



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

August 2012



General Information About This Document

What's in this document?

This document contains a Mitigated Negative Declaration that examines the environmental effects of a proposed project on State Route 99 at Cartmill Avenue in Tulare County.

The Initial Study and proposed Mitigated Negative Declaration were circulated to the public from April 18, 2012 to May 18, 2012. Comment letters were received on the draft document. Responses to the circulated document are shown in the Comments and Responses section of this document added since the draft. Elsewhere throughout this document, a line in the right margin indicates a change made since the draft document circulation.

What happens after this?

The proposed project has completed environmental compliance after the circulation of this document. When funding is approved, the California Department of Transportation can design and build all or part of the project.

This document can also be accessed electronically at the following website:

<http://www.dot.ca.gov/dist6/environmental/envdocs/d6/>.

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

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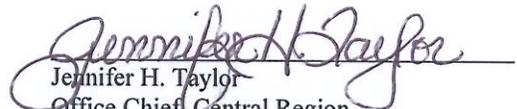
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06-TUL-99-31.3/32.6
PID# 06-0000-0368

Modify the existing interchange at State Route 99 and Cartmill Avenue 0.6 mile south of and 0.7 mile north of
Cartmill Avenue (post miles 31.3 to 32.6) in the city of Tulare in Tulare County

**INITIAL STUDY
with Mitigated Negative Declaration**

Submitted Pursuant to: (State) Division 13, California Public Resources Code
THE STATE OF CALIFORNIA
Department of Transportation

8/29/12
Date of Approval


Jennifer H. Taylor
Office Chief, Central Region
Environmental Southern San Joaquin Valley
California Department of Transportation
CEQA Lead Agency

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), in conjunction with the City of Tulare, proposes to modify the existing State Route 99/Cartmill Avenue/M Street interchange on State Route 99 between post miles 31.3 and 32.6 in the City of Tulare in Tulare County. The project would enhance safety, provide additional capacity on Cartmill Avenue by constructing interchange ramps to improve east-west circulation, and enhance local access to and from State Route 99 at Cartmill Avenue.

Determination

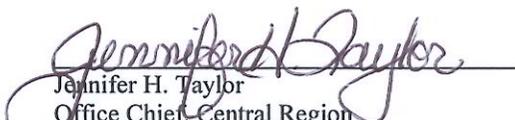
Caltrans, in conjunction with the City of Tulare, has prepared an Initial Study for this project. Following public review, it was determined from this study that the project would not have a significant effect on the environment for the following reasons.

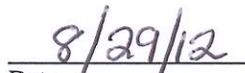
The project would have no effect on: the coastal zone, wild and scenic rivers, hydrology and floodplain, mineral resources, recreation, and timberlands.

The project would have no significant effect on: agricultural resources, natural communities, plant species, cultural resources, paleontology, water quality, land use and planning, community impacts, noise, public services, visual resources, air quality, geology and soils, hazards and hazardous materials, traffic and transportation/pedestrian and bicycle facilities, and utilities and service systems.

In addition, the project would have no significantly adverse effect on wetlands and other waters, animal species, and threatened and endangered species because the following mitigation measures would reduce potential effects to less than significant:

- The biological resources impacts would be mitigated by conducting preconstruction surveys, restricting activities to particular time frames, educating construction personnel, establishing exclusion zones, and compensating for loss of habitat.


Jennifer H. Taylor
Office Chief, Central Region
Environmental Southern San Joaquin Valley
California Department of Transportation
CEQA Lead Agency


Date

Summary

The California Department of Transportation (Caltrans), in conjunction with the City of Tulare, proposes to modify the existing State Route 99/Cartmill Avenue/M Street interchange on State Route 99 between post miles 31.3 and 32.6 in the City of Tulare in Tulare County, California. The project would enhance safety, provide additional capacity to Cartmill Avenue by constructing interchange ramps to improve east-west circulation, and enhance local road access to and from State Route 99 at Cartmill Avenue.

Six alternatives were originally considered. Four were rejected because they did not meet the project purpose and need or were not feasible because of safety and design considerations. Two alternatives—Alternatives 1 and 2—were carried forward and are addressed in this document.

Alternative 1 includes loop on-ramps from Cartmill Avenue to northbound and southbound State Route 99 and intersections at the off-ramps. Retention basins would be built within the northbound off-ramp and within the southbound off-ramp, which would intersect with M Street. Alternative 2 includes a loop on-ramp to northbound State Route 99 and a four-way intersection east of M Street for the on- and off-ramps to southbound State Route 99. Under both build alternatives, Akers Street (Road 100) would be realigned.

On May 30, 2012, Caltrans identified Alternative 2 as the preferred alternative. Alternative 2 affects fewer acres of biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need. The alternative is less expensive and has the support of the City of Tulare.

Table S-1 summarizes the results of the environmental studies and shows the potential environmental impacts for each alternative.

Table S-1 Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 1	Alternative 2	No-Build Alternative
Land Use	Consistency with the City General Plan	Consistent with City of Tulare General Plan	Consistent with the City of Tulare General Plan	Inconsistent with the City of Tulare General Plan
	Consistency with the County General Plan	Consistent with Tulare County General Plan	Consistent with the Tulare County General Plan	Inconsistent with the Tulare County General Plan
Parks and Recreation		Minor construction noise impact on Blain Park	Minor construction noise impact on Blain Park	No impacts
Growth		The project would accommodate local and regional growth, but is not expected to influence the overall amount, type, location, or timing of regional growth	The project would accommodate local and regional growth, but is not expected to influence the overall amount, type, location, or timing of regional growth	No impacts
Farmlands		Conversion of 81.9 acres of prime farmland	Conversion of 73.3 acres of prime farmland	No impacts
Community Character and Cohesion		Improved connectivity	Improved connectivity	No impacts
Relocation and Property Acquisition	Business displacements	Displacement of one business Partial acquisition of 3 businesses	No displacements Partial acquisition of 4 businesses	No impacts
	Housing displacements	Displacement of 1 residence	Displacement of 1 residence	No impacts
	Utility service relocation	Relocation of power poles	Relocation of power poles	No impacts
	Property Acquisition	38.3 acres would be acquired from 24 parcels	30.40 acres would be acquired from 28 parcels	No impacts
Utilities/Emergency Services		Possible intermittent utility interruption Minor temporary increase in emergency response time Long-term decrease in emergency response time	Possible intermittent utility interruption Minor temporary increase in emergency response time Long-term decrease in emergency response time	No impacts

Summary

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Traffic and Transportation/ Pedestrian and Bicycle Facilities	<p>Improved level of services at intersections and on- and off-ramps</p> <p>Improved traffic operations at State Route 99 southbound on-ramp from Cartmill Avenue</p> <p>Detour necessary during project construction</p>	<p>Improved level of services at intersections and on- and off-ramps</p> <p>Improved traffic operations at State Route 99 southbound on-ramp from Cartmill Avenue</p> <p>Detour necessary during project construction</p>	<p>Level of Service F at all intersections at peak hours</p> <p>No improvement in mainline and ramp operations</p> <p>No construction impacts</p>
Visual/Aesthetics	<p>Short-term visual changes due to construction</p> <p>Long-term visual changes due to widened roads and overpass</p> <p>Introduction of new sources of light and glare due to traffic signals and street lights</p>	<p>Short-term visual changes due to construction</p> <p>Long-term visual changes due to widened roads and overpass</p> <p>Introduction of new sources of light and glare due to traffic signals and street lights</p>	<p>No impacts</p>
Cultural Resources	<p>No significant cultural resources in project area</p> <p>Potential for discovery of previously unknown resources during construction</p>	<p>No significant cultural resources in project area</p> <p>Potential for discovery of previously unknown resources during construction</p>	<p>No impacts</p>
Hydrology and Floodplain	No impacts	No impacts	No impacts
Water Quality and Storm Water Runoff	Addition of approximately 12 acres of paved area would increase runoff	Addition of approximately 10.5 acres of paved area would increase runoff	No impacts
Geology/Soils/Seismic/ Topography	Potential geotechnical and geologic impacts related to erosion, ground-shaking, liquefaction, and shrink-swell potential concerns	Potential geotechnical and geologic impacts related to erosion, ground-shaking, liquefaction, and shrink-swell potential concerns	No impacts
Paleontology	Potential for impacts to paleontological resources	Potential for impacts to paleontological resources	No impacts

Summary

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Hazardous Waste/Materials	<p>Potential exposure of workers and public to aerially-deposited lead and lead-based paint. Special contract provisions would be implemented for worker and public safety.</p> <p>Partial acquisition of one gas station and full acquisition of another gas station.</p>	<p>Potential exposure of workers and public to aerially-deposited lead and lead-based paint. Special contract provisions would be implemented for worker and public safety.</p> <p>Partial acquisition of two gas stations.</p>	No impacts
Air Quality	<p>Included in conforming plan</p> <p>Meets project level conformity requirements</p> <p>Increased emissions of ozone precursors, CO and particulate matter during construction to be minimized by standard specifications</p> <p>Minor increase in emissions of ozone precursors, CO and particulate matter during after project is constructed</p> <p>Likely reduction in mobile source air toxics</p>	<p>Included in conforming plan</p> <p>Meets project level conformity requirements</p> <p>Increased emissions of ozone precursors, CO and particulate matter during construction to be minimized by standard specifications</p> <p>Minor increase in emissions of ozone precursors, CO and particulate matter during operation</p> <p>Likely reduction in mobile source air toxics</p>	Higher miles traveled indicates increased emissions+
Noise and Vibration	<p>No substantial increase in noise levels near sensitive receptors</p> <p>Standard specifications would be implemented to reduce construction noise</p>	<p>No substantial increase in noise levels near sensitive receptors</p> <p>Standard specifications would be implemented to reduce construction noise</p>	No impact
Natural Communities	No impacts	No impacts	No impacts
Wetlands and other Waters	<p>Temporary impacts on 0.11 acre and permanent impacts on 0.302 acre of seasonal pool</p> <p>Temporary impacts to 0.031 acre and permanent impacts to 0.082 acre of jurisdictional drainages</p>	<p>Temporary impacts on 0.083 acre and permanent impacts on 0.29 acre of seasonal pool</p> <p>Temporary impacts to 0.031 acre and permanent impacts to 0.082 acre of jurisdictional drainages</p>	No impacts
Plant Species	No impacts	No impacts	No impacts

Summary

Potential Impact	Alternative 1	Alternative 2	No-Build Alternative
Animal Species	Temporary impacts on 16.80 acres and permanent impacts on 33.25 acres of habitat for western burrowing owl, northern harrier, white-tailed kite and other migratory birds	Temporary impacts on 24.01 acres and permanent impacts on 25.98 acres of habitat for western burrowing owl, northern harrier, white-tailed kite and other migratory birds	No impacts
Threatened and Endangered Species	<p>Temporary impacts on 0.11 acre of vernal pool fairy shrimp and vernal pool tadpole shrimp habitat</p> <p>Permanent impacts on 0.071 acre of vernal pool fairy shrimp habitat</p> <p>Temporary impacts on 16.80 acres and permanent impacts on 33.25 acres of Swainson's hawk habitat</p> <p>Temporary impacts on 17.91 acres and permanent impacts on 35.65 acres of San Joaquin kit fox habitat</p>	<p>Temporary impacts on 0.11 acre of vernal pool fairy shrimp and vernal pool tadpole shrimp habitat</p> <p>Permanent impacts on 0.071 acre of vernal pool fairy shrimp habitat</p> <p>Temporary impacts on 24.01 acres and permanent impacts on 25.98 acres of Swainson's hawk habitat</p> <p>Temporary impacts on 24.79 acres and permanent impacts on 27.40 acres of San Joaquin kit fox habitat</p>	No impacts
Invasive Species	Potential to spread invasive species during construction	Potential to spread invasive species during construction	No impacts
Cumulative Impacts	Contribution to cumulative conversion of farmland	Contribution to cumulative conversion of farmland	No impacts

Table S-2 lists the necessary permits and approvals for the project.

Table S-2 Permits and Approvals

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 10 consultation for threatened and endangered species	Initiated in March 2012; project would be designed to minimize effects on threatened and endangered species to the extent possible. A Low Effect HCP is currently being developed by the U.S. Fish and Wildlife Service and will be finalized prior to construction.
U.S. Army Corps of Engineers	Section 404 permit (Nationwide 14)	Application to be submitted during project design.
Central Valley Regional Water Quality Control Board	Section 401 water quality certification National Pollutant Discharge Elimination System permit Report of waste discharge to obtain waste discharge requirements	Not yet initiated. Applications will be submitted after approval of the environmental document, if necessary.
San Joaquin Valley Air Pollution Control District	Review and approval of dust control plan—compliance with Regulation VIII Compliance with indirect source review	Not yet initiated. Plan will be prepared and authorization requested prior to construction.
Tulare Irrigation District	Review of plans	Not yet initiated. Review will occur prior to construction.

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CAFE	Corporate Average Fuel Economy
CH ₄	methane
City of Tulare	The City of Tulare as an entity, government
city of Tulare	The area of the city of Tulare
CO	carbon monoxide
CO ₂	carbon dioxide
dB	Decibel
dBA	A-Weighted Decibel
HFC-134a	1, 1, 1, 2 –tetrafluoroethane
HFC-152a	difluoroethane
HFC-23	fluoroform
HFCs	hydrofluorocarbons
L _{eq}	Equivalent Sound Level
mg/L	milligrams per liter
N ₂ O	nitrous oxide
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
O ₃	ozone
Pb	lead
PFCs	perfluorocarbons
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
ppm	parts per million
SF ₆	sulfur hexafluoride
SO ₂	sulfur dioxide
SO _x	sulfur oxides
µg/m ³	micrograms per cubic meter

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), in conjunction with the City of Tulare, proposes to modify the existing State Route 99/Cartmill Avenue/M Street interchange on State Route 99 between post miles 31.3 and 32.6 within the City of Tulare in Tulare County. The project would enhance safety, provide additional capacity on Cartmill Avenue by constructing interchange ramps to improve east-west circulation, and enhance local access to and from State Route 99 at Cartmill Avenue. Figures 1-1 and 1-2 show the project vicinity and location, respectively.

The State Route 99/Cartmill Avenue interchange was built in the 1950s as a part of the State Route 99 freeway construction. At the time of construction, the area around the interchange was rural, and most of the urban growth was south, in Tulare. Since that time, the city limits have expanded north to encompass the interchange, and adjacent lands are planned to convert from agricultural parcels to residential and commercial properties.

Caltrans is the lead agency under the California Environmental Quality Act. The project is sponsored by the City of Tulare, which considers the project necessary to support planned growth in the northern area of Tulare. The City of Tulare and the Tulare County Association of Governments are members of the project development team and are actively participating in the project's development. Both entities have been involved defining the purpose and need for the project.

The project is identified in the 2011 Tulare County Regional Transportation Plan. The project is not identified in the 2010 State Transportation Improvement Program for Tulare County's share. The project is being funded entirely by the City of Tulare and Measure R sales tax revenues. The project is included in the list of projects scheduled for funding for the first 15 years (Phase I) of Measure R.

Through the project area, State Route 99 is a four-lane freeway with a 42-foot-wide median. State Route 99 within the project limits is proposed to be widened within the median to a six-lane freeway as part of a separate capacity-increasing Caltrans project—the Tulare to Goshen Six-Lane Project (Project ID 0600000391). Full freeway access between State Route 99 and Cartmill Avenue is currently provided by a southbound off-ramp to M Street north of Cartmill Avenue; a southbound on-ramp

from Cartmill Avenue; a northbound off-ramp to Cartmill Avenue; and both northbound hook on- and off-ramps to Road 100/Drive 103 north of Cartmill Avenue and east of State Route 99. Each ramp is a single-lane entrance to, or exit from, the freeway. Stop-sign control is currently provided at the various ramp intersections.

Currently, Cartmill Avenue crosses over State Route 99 at a 30-degree skew. This overcrossing is a two-span structure with closed abutments. Approximately 51 feet of lateral clearance exists for each direction of travel on State Route 99, with approximately 15 feet of vertical clearance on the freeway. The overcrossing is 38 feet wide, with a paved width of 28 feet from one face of the curb to the other.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to:

- Relieve traffic congestion by providing additional capacity for Cartmill Avenue, improving local access to and from State Route 99 and Cartmill Avenue, and improving east-west circulation.
- Enhance traffic safety.
- Provide sufficient vertical clearance between the Cartmill Avenue overcrossing and State Route 99.

1.2.2 Need

The need for the project involves three concerns: relieving traffic congestion, enhancing safety, and providing sufficient clearance.

Relieve Traffic Congestion

The main need for the project is generated by existing traffic congestion along Cartmill Avenue at the Cartmill Avenue/State Route 99 northbound off-ramp intersection and at the Cartmill Avenue/M Street/State Route 99 southbound off-ramp intersection. Congestion at these points also affects east-west circulation in the northern area of the city.

Congestion can be represented by a road's level of service. Level of service is a qualitative measure of a road's traffic operating conditions. Level of service letter grades (A through F), representing progressively worsening traffic conditions, are assigned to intersections or roadway segments. Figures 1-3 and 1-4 illustrate levels of service at intersections.

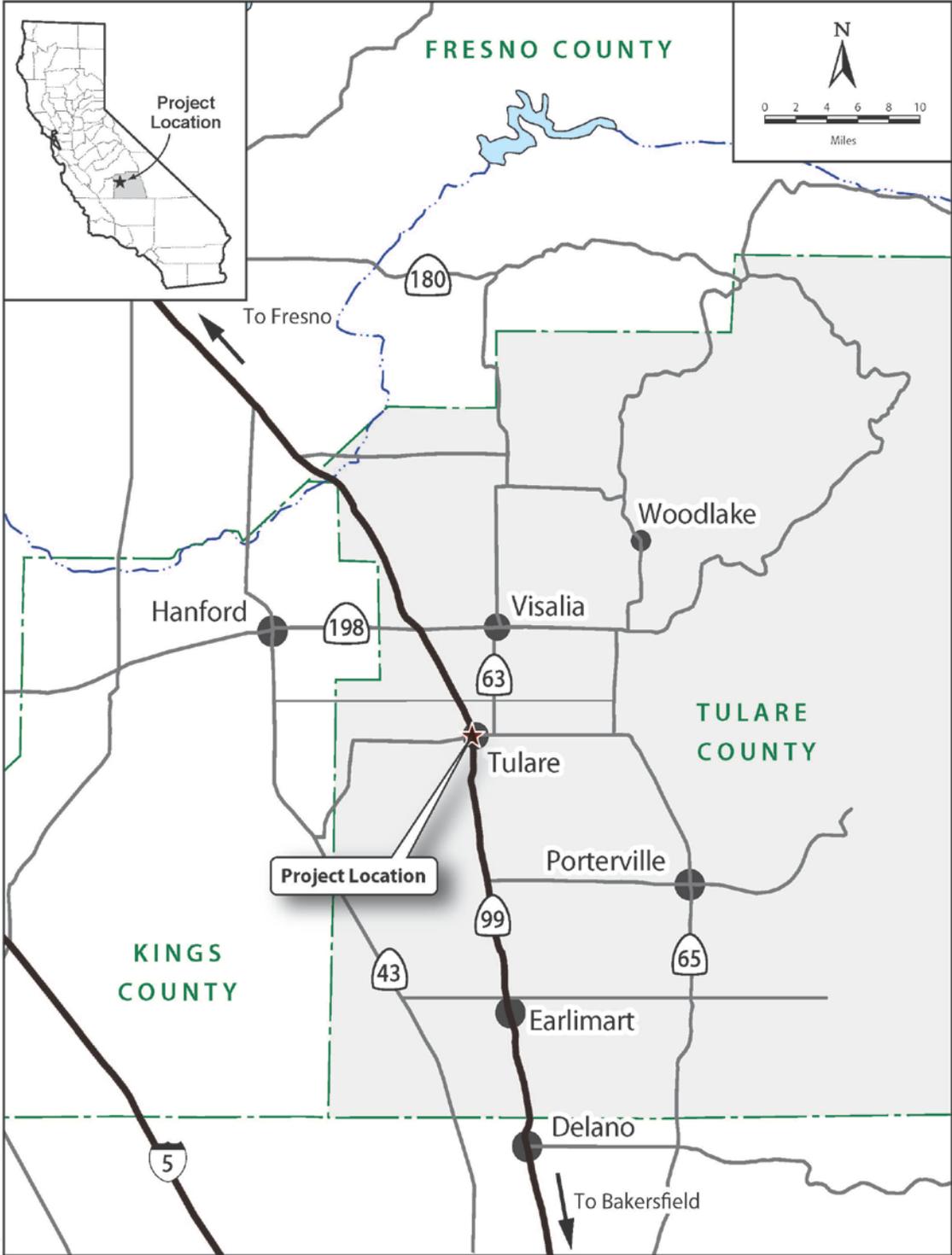


Figure 1-1 Project Vicinity



Figure 1-2 Project Location

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

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

Figure 1-3 Levels of Service for Two-Way Stop Intersections

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

Source: 2000 HCM, Exhibit 17-22, Level of Service Criteria for AWSC Intersections

Figure 1-4 Levels of Service for Intersections Without Signals (Four-Way Stop)

The Cartmill Avenue/State Route 99 northbound off-ramp intersection has morning and evening peak-hour level of service grades of E, and the Cartmill Avenue/M Street/SR 99 southbound off-ramp intersection has an evening peak-hour level of service grade of F (see Table 1-1).

Table 1-1 shows the morning and evening peak-hour level of service for both existing (2007) and forecasted design-year (2033) traffic conditions. Both the Cartmill Avenue/M Street/State Route 99 southbound off-ramp and the Cartmill Avenue/Drive 103/State Route 99 northbound off-ramp intersections currently operate at level of service grades F and E, respectively, during the evening peak traffic hour. For design-year conditions without the project, all four intersections are projected to operate at a level of service grade of F during both the morning and evening peak hours.

Table 1-1 Intersection Peak-Hour Traffic Level of Service for 2007 and 2033

Intersection	Morning Peak Hour		Evening Peak Hour	
	2007 Level of Service	2033 Level of Service	2007 Level of Service	2033 Level of Service
Road 100/Drive 103/State Route 99 northbound hook ramps	B	F	B	F
Cartmill Avenue/M Street/State Route 99 southbound off-ramp	C	F	F	F
Cartmill Avenue/State Route 99 southbound on-ramp	A	F	A	F
Cartmill Avenue/Drive 103/State Route 99 northbound off-ramp	E	F	E	F

Source: State Route 99/Cartmill Avenue Project Study Report Traffic Operations Analysis (2008).

Planned future growth described in the City of Tulare 2030 General Plan Update, including specific commercial development projects proposed at the Cartmill Avenue interchange (such as the Tulare Towne Center) as well as the Bethel Family Worship Center (a 29-acre campus with an Alzheimer's facility, nursing home, senior housing and a new church), would increase traffic congestion and further degrade the level of service along Cartmill Avenue and the ramp intersections with State Route 99.

Average daily traffic volumes on the Cartmill Avenue overcrossing of State Route 99 are projected to increase from the existing (2007) volume of about 12,270 vehicles to about 49,800 by the forecasted design year (2033). Cartmill Avenue currently provides only two lanes on the overcrossing, and the forecasted design-year daily volumes would exceed the existing roadway capacity (see Table 1-2).

Table 1-2 shows the existing and design-year roadway level of service along Cartmill Avenue between M Street and the proposed Akers Street. As indicated in the table, the study segment along Cartmill Avenue currently experiences a daily level of service of D, but is projected to operate at a level of service of F under design-year traffic conditions without the project.

Table 1-2 Roadway Segment Level of Service for 2007 and 2033

Condition	Roadway Segment	Location	Facility Type	Average Daily Traffic	Level of Service
2007	Cartmill Avenue	M Street to Akers Street*	Two-lane collector	12,270	D
2033	Cartmill Avenue	M Street to Akers Street*	Two-lane collector	49,800	F

Source: State Route 99/Cartmill Avenue Interchange Draft Project Report (2012).

** Akers Street is a future roadway (not yet built)*

Enhance Safety

Based on three-year accident data (April 1, 2007 to March 31, 2010), the State Route 99 northbound off-ramp to Cartmill Avenue and the State Route 99 southbound off-ramp to M Street currently experience actual accident rates that are higher than the corresponding average accident rates for similar facilities (see Table 1-3). The State Route 99 northbound off-ramp to Cartmill Avenue experienced seven accidents during this three-year period. The collision types included two broadsides, two sideswipes, one overturn, one hit object and one rear end. Five of the accidents occurred within the ramp area/intersection street, while two accidents occurred on the ramp. The State Route 99 southbound off-ramp to M Street experienced five accidents during this three-year period, with four accidents involving a hit object and one overturn accident. One of the hit object accidents also involved a fatality.

Table 1-3 provides traffic accident data for freeway-ramp segments in the project area for this three-year period.

**Table 1-3 State Route 99 Freeway-Ramp Traffic Collision Data
(April 1, 2007–March 31, 2010)**

Ramp Segment	Fatal	Inj.	Total	Actual Rate			Average Rate		
				Fatal	F + I	Total	Fatal	F + I	Total
Northbound off-ramp to Cartmill Avenue	0	1	7	0.000	1.00	7.00	0.004	0.42	1.20
Southbound on-ramp from Cartmill Avenue	0	0	0	0.000	0.00	0.00	0.002	0.26	0.75
Southbound off-ramp to M Street/ Cartmill Avenue	1	0	5	0.632	0.63	3.16	0.004	0.26	0.85
Northbound hook off-ramp to Road 100/Drive 103	0	0	0	0.000	0.00	0.00	0.004	0.28	0.95
Northbound hook on-ramp from Road 100/Drive 103	0	0	0	0.000	0.00	0.00	0.002	0.16	0.55

Source: *State Route 99/Cartmill Avenue Interchange Draft Project Report (2012)*.

Notes: Fatal = fatal accident
Inj. = injury accident
F + I = fatal plus injury accident
Total = total of all accidents

The northbound off-ramp to Cartmill Avenue and the southbound off-ramp to M Street both exceed the average accident rate. The proposed project would improve the intersection of State Route 99 northbound off-ramp with Cartmill Avenue, installing a traffic signal, providing additional vehicle storage, rebuilding the off-ramp to meet current geometric design standards (horizontal standards, vertical standards, sight distance standards, etc.), which would enhance safety. Furthermore, the off-ramp exit to M Street would be improved to meet current design standards under Alternative 1 or replaced under Alternative 2, enhancing safety.

Table 1-4 provides traffic accident data for State Route 99 freeway segments in the project area for the same three-year period from April 1, 2007 through March 31, 2010. As indicated by the information in the table, the actual accident rates are lower than the average accident rates for each segment.

**Table 1-4 State Route 99 Freeway-Segment Traffic Collision Data
(April 1, 2007–March 31, 2010)**

Freeway Segment	Fatal	Inj.	Total	Actual Rate			Average Rate		
				Fatal	F + I	Total	Fatal	F + I	Total
Prosperity Avenue to Cartmill Avenue (Northbound)	0	7	19	0.000	0.19	0.53	0.008	0.24	0.73
Prosperity Avenue to Cartmill Avenue (Southbound)	0	2	7	0.000	0.06	0.19	0.008	0.24	0.73
Cartmill Avenue to South Tagus Road (Northbound)	0	4	15	0.000	0.20	0.43	0.007	0.22	0.67
Cartmill Avenue to South Tagus Road (Southbound)	0	7	8	0.000	0.20	0.23	0.007	0.22	0.67

Source: State Route 99/Cartmill Avenue Interchange Draft Project Report (2012).

Notes: Fatal = fatal accident

Inj. = injury accident

F + I = fatal plus injury accident

Total = total of all accidents

Provide Sufficient Clearance

The existing width (or horizontal clearance) of the Cartmill Avenue structure over State Route 99 (overcrossing) will not accommodate future widening of State Route 99 to the ultimate transportation corridor dimensions for the highway (eight-lane freeway, about 160 feet wide through the Cartmill Avenue overcrossing). The proposed project would replace the existing Cartmill Avenue overcrossing with a new structure that meets current design standards and would allow for future widening of State Route 99.

1.3 Alternatives

A multidisciplinary team developed various design alternatives to achieve the project purpose and need while avoiding or minimizing environmental impacts. Two build alternatives (Alternative 1 and Alternative 2) and a No-Build Alternative were considered.

1.3.1 Build Alternatives

This section describes the two proposed build alternatives (Alternative 1 and Alternative 2), the common design features of these alternatives, and the features that are unique to each. No alternatives were proposed at a location other than the interchange because location alternatives would not be feasible and would not meet

the purpose and need of the project. The project would be built in a single phase as described below.

Alternative 1 would build a new Cartmill Avenue overcrossing structure and hook on-ramps to north- and southbound State Route 99, and realign Akers Street (Road 100) and Drive 103. Alternative 2 would build a new Cartmill Avenue overcrossing structure, a hook on-ramp to northbound State Route 99, and a new intersection at the on- and off-ramps to southbound State Route 99 and Cartmill Avenue, and realign Akers Street (Road 100) and Drive 103.

1.3.1.1 Common Design Features of the Build Alternatives

Proposed improvements for Alternatives 1 and 2 are shown in Figures 1-5 and 1-6.

Both build alternatives would do the following:

- Remove the existing northbound State Route 99 hook off- and on-ramps at Road 100/Drive 103.
- Build two lanes on new alignment for Akers Street (Road 100) east of the existing Drive 103 frontage road between Cartmill Avenue and just north of the existing northbound State Route 99 hook on- and off-ramps at Road 100/Drive 103. (Road 100 would be extended to the south to intersect with Cartmill Avenue, and the new road would be called Akers Street.)
- Remove the existing frontage road between Cartmill Avenue and the northbound State Route 99 hook ramps (Drive 103).
- Widen Cartmill Avenue from two lanes to a six-lane divided arterial from M Street to Akers Street.
- Transition Cartmill Avenue from M Street west and from Akers Street east to match existing Cartmill Avenue roadway sections.
- Transition M Street from Cartmill Avenue south to match existing roadway sections.
- Build a new Cartmill Avenue overcrossing structure over State Route 99.
- Remove the existing Cartmill Avenue overcrossing structure over State Route 99.
- Remove the existing northbound State Route 99 off-ramp to Cartmill Avenue.
- Build a new northbound State Route 99 off-ramp to Cartmill Avenue with a two-lane exit from State Route 99 and a 1,300-foot-long auxiliary lane.

- Build a new loop on-ramp and direct connecting on-ramp from Cartmill Avenue to northbound State Route 99.
- Provide a traffic census/data collection loop on each ramp lane at the gore.

1.3.1.2 Unique Features of the Build Alternatives

The proposed improvements for Alternatives 1 and 2 are shown in Figures 1-5 and 1-6. In addition to the common project features noted above, the two alternatives vary as described below.

Alternative 1

Alternative 1 would do the following:

- Modify the existing direct-connecting on-ramp from Cartmill Avenue to southbound State Route 99.
- Build a new loop on-ramp from westbound Cartmill Avenue to southbound State Route 99.
- Modify the existing southbound State Route 99 off-ramp to M Street to the intersection with Cartmill Avenue.
- Build six new retention basins (Basins A, B, C, D, E, and F in Figure 1-5) to accommodate and direct stormwater runoff from the proposed interchange.

The capitol cost for Alternative 1 is estimated to be \$37.0 million.

Alternative 2

Alternative 2 would do the following:

- Build a new direct-connecting on-ramp from Cartmill Avenue to southbound State Route 99 with a single-lane entrance to State Route 99 and a 1,000-foot auxiliary lane.
- Build a retaining wall next to the direct-connecting on-ramp from Cartmill Avenue to southbound State Route 99 and next to the existing church property.
- Relocate the southbound State Route 99 off-ramp to M Street to a new connection with Cartmill Avenue east of M Street.
- Build seven new retention basins (Basins C, D, E, F, G, H, and I in Figure 1-6) to accommodate and direct stormwater runoff from the proposed interchange.

The capitol cost for Alternative 2 is estimated to be \$33.3 million.

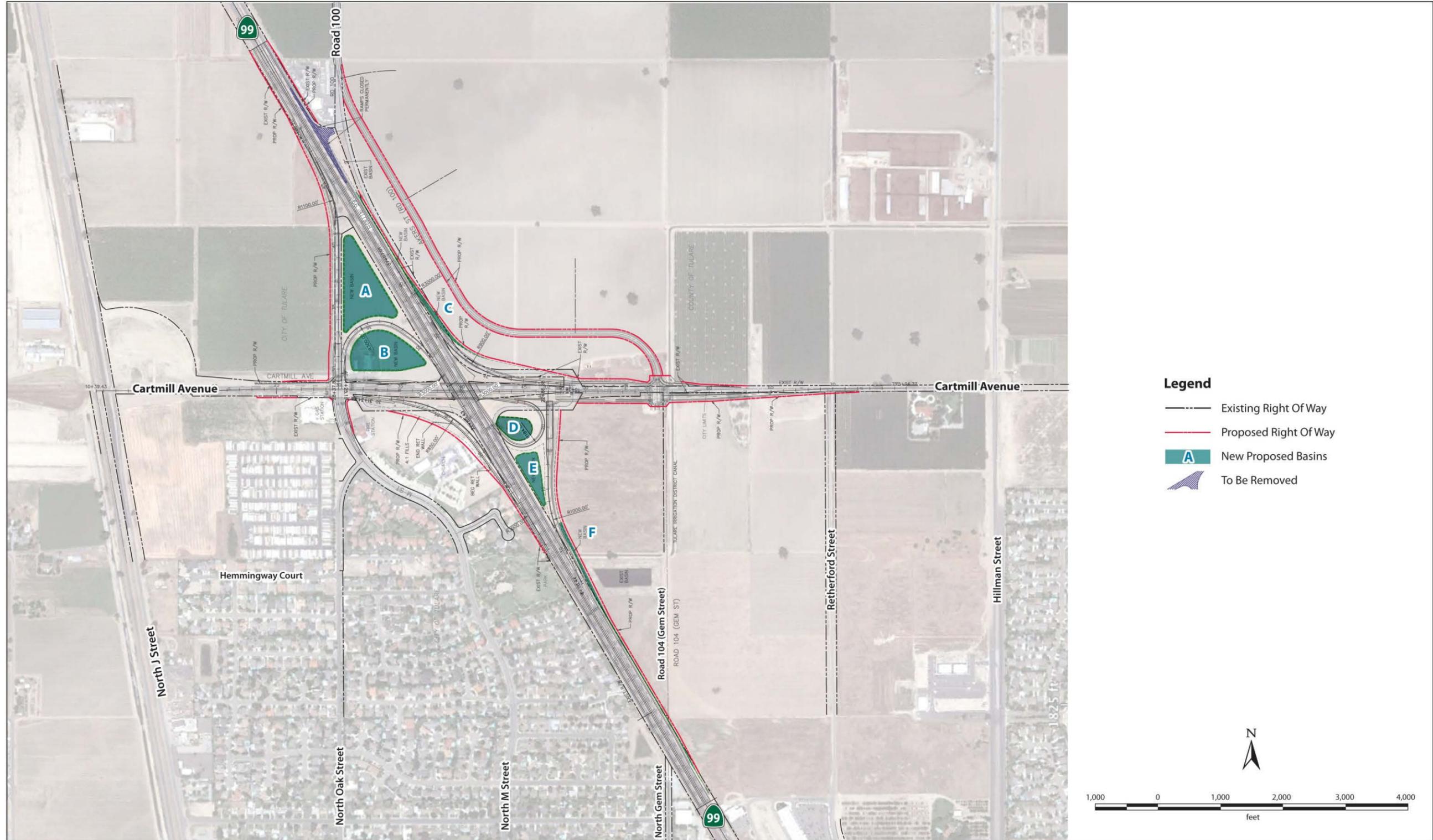


Figure 1-5 Alternative 1

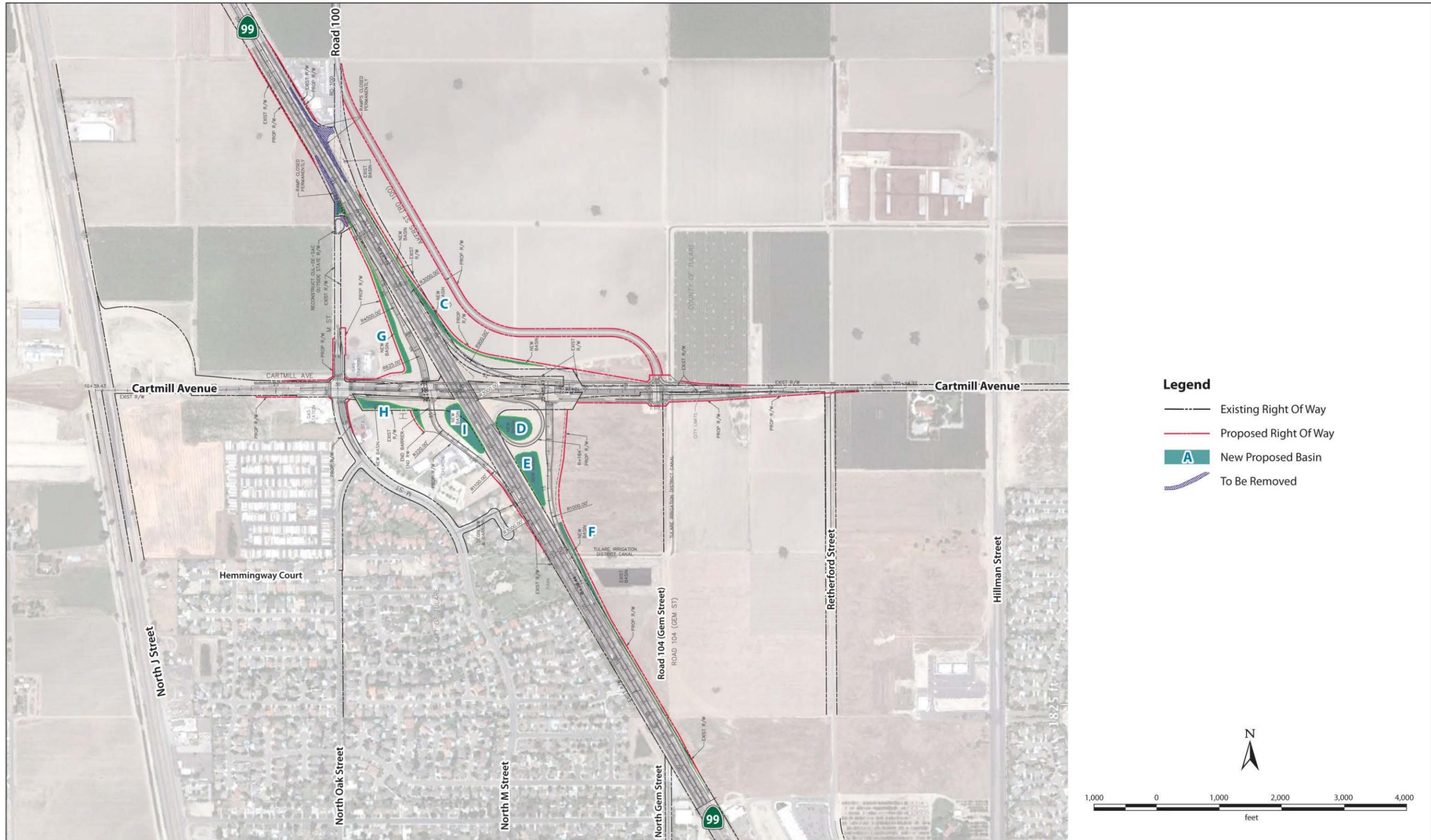


Figure 1-6 Alternative 2

1.3.2 No-Build Alternative

The No-Build Alternative would maintain the existing intersection structure configuration and nonstandard vertical clearance. The existing evening peak-hour level of service grade F at the Cartmill Avenue/State Route 99 northbound off-ramp intersection and the level of service grade E at the Cartmill Avenue/M Street/State Route 99 southbound off-ramp intersection would continue and worsen as planned development occurs.

1.3.3 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 alternatives include a number of Transportation System Management measures that will improve efficiency, including improved on- 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. Under both build alternatives, new bicycle and pedestrian facilities would be built across State Route 99 on both sides of Cartmill Avenue.

1.3.4 Comparison of Alternatives

A comparison of the build alternatives and the No-Build Alternative is provided in Table 1-5. Evaluation criteria included the ability of the alternative to meet the project purpose and need, the capital cost, and the impacts to the community. Because the project alternatives are similar in scope and footprint, most impacts to resources on the ground (such as biological resources) are comparable.

Table 1-5 Comparison of Alternatives

Evaluation Criteria	Alternative 1	Alternative 2	No-Build Alternative
Acceptable Intersection Levels of Service Provided	Yes	Yes	No
Meets "Purpose"	Yes	Yes	No
Estimated Capital Costs (\$millions)	\$37.0	\$33.3	\$0.0
Cartmill Overcrossing Closure Duration	7 months	7 months	0 months
Existing Business Access	Gas station at the northeast corner of M Street and Cartmill Avenue would be removed	Access to the gas station at the northeast corner of M Street and Cartmill Avenue would be <i>maintained</i> during and after construction	Access to the gas station would not change
Right-of-Way Acquisition (acres and number of affected parcels)	38.33 acres from 24 parcels	30.40 acres from 28 parcels	0 acres from 0 parcels
Residential Displacements	One residential displacement	One residential displacement	None
Business Displacements	Gas station at the northeast corner of M Street and Cartmill Avenue	None	None

After the public circulation period, all comments received on the environmental document were considered. The project development team has identified a preferred alternative and made the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, no unmitigable significant adverse impacts are identified; therefore, Caltrans and the City of Tulare have prepared a Mitigated Negative Declaration.

1.3.5 Identification of a Preferred Alternative

On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative. Alternative 2 affects fewer acres of biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need. The alternative is less expensive and has the support of the City of Tulare. The final determination is made by the District Director.

1.3.6 Alternatives Considered but Eliminated From Further Discussion

Four additional interchange alternatives—referred to here as Alternatives 3, 4, 5, and 6—were considered and eliminated from further discussion.

Alternative 3, a partial cloverleaf interchange with direct-connect on-ramps and T-intersection off-ramps at Cartmill Avenue, had insufficient intersection spacing between the State Route 99 southbound ramps and M Street intersections with Cartmill Avenue. This created a short, lane-changing section between the southbound ramp end and the westbound left turn to M Street, potentially allowing traffic to get backed up from the M Street intersection and block the southbound ramp.

Alternative 4 was similar to Alternative 1, except that this alternative did not include the eastbound Cartmill Avenue direct-connect on-ramp to southbound State Route 99. The project development team agreed that the provision of the direct-connect on-ramp was a preferred project feature.

Alternative 5 considered locating the State Route 99 southbound on- and off-ramps as hook ramps to a point about midway on M Street north of Cartmill Avenue, and Alternative 6 was similar to Alternative 4 but also included the eastbound Cartmill Avenue direct-connect on-ramp to southbound State Route 99. The project development team noted that the hook-ramp configuration between M Street and southbound State Route 99 did not represent a preferred alternative and agreed that Alternatives 5 and 6 could be dropped from further consideration.

Following approval of the Project Study Report in October 2008, a Value Analysis Study was prepared identifying an additional alternative—Value Analysis Alternative 2.5, which was similar to Alternative 1 except that M Street was to be realigned behind the ARCO AM/PM and the fire station. Though this alternative was rejected in the final Value Analysis Study based on degraded traffic operations, land use compatibility and cost, Caltrans and the City later agreed that Value Analysis Alternative 2.5 should be studied in greater detail. Upon further review by both Caltrans and the City, Value Analysis Alternative 2.5 was dropped from consideration because it would impair access to the fire station and service stations, and it would require additional right-of-way from the adjacent church site. Plus, Value Analysis Alternative 2.5 would require additional construction costs, and this alternative had no operational benefits over the two viable alternatives.

1.4 Permits and Approvals Needed

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

Table 1-6 Permits and Approvals

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 10 consultation for threatened and endangered species	Initiated March 2012. The project would be designed to minimize effects on threatened and endangered species to the extent possible. A Low Effect HCP is currently being developed by the U.S. Fish and Wildlife Service and will be finalized prior to construction.
U.S. Army Corps of Engineers	Section 404 permit (Nationwide 14)	Application to be submitted during project design.
Central Valley Regional Water Quality Control Board	Section 401 water quality certification National Pollutant Discharge Elimination System permit Report of waste discharge to obtain waste discharge requirements	Not yet initiated. Applications will be submitted after approval of the environmental document, if necessary.
San Joaquin Valley Air Pollution Control District	Review and approval of dust control plan—compliance with Regulation VIII Compliance with indirect source review	Not yet initiated. Plan will be prepared and authorization requested before construction.
Tulare Irrigation District	Review of plans	Not yet initiated. Review will occur before construction.

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

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

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

- Coastal Zone (within Land Use)—The project is not located within or in the vicinity of a Coastal Zone and would not affect such a zone.
- Wild and Scenic Rivers (within Land Use)—The project is not located next to or in the vicinity of a Wild and Scenic River and would therefore not affect any such resources.
- Timberlands (within Land Use)—The project is located in a rural area with farmlands. There is no timberland in the project area.
- Cultural Resources—Technical studies documented in the Historical Resources Compliance Report, Historic Resources Evaluation Report, and Archaeological Survey Report prepared for the project in December 2011 did not identify any cultural resources within the project area. Caltrans standard measures require that work stop in case of inadvertent discovery of archaeological or human remains, therefore ensuring that no cultural resources would be affected.
- Hydrology and Floodplain— Technical studies completed for this project included a Location Hydraulic Study and a Water Quality Assessment memo. Federal Emergency Management Agency Flood Insurance Rate Maps indicate that the project is not located in a 100-year floodplain and neither alternative would result in significant encroachment into a surrounding floodplain. Therefore, there would be no effects on floodplain.

- **Natural Communities**—The Natural Environment Study completed in February 2012 indicated the project area has been substantially altered by long-term human activity, and no sensitive natural communities are located within the project area, except seasonal pools, irrigation ditches, and a created detention basin, which are discussed separately under Wetlands and other Waters.
- **Plant Species**—The Natural Environment Study produced in February 2012 indicated that the project area does not contain any special-status plant species.

Caltrans is the lead agency under the California Environmental Quality Act. Because there is no federal funding or permitting, this project is not subject to the National Environmental Policy Act. Though this project is not subject to the National Environmental Policy Act, federal regulations are supplied for information and context purposes.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

The proposed project area is entirely within the City of Tulare's planning area, which encompasses 38,791 acres and includes all lands within the city limits as well as areas presently under Tulare County's jurisdiction but within the City of Tulare's Urban Development Boundary. The purpose of an Urban Development Boundary is to define 20-year planning areas around incorporated cities. Counties and cities use these boundaries to coordinate plans, policies, and standards related to development and regulations. These boundaries provide an official definition of the interface between future urban land uses and existing agricultural land uses. The breakdown of land uses within the City of Tulare's planning area is presented below. Vacant and agricultural lands in the area have the greatest potential for development.

Within the planning area, land uses are as follows:

- Agricultural uses—24,930 acres (64.3 percent)
- Single-family residential uses—about 3,878 acres (10.0 percent)
- Unknown (right-of-way) uses—2,769 acres (7.1 percent)
- Public uses—about 2,485 acres (6.4 percent)

- Vacant land uses—about 2,073 acres (5.3 percent)
- Industrial uses—1,321 acres (3.4 percent)
- Commercial uses—839 acres (2.2 percent)
- Multi-family residential uses—about 297 acres (0.8 percent)
- Water uses—about 199 acres (0.5 percent)

Within the city limits, land uses are as follows:

- Single-family residential uses—2,459 acres (21.9 percent), the largest portion of the incorporated area
- Public uses—2,121 acres (18.9 percent)
- Vacant land uses—1,898 acres (16.9 percent)
- Unknown (right-of-way) uses—1,774 acres (15.8 percent)
- Industrial uses—1,125 acres (10.0 percent)
- Agricultural uses—874 acres (7.8 percent)
- Commercial uses—697 acres (6.2 percent)
- Multi-family residential uses—295 acres (2.6 percent)
- Water uses—6 acres (0.1 percent)

Alternative 1 would require 38.33 acres and Alternative 2 would require 30.40 acres of additional right-of-way necessary for project implementation.

Implementation of Alternative 1 would convert 81.9 acres of farmland, and Alternative 2 would convert 73.3 acres of farmland. But the acres to be converted are within the Urban Development Boundary and are slated for future development. See Section 2.1.3, *Farmlands*, for the full discussion of farmland impacts.

Although the project area is entirely within the City of Tulare’s Urban Development Boundary, lands north of Cartmill Avenue and east of State Route 99 are within the County of Tulare.

Land southeast of the State Route 99/Cartmill Avenue interchange is zoned as Retail Commercial. Land southwest of State Route 99 is zoned as Single-Family Residential (R-1-7 in Figure 2.1.1-1) and Retail Commercial (C-3 in Figure 2.1.1-1). The land northwest of Cartmill Avenue is zoned as Retail Commercial. See Figure 2.1.1-1 for zoning designations in the project area.

The undeveloped parcels north of Cartmill Avenue are designated prime agricultural farmland. An ARCO AM/PM sits north of Cartmill Avenue and west of State Route 99. Residential and commercial uses are south of Cartmill Avenue and west of State Route 99, including a mobile home park for seniors and a gated residential community. The former Chevron/Stanley’s Food Mart, City of Tulare Fire Department Station 63, and Bethel Assembly of God/In Living Christ Church¹ are all south of Cartmill Avenue and west of State Route 99.

In addition to the existing land uses noted above, Table 2.1.1-1 provides a summary of proposed land uses in the project study area.

Table 2.1.1-1 Future Land Uses

Name	Jurisdiction	Proposed Uses	Status
Cartmill Crossing North	City of Tulare	1.4 million square feet of regional commercial	Property has been sold by the bank. Project cancelled.
Cartmill Crossing South	City of Tulare	233,120-square-foot shopping center	Project expired March 2010.
Bethel Assembly of God Church and Harmony Village Senior Living	City of Tulare	29-acre complex including a 60,000-square-foot church; 18,300-square-foot community center; 82,533-square-foot assisted living facility; 88,533-square-foot independent living facility; and a 106,110-square-foot senior apartment complex	Approved—Building plans for the assisted living facility have been submitted. Timing for the church/community center is 2015 and for the independent care is 2013. The senior apartments are a future project.
Tulare Towne Center	City of Tulare	707,759 square feet of retail/commercial use	Approved—expires in 2014.

Source: E-mails with City of Tulare Planner, Bonnie Simoes; November 4, 2010, e-mail to Lindsay Christensen of ICF regarding planned developments; January 31, 2011, e-mail to Shannon Hill of ICF regarding status of surrounding developments.

¹ The Bethel Assembly of God Church plans to move to a new location outside of the project impact area. It has sold its facility at 2516 North M Street to the In Living Christ Church, but has retained ownership of adjacent parcels. Until the new facility is built, both the Bethel Assembly of God congregation and the In Living Christ congregation will meet at the church on M Street.

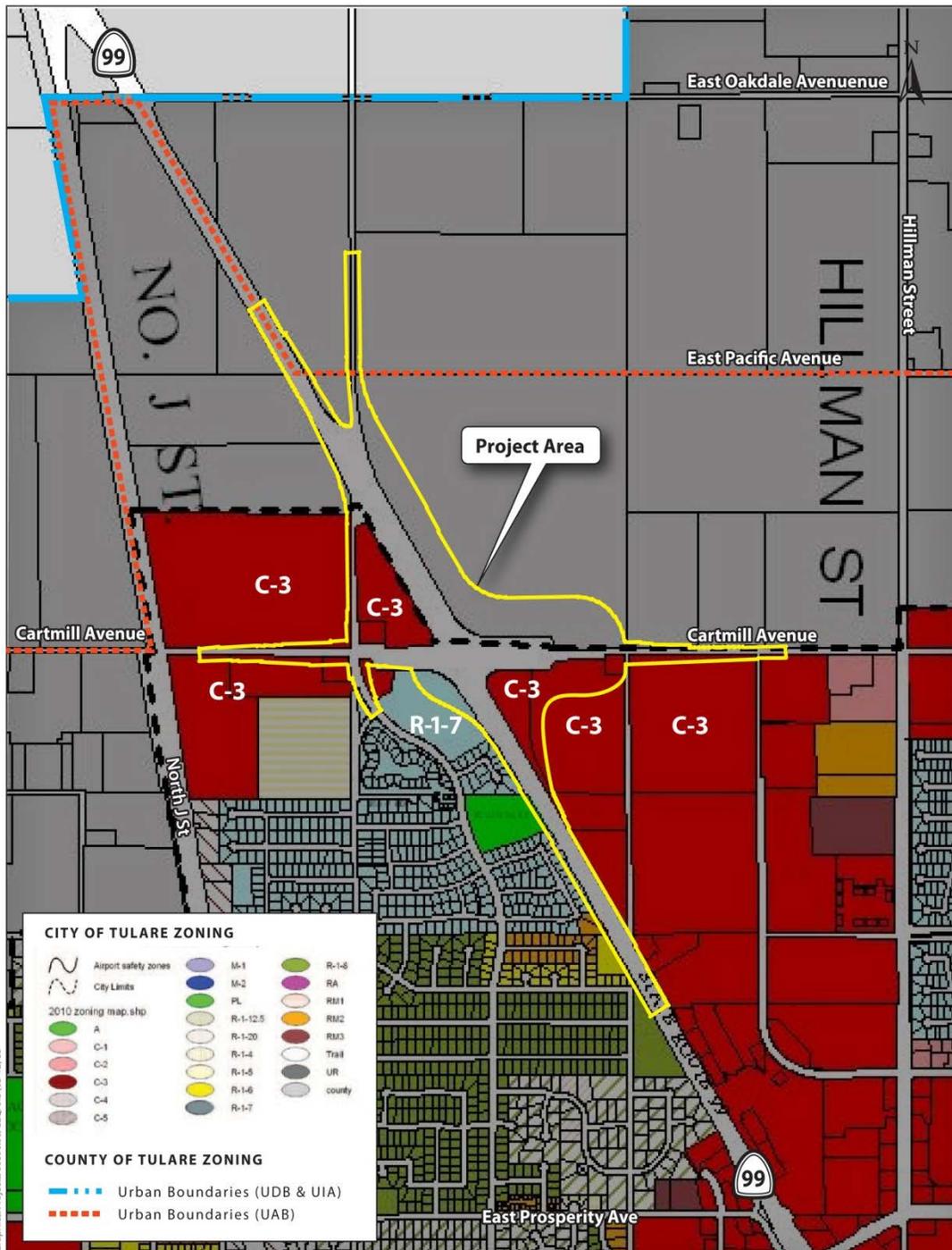


Figure 2.1.1-1 City of Tulare Zoning Map with Tulare County General Plan Urban Boundaries

Two new retail/commercial developments were planned for the east side of State Route 99: Cartmill Crossing North (APNs 149-230-011, 149-230-014, and 149-260-009) on the north side of Cartmill Avenue, and Cartmill Crossing South (APNs 166-010-005 and 166-010-061) on the south side of Cartmill Avenue. As noted in Table 2.1.1-1, these projects are no longer in the planning process.

Also noted in Table 2.1.1-1, the Bethel Assembly of God Church and Harmony Village Senior Living project is planned to include a 60,000-square-foot church, an 18,300-square-foot community center, an 82,533-square-foot assisted living facility, an 88,533-square-foot independent living facility, and a 106,110-square-foot senior apartment complex. The development would sit at the southwest corner of Cartmill Avenue and Retherford Street (APNs 166-010-020 and 166-010-103.) As a part of that project, a general plan amendment would be necessary to change the zoning: from Regional Commercial to Urban Residential and High-Density Residential on 11 acres; from Regional Commercial to Community Commercial on 18 acres; and from Retail Commercial to Multiple-Family Residential on 11 acres.

Also, the Tulare Towne Center has been approved and would be a 707,759-square-foot development of retail/commercial use. The Tulare Towne Center would be located on APN 149-080-011 on the north side of Cartmill Avenue between M and J Streets. If not initiated, this project will expire in 2014. See Figure 2.1.1-2 for existing and future land uses in the project vicinity.

Environmental Consequences

The proposed interchange changes would accommodate the City of Tulare's planned future growth and improve existing levels of service on local roadways. Under Alternative 1, an additional 38.33 acres of land would be converted to transportation use for additional right-of-way. Under Alternative 2, an additional 30.40 acres would be converted for additional right-of-way. In addition, the proposed project would permanently remove areas of Prime and/or Unique Farmland from agricultural production due to interchange construction. However, land designated as important farmland is not necessarily land that is currently being farmed. See Section 2.1.3, *Farmlands*, for additional discussion of farmland impacts.

The residential and commercial developments described in the *Affected Environment* section above are planned to be built by 2015. The land surrounding the interchange is zoned for residential and commercial uses. Although the build alternatives would convert land surrounding the interchange to a non-transportation use, the proposed

interchange changes are compatible with anticipated future uses and would be consistent with current zoning. See Section 2.1.1.2, *Consistency with State, Regional, and Local Plans*, below for the analysis of the project's consistency with applicable planning documents.

No-Build Alternative

The No-Build Alternative would not result in direct changes to existing land uses. However, the No-Build Alternative would not meet the objectives of the county and city general plans and regional transportation plan to provide adequate circulation to the area and accommodate development planned for the surrounding area. Increases in traffic associated with anticipated future growth would contribute to further deterioration of roadway and circulation conditions (decreased level of service).

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures would be necessary for this resource.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

The following local and regional transportation and land use plans are applicable to the State Route 99/Cartmill Avenue Interchange Improvements Project. Applicable goals from each plan are summarized below.

2011 Tulare County Association of Governments Regional Transportation Plan

The project is included in the Action Element of the *2011 Tulare County Association of Governments Regional Transportation Plan*. The *2011 Tulare County Association of Governments Regional Transportation Plan* states that an efficient, integrated multi-modal transportation system for the movement of people and goods that enhances the physical, economic, and social environment needs to be provided; goods movement within the region needs to be improved to increase economic vitality, meet the growing needs of freight and passenger services, and improve traffic safety, air quality, and overall mobility; and an efficient, maintained, and safe circulation network that maximizes value, longevity and fiscal responsibility that also minimizes environmental impacts and meets public expectations needs to be developed.

Tulare County General Plan Policy Summary (2001)

The *Tulare County General Plan Policy Summary (2001)* states that Tulare County will promote an efficient transportation system for the movement of people and goods that does the following:

- Enhances the physical, economic and social environment.
- Provides for the establishment and maintenance of an integrated regional transportation system, which enhances the local economic base, is responsive to the social needs of the citizenry, and protects the quality of the Tulare County environment and its resources.
- Complies with the specifications of the Rural Valley Lands Plan.

City of Tulare General Plan (1992)

The *City of Tulare General Plan (1992)* states that the City of Tulare will maintain an efficient and safe roadway system through Tulare and provide a street system that is compatible with existing and proposed land uses.

Environmental Consequences

2011 Tulare County Association of Governments Regional Transportation Plan

Both build alternatives are consistent with the *2011 Tulare County Association of Governments Regional Transportation Plan*. The proposed project is included in the list of projects scheduled for funding for Phase I of Measure R and is therefore consistent with all applicable goals and policies. Both build alternatives would improve transit capabilities for the surrounding vicinity by providing additional capacity for traffic and circulation from the interstate and highway system and enhance the connectivity between the regional transit systems, thereby improving movement of goods and people.

The No-Build Alternative would not be consistent with the *2011 Tulare County Association of Governments Regional Transportation Plan* because it would not provide improvements that would meet the projected road capacity demand anticipated from planned development in the area.

Tulare County General Plan Policy Summary (2001)

Both build alternatives would provide additional capacity, improve east-west circulation, and improve local access to and from State Route 99. They would also improve transit capabilities, enhance safety, reduce congestion, and accommodate

planned future growth. In addition, the proposed project is located within the City of Tulare's Urban Development Boundary. The proposed project is consistent with all applicable goals, policies, and objectives of the *Tulare County General Plan Policy Summary (2001)*.

The No-Build Alternative would not be consistent with the *2011 Tulare County General Plan Policy Summary* because it would not enhance safety or provide improvements in capacity, circulation and local access.

City of Tulare General Plan (1992)

Both build alternatives would provide additional capacity, improve east-west circulation, improve local access to and from State Route 99, improve transit capabilities, enhance safety, reduce congestion and accommodate planned future growth. In addition, the proposed project would improve an existing interchange, so it is compatible with existing and proposed land uses.

Both build alternatives are inconsistent with the *City of Tulare General Plan Circulation Element*, in that a level of service of D will not be maintained at all intersections. However, there will be a significant improvement over the 2033 no-build conditions, in which all project intersections are projected to operate at level of service F and experience overflow delay conditions.

Under Alternative 1, all project intersections in the design-year (2033) are projected to operate at level of service D or better in both the morning and evening peak hours, except for the Cartmill Avenue/Akers Street intersection, which is projected to operate at level of service E in the evening peak hour. Under Alternative 2, all project intersections in 2033 are projected to operate at level of service D or better in both the morning and evening peak hours, except for the Cartmill Avenue/M Street and the Cartmill Avenue/Akers Street intersections. Both intersections are projected to operate at level of service E in the evening peak hour. There would be substantial improvements in intersection operations with implementation of either build alternative.

No-Build Alternative

The No-Build Alternative would not be consistent with the *City of Tulare General Plan Circulation Element* because it would not provide any circulation improvements to meet the projected road capacity demand expected from the planned development in the area. The level of service at the proposed project area intersections would

deteriorate to unacceptable levels and overflow conditions due to future growth and the associated average daily traffic volumes.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures will be necessary for this resource.

2.1.1.3 Parks and Recreation

Affected Environment

There are 12 parks in Tulare. One, Blain Park, is a neighborhood park in the project vicinity next to State Route 99 and south of Cartmill Avenue. This park is operated by the Tulare Parks and Recreation District and includes play equipment, picnic areas, multi-purpose fields, a walking path, and a fitness course for the disabled. Noise from State Route 99 is most prominent in the eastern portion of the park, closest to State Route 99. No soundwall separates the park from the highway.

Environmental Consequences

Access to the park from M Street would be maintained at all times during construction of either build alternative. Most construction would take place more than 500 feet north of the park at the interchange. Some construction would occur within 500 feet of the park and may contribute to the background noise heard at the park. However, construction activity would be limited to the highway shoulder north of the park and would be temporary. No acquisition of any permanent right-of-way or temporary construction easements would be required in the park for either build alternative.

No-Build Alternative

No impacts on parks and recreation would occur under the No-Build Alternative.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures would be necessary for this resource.

2.1.2 Growth

Regulatory Setting

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

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

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

Affected Environment

This information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement: Community Impacts Assessment* prepared in March 2012.

According to Caltrans' *Guidance for Preparers of Growth-related, Indirect Impact Analyses*, four interrelated screening factors are important to consider when determining a project's influence on growth: accessibility, growth pressure, project type, and project location.

Accessibility

The State Route 99 /Cartmill Avenue/M Street interchange was built in the 1950s. Currently, access to southbound State Route 99 is provided by an on-ramp from Cartmill Avenue and an off-ramp to M Street north of Cartmill Avenue. Access to southbound State Route 99 is provided by an off-ramp at Cartmill Avenue and hook on- and off-ramps to Road 100 north of Cartmill Avenue. Access to businesses is mainly from Cartmill Avenue west of State Route 99 and M Street.

Growth Pressure

The extent to which a proposed project influences growth depends largely on the strength of local planning and growth management mechanisms (i.e., adhering to adopted growth boundaries, maintaining existing zoning restrictions and land use designations, implementing farmland protection policies). The City and County of Tulare work cooperatively to plan for growth and development, as reflected by the establishment of urban development boundaries. Adherence to these boundaries reduces pressure for unplanned development outside the boundaries by making adequate quantities of land available for development contiguous with the existing

urban area. In addition, adherence is reinforced by the strict conditions set forth in the Rural Valley Lands Plan, which is designed to discourage the conversion or division of agricultural lands outside these boundaries. The proposed project area is within the City of Tulare's Urban Development Boundary (see Figure 2.1.1-1).

Project Type

Different types of projects present different potentials for inducing growth. This project is the improvement of an existing facility. As described in *Guidance for Preparers of Growth-related, Indirect Impact Analyses*, this type of project presents a mid-level potential for inducing growth and warrants consideration.

Project Location

The proposed project area is at the northern end of the city's boundaries and is within the City of Tulare's Urban Development Boundary. Lands adjacent to the interchange are mostly agricultural parcels, with some residential and commercial land uses (see Table 2.1.1-1 and Figure 2.1.1-1). The project area would be considered an urban/suburban fringe area. Large parcels of developable agricultural lands north of the interchange could be converted to nonagricultural uses should a high level of new growth occur in the area.

Environmental Consequences

To determine the potential for growth-related effects associated with the proposed project, a first-cut screening analysis was performed in accordance with Caltrans' *Guidance for Preparers of Growth-related, Indirect Impact Analyses*. A summary is below.

Accessibility

The project would replace the existing interchange and would not provide access to new areas. Accessibility to existing and planned future areas of development would be improved according to the regional and local plans for the area. Implementation of either Alternative 1 or Alternative 2 would not result in an increase of unplanned growth.

Growth Pressure

Given that the proposed project area is within the City of Tulare's Urban Development Boundary and given the coordinated growth control mechanisms in place, the proposed project is unlikely to substantially encourage unplanned development in the project area or shift or hasten planned growth in the project area. Planned development of vacant and agricultural parcels by the City of Tulare would

likely still take place. Refer to Figure 2.1.1-2 for planned development in the project area.

Project Type

As described above, Caltrans' *Guidance for Preparers of Growth-related, Indirect Impact Analyses* describes this project type as having a mid-level potential for inducing growth. However, projected level of service for 2033 indicates that there would be little excess capacity at intersections with Cartmill Avenue (see Table 2.1.6-1 in Section 2.1.6, *Traffic and Transportation/Pedestrian and Bicycle Facilities*). Also, as described above, the proposed project: (1) would not alter accessibility, (2) is within the Urban Reserve Boundary and includes strong planning and growth management mechanisms to reduce growth pressure, and (3) has been proposed to match the development trends and growth already projected in local agency planning documents to improve the level of service in 2033 to acceptable levels.

Project Location

Transportation projects in urban/suburban fringe areas have a high potential to cause growth-related impacts, particularly if the land is suitable, development regulations are favorable, and the area is in the path of an expanding urban/suburban core. Although the project area would be considered an urban/suburban fringe area, the proposed project is subject to strong city and county planning and growth management mechanisms (including specific mechanisms to ensure preservation of agricultural land). Plus, the project is within the Urban Reserve Boundary.

Conclusion

Proposed land uses and zoning in the project vicinity (see Figures 2.1.1-1 and 2.1.1-2, respectively) reveal continuation of the City of Tulare's trend of shifting away from agricultural production and moving toward more residential, commercial, suburban, and urban development. Recent economic trends, however, have slowed such development, and most large projects currently remain in planning stages. This condition makes it somewhat speculative to determine the nature of future land uses in the project area. Nevertheless, it is reasonably foreseeable that a certain portion of agricultural land in the project vicinity will be converted to residential and commercial uses. However, it is not reasonably foreseeable that the proposed project would significantly influence this growth because, as detailed above, the proposed project is within the urban development boundary and is subject to strong city and county planning and growth management mechanisms to ensure this conversion and

development occurs in accordance with the goals and policies of the City and County of Tulare. Therefore, no further analysis is necessary.

No-Build Alternative

Under the No-Build Alternative, there would be no improvements to the interchange and there would be no impact on growth in the project area.

Avoidance, Minimization, and/or Mitigation Measures

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

2.1.3 Farmlands

Regulatory Setting

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

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

Affected Environment

The following information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement: Community Impact Assessment*, prepared in March 2012.

In 2007, the California Agricultural Statistics Service ranked Tulare County as the second-highest-grossing agricultural county in the United States. The rankings of crops and commodities vary annually in Tulare County based on the amount of acreage dedicated to the commodity at any given time. In 2007, the largest crop (by acreage) in the county was forage, which includes hay, grass silage, and green chop. The other top four crops (by acreage) were corn, oranges, grapes, and walnuts.

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

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

Figures 2.1.3-1 and 2.1.3-2 provide maps of important farmland in the study area relative to the build alternatives.

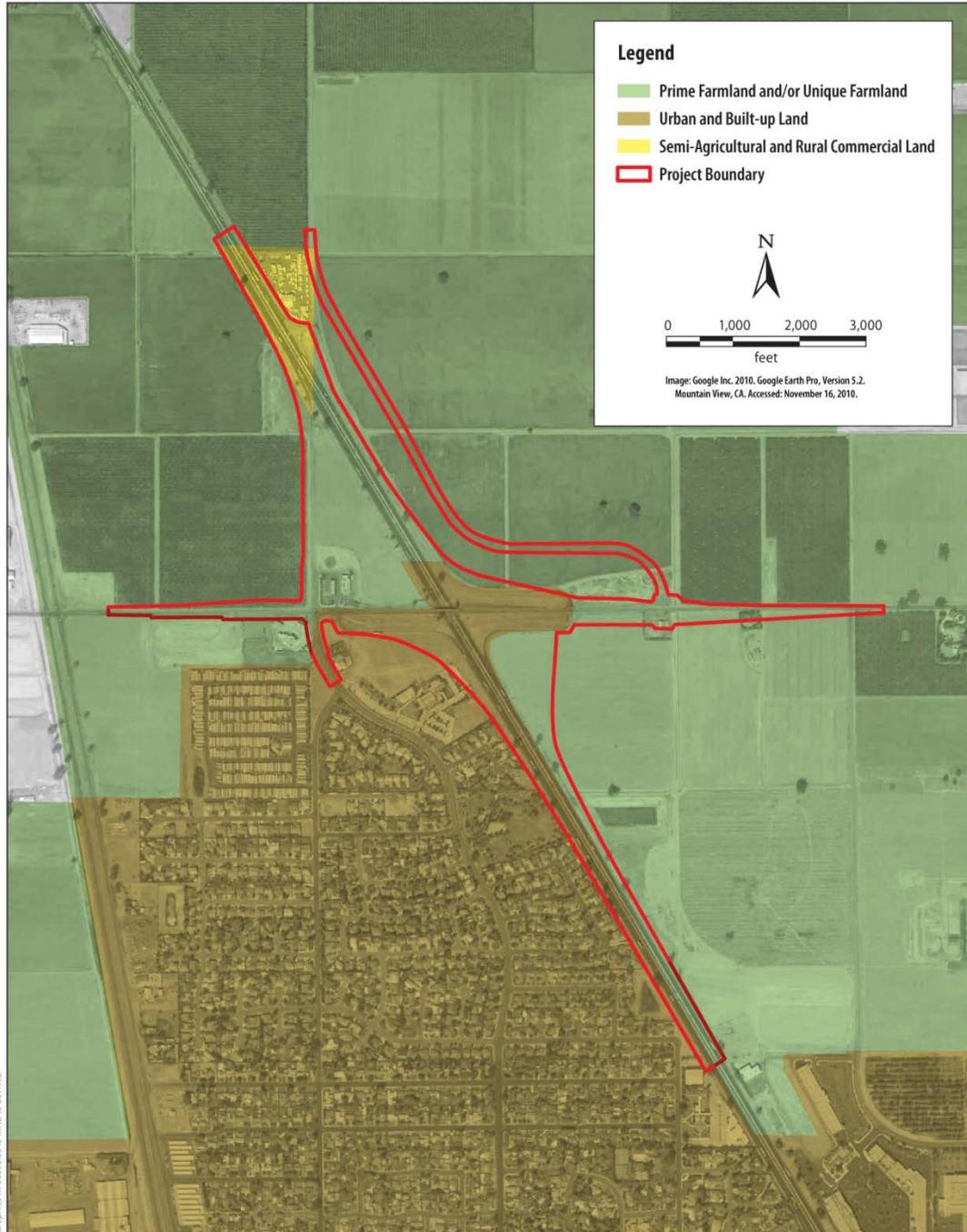


Figure 2.1.3-1 Farmland Types in Study Area – Alternative 1

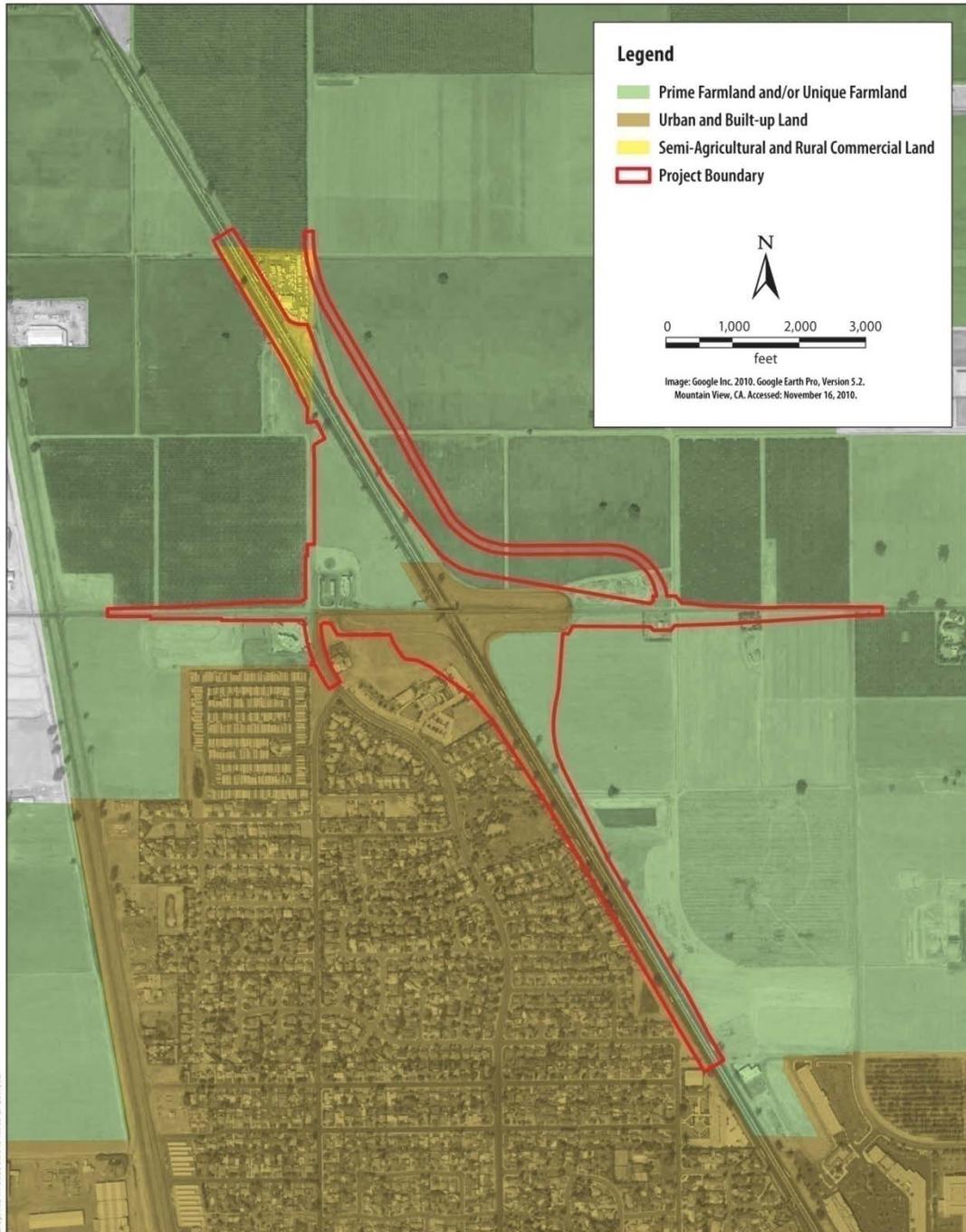


Figure 2.1.3-2 Farmland Types in Study Area – Alternative 2

Table 2.1.3-1 shows the acres of farmland in Tulare County, according to the Farmland Mapping and Monitoring Program prepared by the California Department of Conservation.

Table 2.1.3-1 Tulare County Important Farmland and Agricultural Land, 2000 to 2008

Farmland Category	Total Acres Inventoried by Year				
	2000	2002	2004	2006	2008
Prime Farmland	393,029	387,626	384,388	379,762	375,119
Farmland of Statewide Importance	351,715	347,294	339,579	332,159	327,204
Unique Farmland	11,723	11,449	12,525	12,218	11,920
Farmland of Local Importance	124,137	133,474	137,436	143,826	150,194
Important Farmland Subtotal	880,604	879,843	873,928	867,965	864,437
Grazing Land	434,047	433,618	440,618	440,135	439,851
Agricultural Land Total	1,314,651	1,313,461	1,314,546	1,308,100	1,304,288

Source: SR 99/Cartmill Interchange Improvement Community Impact Assessment, March 2012.

Table 2.1.3-2 summarizes the net acreage change (either negative or positive) from the previous Farmland Mapping and Monitoring Program survey. Negative numbers indicate loss of farmland in that two-year period. Surveys are done every two years.

Table 2.1.3-2 Area Change for 2000 to 2008

Farmland Category	Area Change in Acres				
	1998–2000	2000–2002	2002–2004	2004–2006	2006–2008
Prime Farmland	-3,089	-5,403	-3,232	-4,626	-4,641
Farmland of Statewide Importance	-5,532	-4,421	-6,184	-7,420	-4,954
Unique Farmland	-43	-274	-221	-309	-298
Farmland of Local Importance	7,699	9,337	10,621	6,390	6,368
Important Farmland Subtotal	-965	-761	984	-5,965	-3,525
Grazing Land	-22	-429	68	-485	-284
Agricultural Land Total	-987	-1,190	1,052	-6,450	-3,809

Source: SR 99/Cartmill Interchange Improvement Community Impact Assessment, March 2012.

According to the California Department of Conservation, no lands under Williamson Act contract are within the project site.

Environmental Consequences

A literature review and consultation with the National Resource Conservation Service were done to evaluate the potential effects of the proposed interchange improvements on local farmlands. Documents reviewed included California Department of Conservation Farmland Mapping and Monitoring Program data, aerial photographs, and the current city and county general plans, zoning ordinances, and maps.

The proposed project would permanently remove areas of Prime and/or Unique Farmland from agricultural production due to interchange construction. However, even though the land is designated by the Department of Conservation as important farmland, it does not necessarily mean the land is currently being farmed.

Under Alternative 1, interchange construction would result in total conversion of 81.9 acres of Prime and/or Unique Farmland to nonagricultural use, including direct and indirect conversion, as shown in Table 2.1.3-3 and presented in the Natural Resource Conservation Service AD 1006 form in Appendix B. Alternative 1 would not affect any lands designated as Statewide or Locally Important. Although the project would convert farmland, all land converted is within the City of Tulare’s Urban Development Boundary and is planned for future development (see Figure 2.1.1-1).

Table 2.1.3-3 Proposed Farmland Conversion

Project Alternative	Land Converted Directly (acres)	Land Converted Indirectly (acres)	Total Farmland Converted (acres)	Percent of Farmland in County	Farmland Conversion Impact Rating
Alternative 1	63.5	18.4	81.9	0.00009	158
Alternative 2	56.0	17.3	73.3	0.00008	158

Source: SR 99/Cartmill Interchange Improvement Community Impact Assessment, March 2012.

Under Alternative 2, interchange construction would result in the conversion of 73.3 acres of Prime and/or Unique Farmland to nonagricultural use, as shown in Table 2.1.3-3 and presented in the Natural Resource Conservation Service AD 1006 form in Appendix B. Alternative 2 would not affect any lands designated as Statewide or Locally Important. As described for Alternative 1, although the project would convert farmland to a transportation use, all land converted is within the City of Tulare’s Urban Development Boundary and is planned for future development (see Figure 2.1.1-1).

The Natural Resources Conversion Service Farmland Conversion Impact Rating was completed for the project in December 2010 (see Appendix B). This rating determines the relative value of farmland to be converted by using a formula that weights farmland classifications, soil characteristics, acreage, creation of non-farmable land, availability of farm services, and other factors. If the rating is more than 160 points, Caltrans may consider measures that would minimize or mitigate farmland impacts. Both Alternative 1 and Alternative 2 had a Farmland Conversion Impact Rating of 68. These ratings are below the 160 point threshold.

In addition, as shown in Table 2.1.3-3, the reduction of farmland expected to result from implementation of either build alternative is negligible in the context of available farmland in Tulare County. The 81.9 acres to be converted under Alternative 1 represents 0.00009 percent of the total farmland in the county. The 73.3 acres to be converted under Alternative 2 represents 0.00008 percent of the total farmland in the county. Due to the large amount of land available for (and currently supporting) agricultural purposes in the immediate project vicinity and in the surrounding counties, it is not expected that the small amount of acreage that would be permanently removed from agricultural production under the build alternatives would affect total agricultural production in the area.

Also, implementation of either build alternative would not affect any parcels under Williamson Act contract, and the project would not include uses incompatible with adjacent farmland under either build alternative, as the project would replace an existing use, a roadway, which has proven to be compatible with agricultural uses in the area.

No-Build Alternative

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

Avoidance, Minimization and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures would be required.

2.1.4 Community Impacts

2.1.4.1 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act of 1969 as amended established that the federal government use all practicable means to ensure that all Americans have safe,

healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S. Code 4331[b][2]). The Federal Highway Administration in its implementation of the National Environmental Policy Act (23 U.S. Code 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

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

Affected Environment

This information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement – Community Impact Assessment* completed in March 2012. Although the new 2010 census counts were done in December 2010, at the time of writing of this report only limited census data were available. To have comparable data for impact analysis, all data must be from the same year. Therefore, data from the 2000 census is used throughout this discussion, based on these census tracks:

- Census Tract 21.00 encompasses the portion of the project study area north of Cartmill Avenue and west of State Route 99.
- Census Tract 23.03 encompasses the portion of the project study area south of Cartmill Avenue and west of State Route 99.
- Census Tract 24.00 encompasses the project study area east of State Route 99 on both the north and south sides of Cartmill Avenue.

According to California Department of Finance estimates, the total population of Tulare County as of January 1, 2010 was 447,814. The population in unincorporated areas of the county was 146,356, which represented about 33 percent of the total population. California Department of Finance data from 2010 also indicates that the total county population has grown about 22 percent since 2000, with most of that growth happening within the eight incorporated cities (Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake). Collectively, during the same

10-year period, the population of the eight incorporated cities grew about 33 percent, while the population of the unincorporated areas grew by about 4 percent. Currently, about 67 percent of Tulare County's total population lives in cities.

According to California Department of Finance estimates, as of January 1, 2010, the City of Tulare's population was 59,535. The Tulare County General plan projects the city's population to increase to 79,180 by 2025. This would amount to an increase in population of about 33 percent.

Within the city, about 56 percent of the population identifies themselves as white. Those identifying themselves as other races or as two or more races are the next two largest populations in the city—29.1 percent and 6.0 percent, respectively. In addition, about 46 percent of the city's population identifies themselves as being of Hispanic ethnic background.

Statistics from the census show that in 2000, 1,824 families—783 families with a female head of household—and 8,954 individuals within the city lived below the poverty level. This translates to 20.4 percent of the city's total population living below the poverty level in 2000. The average median household income was \$33,637, which is about 41 percent of the state median household income of \$47,493. The median family income was \$36,935, which is approximately 44 percent of the state median family income of \$53,025. The City's per capita income of \$13,655 was about 66 percent of the state per capita income of \$22,711.

Neighborhoods/Communities

The project area sits at the northern boundary of the City of Tulare. Areas north and east of the project area are dominated by agricultural land.

Residential uses are southwest of the project area. In this portion of the project area sits a 140-unit mobile home park for seniors along North Oaks Street. A small gated community that includes about 30 homes is south of Cartmill Avenue between North Oaks Street and M Street. The mobile home park and gated community are contained within their own boundaries (see Figure 2.1.1-1). The mobile home park includes a community gathering building, and the residences of the gated community surround a communal park and pool area. A residential subdivision is south of these two developments. Blain Park, a mid-sized neighborhood park, is south of Cartmill Avenue along M Street.

No schools exist in this immediate residential area or within 0.5 mile of the proposed project. Several schools are west of North J Street. The nearest school is Los Tules Middle School, about a mile southwest of the Cartmill Avenue/State Route 99 interchange. Mission Valley School is more than 1 mile east of the interchange and east of Hillman Street.

Housing

Between 1990 and 2000, there was a 24 percent increase in the number of households in the City of Tulare, from 10,859 to 13,514. Households increased more than 35 percent between 2000 and 2008. The ratio of owner-to-renter households by tenure increased between 1990 and 2000. There were 6,186 owners to 4,673 renters in 1990 and 8,198 owners to 5,316 renters in 2000.

As of the 2000 Census, the median rent in Tulare in 2000 was \$541 per month, while the average home value was \$94,700. These numbers are similar to the county figures, with an average rent of \$516 per month and a home value of \$97,800. The median value of homes sold in the city in recent years ranged from about \$190,000 in 2005 to \$225,000 in 2006 and 2007 to \$180,000 in 2008.

The number of single-family detached units has increased by 75 percent from 1990 to 2008. The stock of multi-family housing increased during the same period by 36 percent. The number of total units increased by almost 26 percent from 11,316 units in 1990 to 14,227 units in 2000 to 18,219 units in 2008. In terms of percent of total housing stock, between 2000 and 2008, the percentage of single-family homes increased while the percentage of multi-family homes and mobile homes stayed relatively constant.

Environmental Consequences

Regional Population Characteristics

Implementation of either build alternative would have no direct impact on population levels or demographic characteristics in the project vicinity. As discussed in Chapter 3, the proposed project would accommodate future growth, but would not cause new growth or affect population.

No-Build Alternative

No impacts on regional population characteristics would occur under the No-Build Alternative.

Neighborhoods/Communities

The potential physical division of a community relates to the concept of community cohesion: the degree to which the residents have a sense of belonging to their neighborhood; a level of commitment of the residents of the community; or a strong attachment to neighbors, groups, or institutions over time.

Both build alternatives would improve transit capabilities for the surrounding vicinity by providing additional capacity for traffic and circulation from the interstate and highway system. The project would also enhance connectivity between the regional transit systems, thereby improving cohesion among residents and commercial and retail users. The improvements that are proposed are to existing roadways and interchanges, so no neighborhoods would be divided or isolated. No new physical barriers would be installed within the community.

Under the No-Build Alternative, no impacts on neighborhoods or communities would occur.

Housing

The proposed project would meet the demands of planned future growth, but it would not take away housing or reduce housing options.

Under the No-Build Alternative, no impacts on housing would occur under the No-Build Alternative.

2.1.4.2 Relocation and Property Acquisitions

Regulatory Setting

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

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S.

Code 2000d, et seq.). See Appendix C for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

This information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement – Community Impact Assessment*, prepared in March 2012.

An ARCO AM/PM is north of Cartmill Avenue and west of State Route 99. South of Cartmill Avenue and west of State Route 99 are the former Chevron/Stanley's Food Mart, City of Tulare Fire Department Station 63, and Bethel Assembly of God/In Living Christ Church. Residential and commercial uses exist south of Cartmill Avenue and west of State Route 99, including a senior mobile home park and a gated community. A residence on parcel APN 160-010-020 sits on the south side of Cartmill Avenue, west of Retherford Street.

Environmental Consequences

For purposes of this analysis, property acquisitions have been identified wherever the proposed right-of-way, as shown on the preliminary engineering drawings, encompasses all or a portion of an adjacent property. The proposed project would require the acquisition of vacant and agricultural land as well as commercial property. The proposed interchange improvements would also require a partial acquisition of a residential parcel. While portions of the parcels in the northeast quadrant of the interchange would be acquired, the City of Tulare would not acquire the land between Akers Street (Road 100) and State Route 99. All property acquisitions would be done in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S. Code 4601–4655), and the California Relocation Act.

Alternative 1

Alternative 1 would acquire 38.33 acres of additional right-of-way from 24 parcels. Table 2.1.4-1 and Figure 2.1.4-1 show each acquisition under Alternative 1.

Table 2.1.4-1 Proposed Right-of-Way Acquisitions for Alternative 1

Location (Figure 2.1.4-1)	APN	Total Parcel Area (acre)	Parcel Acquisition Area (acres)	Percent Acquisition of Total Area
1	166-002-022	1.01	0.10	9.88%
2	166-002-021	0.11	0.04	35.52%
3	166-010-060	6.84	0.48	7.02%
4	166-010-059	5.46	0.43	7.79%
5	166-010-061	24.13	2.18	9.04%
6	166-010-062	5.42	5.42	100.00%
7	166-010-005	0.77	0.44	57.08%
8	TID Canal	1.48	0.12	8.24%
9	166-010-020	37.32	1.55	4.14%
10	166-010-052	37.95	0.04	0.10%
11	149-230-004	19.88	0.32	1.61%
12	149-230-011	33.31	2.96	8.89%
13	149-230-012	20.08	2.93	14.58%
14	149-230-009	35.76	1.97	5.50%
15	149-080-008	26.58	0.20	0.74%
16	149-080-010	29.81	0.83	2.78%
17	149-080-011	56.58	2.34	4.13%
18	149-230-008	12.01	12.01	100.00%
19	149-230-007	1.20	1.20	100.00%
20	164-040-015	8.33	0.10	1.17%
21	164-040-014	1.39	0.004 ^a	0.29%
22	166-010-056	1.65	0.07	4.47%
23	166-010-066	4.75	0.10	2.06%
24	166-010-067	3.38	2.50	73.93%
Total		375.23	38.33	100.00%

Source: Right of Way Data Sheet, 2011.

Note: Shaded rows indicate parcels fully acquired.

^a Taken to three decimal points for accuracy.

In addition to acquiring vacant and agricultural land, Alternative 1 would result in the following acquisitions:

- ARCO AM/PM (149-230-007)—Full acquisition of this development, which sits at the northeast corner of M Street and Cartmill Avenue, would be required.
- The former Chevron/Stanley’s Food Mart (164-040-014)—The proposed project would acquire 0.004 acre (about 175 square feet) of the gas station parcel at the southwest corner of M Street and Cartmill Avenue to construct sidewalk and storm drain improvements along the eastbound side of Cartmill Avenue. Potential

displacement of the gas station sign at the edge of the northeast corner of the parcel would occur. There is sufficient room to relocate the sign to another area on the same parcel.

- City of Tulare Fire Station 63 (166-010056)—The City Fire Department currently owns the parcel at the southeast corner of the intersection at M Street and Cartmill Avenue. The project would acquire 0.07 acre for road edge and sidewalk improvements that would occur along M Street and Cartmill Avenue. No portion of the fire department building, in the southwest corner of the parcel, would be acquired or displaced. See Section 2.1.5, *Utilities/Emergency Services*, for further information regarding the fire station.
- Bethel Assembly of God/In Living Christ Church (166-010-066, 166-010-067)—The church is at 2516 North M Street. The proposed southbound on-ramp for State Route 99 from eastbound Cartmill Avenue would require about 8.13 acres of land owned by the church. This would displace 32 parking spaces.
- Private residence (166-010-020)—This residence is at 701 East Cartmill Avenue. Proposed improvement of the intersection of Cartmill Avenue and the new Akers Street (Road 100) would require widening Cartmill Avenue at this location to transition to Cartmill Avenue to the east. To accommodate this widening, it would be necessary to acquire 1.55 acres of the property along the street, which may result in the displacement of the residence based on its proximity to Cartmill Avenue.

Alternative 2

Alternative 2 would require 30.40 acres of additional right-of-way from 28 parcels. Table 2.1.4-2 and Figure 2.1.4-2 show each acquisition under Alternative 2.

Table 2.1.4-2 Proposed Right-of-Way Acquisitions for Alternative 2

Location (Figure 2.1.4-2)	APN	Total Parcel Area (acre)	Parcel Acquisition Area (acres)	Percent Acquisition of Total Area
1	166-002-022	1.01	0.10	9.88%
2	166-002-021	0.11	0.04	35.52%
3	166-010-060	6.84	0.48	7.02%
4	166-010-059	5.46	0.43	7.79%
5	166-010-061	24.13	2.92	12.11%
6	166-010-062	5.42	5.42	100.00%
7	166-010-005	0.77	0.44	57.08%
8	TID Canal	1.48	0.12	8.24%
9	166-010-020	37.32	1.55	4.14%
10	166-010-052	37.95	0.04	0.10%
11	149-230-004	19.88	0.32	1.61%
12	149-230-011	33.31	3.58	10.74%
13	149-230-012	20.08	3.21	15.97%
14	149-230-009	35.76	1.97	5.50%
15	149-080-009	3.27	0.10	3.17%
16	149-009-006	65.45	0.02	0.04%
17	149-009-008	8.79	0.01	0.10%
18	149-080-008	26.58	0.12	0.46%
19	149-080-010	29.81	0.03	0.08%
20	149-230-008	12.01	4.80	39.93%
21	149-230-007	1.20	0.06	5.08%
22	149-080-011	56.58	1.24	2.19%
23	164-040-015	8.33	0.10	1.17%
24	164-040-014	1.39	0.004 ^a	0.29%
25	166-010-056	1.65	0.07	4.47%
26	166-010-065	6.15	0.05	0.85%
27	166-010-066	4.75	0.01	0.23%
28	166-010-067	3.38	3.17	93.68%
Total		458.90	30.40	100.00%

Source: Right of Way Data Sheet, 2011.

Note: Shaded rows indicate parcels fully acquired.

^a Taken to three decimal points for accuracy.

In addition to displacing vacant and agricultural land, Alternative 2 would result in the following acquisitions:

- ARCO AM/PM (149-230-007)—The project would acquire about 0.06 acre along Cartmill Avenue at this development at the northeast corner of M Street and Cartmill Avenue. Up to six parking spaces could be removed from the ARCO AM/PM.
- The former Chevron/Stanley's Food Mart (164-040-014)—The project would acquire 0.004 acre (about 175 square feet) of the gas station parcel at the southwest corner of M Street and Cartmill Avenue to construct sidewalk and storm drain improvements along the eastbound side of Cartmill Avenue. Potential displacement of the gas station sign at the edge of the northeast corner of the parcel would occur. There is sufficient room to relocate the sign to another area on the same parcel.
- City of Tulare Fire Station 63 (166-010-056)—The would acquire 0.07 acre for road edge and sidewalk improvements that would occur along M Street and Cartmill Avenue. No portion of the fire department building in the southwest corner of the parcel would be acquired or displaced. See Section 2.1.5, *Utilities/Emergency Services*, for further information regarding the fire station.
- Bethel Assembly of God/In Living Christ Church (166-010-065, 166-010-066, 166-010-067)—The church is at 2516 North M Street. The proposed southbound on-ramp for State Route 99 from eastbound Cartmill Avenue would require about 3.23 acres of land owned by the church. This would displace 48 parking spaces.
- Private residence (166-010-020)—This residence is at 701 East Cartmill Avenue. The proposed improvement of the intersection of Cartmill Avenue and the new Akers Street (Road 100) would require widening of Cartmill Avenue at this location to transition to Cartmill Avenue to the east. To accommodate this widening, it would be necessary to acquire 1.55 acres of the property along the street, which may result in the displacement of the residence based on its proximity to Cartmill Avenue.

No-Build Alternative

Under the No-Build Alternative, no acquisitions or displacements would take place. No impacts would occur.

Avoidance, Minimization, and/or Mitigation Measures

All property acquisitions would be done in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the California Relocation Act. In accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 United States Code 4601–4655), relocation assistance is required to be provided to any person, business, farm, or nonprofit operation displaced because of the acquisition of real property by a public entity for public use. It provides for fair and equitable treatment of persons whose property will be acquired. The programs and assistance provided under the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 would be available to all eligible recipients without discrimination. See Appendices C and D for a copy of Caltrans' Title VI Policy Statement and information on the Caltrans Relocation Assistance Program.

2.1.5 Utilities/Emergency Services

Affected Environment

The information presented in this section is from the *State Route 99/Cartmill Avenue Interchange Improvement: Community Impact Assessment*, prepared in March 2012.

In the project area, power generation and distribution are provided by privately owned utility companies. Southern California Edison Company provides electric service to most of the cities within the county, including Tulare. The Southern California Gas Company provides gas service to residents of the City of Tulare. Water and sewer services in the project area are provided by the City of Tulare. Cable services are provided by Comcast Cable, fiber optic services are provided by Time Warner, and telephone services are provided by American Telephone and Telegraph (AT&T).

City of Tulare Fire Department Station 63

The City of Tulare Fire Department Station 63 at 2900 North M Street in Tulare sits at the southeast corner of the M Street and Cartmill Avenue intersection (APN 166-010-056). The parcel is 1.65 acres. Station 63 opened in 2004 and serves the city's northeast area. Station 63 is staffed with one captain, one engineer, and one firefighter/paramedic. Station 63 also houses the on-duty battalion chief, responsible for overseeing the safety of citizens after hours and on weekends.

City of Tulare Police Department

The City of Tulare Police Department at 260 South M Street in Tulare is at the northwest corner of the South M Street and East Inyo Avenue intersection. The police services provided there include police administration, led by the police chief, patrol, investigation, traffic safety, and child safety/network.

California Highway Patrol

The project is located within the California Highway Patrol's Central Division. The California Highway Patrol does not have an area office in the City of Tulare. The closest area office is in Visalia at 2025 West Noble Avenue.

Ambulance

Life Star Ambulance at 234 North Main Street in Tulare is near the East San Joaquin Avenue and North Main Street intersection.

Environmental Consequences

Emergency Service Response Times

Construction activities associated with either build alternative would result in temporary, localized, site-specific disruptions to the local community facilities and services in the project area. These impacts would be mostly related to construction-related traffic changes from trucks and equipment in the area; partial and complete street and lane closures, with some requiring detours; increased noise; lights and glare; and changes in air emissions. For most community facilities, the project's construction activities would not result in nuisance effects substantially different from typical construction activities. Also, the project would be built in a manner that would minimize the potential for disruption to community facilities.

Closure of the Cartmill Avenue overcrossing at State Route 99 during construction would cause a temporary increase in fire department emergency response times of up to 1½ minutes. See Section 2.1.6, *Traffic and Transportation/Pedestrian and Bicycle Facilities*, for additional information on detours during construction.

The city police department does not anticipate a reduction in service or response times resulting from construction of the proposed project. Temporarily delayed response times due to construction activities and detours may affect California Highway Patrol, but this effect would be temporary and is unlikely to substantially affect response times.

Utilities

Relocation of utilities and potholing would be necessary under both build alternatives. Under both alternatives, it will be necessary to relocate one power pole near Cartmill Avenue, two Southern California Edison power poles in the southwest corner of Cartmill Avenue and Gem Street, and eight Southern California Edison power poles on the south side of Cartmill Avenue.

Also, under Alternative 1, eight Southern California Edison power poles on the west side of M Street north of Cartmill Avenue would need to be relocated. Under Alternative 2, three of these poles would need to be relocated.

Potholing would be required to find an existing Time Warner fiber optic line on the north side of Cartmill Avenue east and west of State Route 99, an electric conduit line on the south side of Cartmill Avenue, and city sewer and water lines in M Street south of Cartmill Avenue.

In addition, the water and sewer manhole covers on M Street would be adjusted to new street elevations. Any intermittent disruptions to water and sewer services would last less than one week, and any intermittent disruptions to electrical services should last less than a day. Coordination with utility providers would ensure that interruptions were minimized and users were notified.

Under the No-Build Alternative, there would be no impacts to public facilities or services.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of traffic control measures discussed under Avoidance, Minimization, and/or Mitigation Measures in Section 2.1.6, *Traffic and Transportation*, would minimize traffic disruptions that could affect response times during project construction.

2.1.6 Traffic and Transportation/Pedestrian and Bicycle Facilities *Regulatory Setting*

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a

potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Affected Environment

The information presented in this section is based on the *State Route 99/Cartmill Avenue Project Study Report Traffic Operations Analysis (existing and no-build Level of Service)*, prepared in April 2008, and the *Supplemental Traffic Forecasts and Traffic Operations for the State Route 99/Cartmill Avenue Interchange Modification Memorandum*, prepared in April 2011, and the Draft Project Report completed in March 2012.

Study Area and Key Roadways

The study area is shown in Figure 2.1.6-1. The following key roadways lie in the study area:

- **State Route 99** is a major north-south freeway that provides regional connection between Central Valley cities and Sacramento to the north and the Los Angeles urban basin to the south. Within the City of Tulare, State Route 99 also acts as a commuter route between Tulare County and neighboring communities. In the study area, State Route 99 is a four-lane divided freeway with two mixed-flow lanes in each direction of travel. Access to State Route 99 is provided at the interchange with M Street/Cartmill Avenue and the northbound hook ramps with Road 100.
- **Cartmill Avenue** (also designated as Avenue 248) is generally a two-lane east-west roadway that extends from County Road 28 west of State Route 99 to County Road 164 east of State Route 99. Within the study area, Cartmill Avenue passes through the intersection at M Street and extends eastward over State Route 99 to Drive 103. Freeway access between Cartmill Avenue and State Route 99 is provided by a southbound on-ramp and a northbound off-ramp.

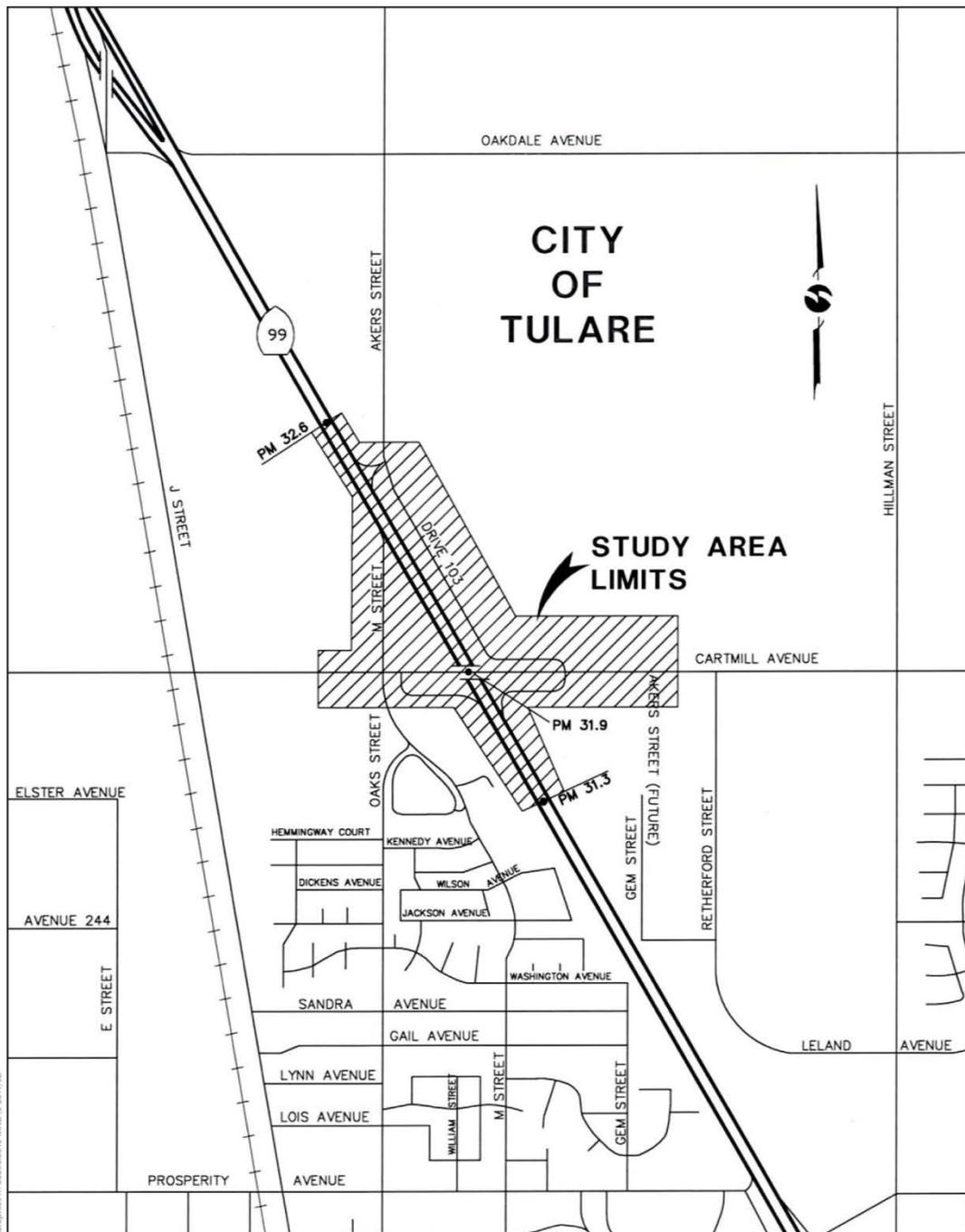


Figure 2.1.6-1 Traffic Study Area

- **M Street** is a two-lane north-south roadway that starts south of the study area at Owens Avenue within the City of Tulare, passes through the central business district, and ends at the junction with the State Route 99 southbound off-ramp just north of Cartmill Avenue.
- **Road 100/Drive 103** is a north-south frontage road that runs east of and parallel to State Route 99. Drive 103 starts at Cartmill Avenue opposite the State Route 99 northbound off-ramp, extends northwest, and ends at the Road 100/State Route 99 northbound ramps intersection. Road 100 continues north as a two-lane roadway into the City of Visalia, where it is also designated as Akers Street.

Existing Level of Service

The City of Tulare has designated level of service D as the acceptable level of service standard on city facilities and allows for level of service E at locations within 0.25 mile of a freeway interchange or adjacent to regional commercial uses. Although Caltrans has not designated a level of service standard, Caltrans' December 2002 *Guide for the Preparation of Traffic Impact Studies* indicates that Caltrans seeks to maintain a target level of service at the transition between level of service C and level of service D on state highway facilities. Caltrans acknowledges that maintaining this level of service may not always be feasible. Figures 1-3 and 1-4 in Chapter 1 show criteria for levels of service for intersections.

Table 2.1.6-1 shows existing (2007) and forecasted design-year (2033) levels of service experienced by vehicles at the following key intersections in the study area:

- Road 100/State Route 99 northbound ramps
- Cartmill Avenue/M Street/State Route 99 southbound off-ramp
- Cartmill Avenue/State Route 99 southbound on-ramp
- Cartmill Avenue/Drive 103/State Route 99 northbound off-ramp
- Cartmill Avenue/Akers Street (Road 100) (future)

The shaded cells in the table indicate that the level of service is unacceptable according to City of Tulare standards.

Table 2.1.6-1 2007 and 2033 Intersection Analysis

Intersection	2007 Analysis (level of service)		2033 Analysis (level of service)					
			No-Build Alternative		Alternative 1		Alternative 2	
	Morning Peak	Evening Peak	Morning Peak	Evening Peak	Morning Peak	Evening Peak	Morning Peak	Evening Peak
Road 100/State Route 99 Northbound Ramps ^a	B	B	F	F	-	-	-	-
Cartmill Avenue/ M Street/State Route 99 Southbound Off- Ramp ^b	C	F	F	F	C	D	C	D
Cartmill Avenue/ State Route 99 Southbound On-Ramp ^c	A	A	F	F	-	-	B	C
Cartmill Avenue/ Drive 103 ^d /State Route 99 Northbound Off- Ramp	E	E	F	F	A	C	B	C
Cartmill Avenue/ Akers Street (Road 100) (future) ^e	-	-	-	-	C	E	C	E

Source: State Route 99/Cartmill Avenue Project Study Report Traffic Operations Analysis, 2008 and Supplemental Traffic Forecasts and Traffic Operations for the State Route 99/Cartmill Avenue Interchange Modification Memorandum, 2011.

^a The Road 100/State Route 99 northbound ramps intersection is eliminated under both build alternatives.

^b State Route 99 southbound off-ramp is relocated to Cartmill Avenue under Alternative 2.

^c This intersection does not apply under Alternative 1.

^d The Drive 103 intersection approach is eliminated under both build alternatives.

^e A future intersection would be constructed under both build alternatives.

Tables 2.1.6-2 and 2.1.6-3, later, summarize the level of service and delay for mainline and ramp junctions in the study area.

Bicycle and Pedestrian Facilities

Cartmill Avenue (Avenue 248) is designated as a bicycle route in the 2010 Tulare County Regional Bicycle Transportation Plan in both the City and County of Tulare. Limited bicycle and pedestrian facilities are available along Cartmill Avenue within the project study area.

Transit Facilities

Transit service is provided by Tulare InterModal Express and Tulare County Area Transit.

Tulare InterModal Express is operated by the City of Tulare. It offers seven fixed routes and Tulare InterModal Express Dial-A-Ride. Route 11X, in the study area, provides service six days a week (not Sunday) between the Tulare Transit Center (at K Street and San Joaquin Avenue) and the Visalia Transit Center. This route runs along M Street north to the Cartmill Avenue interchange and then travels on State Route 99 and State Route 198 to the Visalia Transit Center.

Tulare County Area Transit is operated by the County of Tulare and offers four Inter City and five Local Circulator fixed routes. Two of the fixed routes, Route 20 (South County Route) and Route 40 (Southeast County Route), provide service within the City of Tulare six days a week (not Sunday). Neither of the two routes travels on State Route 99 through the project area or use Cartmill Avenue and the interchange ramps as part of their routes.

Environmental Consequences

Intersection Level of Service

Alternative 1

As shown in Table 2.1.6-1, the Road 100/State Route 99 northbound ramps, Cartmill Avenue/M Street/State Route 99 southbound off-ramp, Cartmill Avenue/State Route 99 southbound on-ramp, and Cartmill Avenue/Drive 103/State Route 99 northbound off-ramp intersections would operate at unacceptable levels during both the morning and evening peak hours in 2033 without implementation of the project. The project would eliminate the Road 100/State Route 99 northbound ramp intersection and would result in improved operations at the following locations:

- The Cartmill Avenue/M Street/State Route 99 southbound off-ramp would improve from level of service F to C (morning peak hour) and level of service F to D (evening peak hour).
- The Cartmill Avenue/State Route 99 northbound off-ramp would improve from level of service F to A (morning) and level of service F to C (evening).

Table 2.1.6-1 also shows that the future Cartmill Avenue/Akers Street (Road 100) intersection would operate at level of service C during the morning peak period and level of service E during the evening peak period. As this intersection would be located in the City of Tulare, the projected level of service would be within acceptable thresholds.

Alternative 2

As shown in Table 2.1.6-1, the Road 100/State Route 99 northbound ramps, Cartmill Avenue/M Street/State Route 99 southbound off-ramp, Cartmill Avenue/State Route 99 southbound on-ramp, and Cartmill Avenue/Drive 103/State Route 99 northbound off-ramp intersections would operate at unacceptable levels during both the morning and evening peak hours in 2033 without implementation of the project. The project would eliminate the Road 100/State Route 99 northbound ramp intersection and would result in improved operations at the following locations:

- The Cartmill Avenue/M Street/State Route 99 southbound off-ramp would improve from level of service F to C (morning peak hour) and level of service F to D (evening peak hour).
- The Cartmill Avenue/State Route 99 southbound on-ramp would improve from level of service F to B (morning) and level of service F to C (evening).
- The Cartmill Avenue/State Route 99 northbound off-ramp would improve from level of service F to B (morning) and level of service F to C (evening).

Table 2.1.6-1 also shows that the future Cartmill Avenue/Akers Street (Road 100) intersection would operate at level of service C during the morning peak period and level of service E during the evening peak period. As this intersection would be located in the City of Tulare, the projected level of service would be within acceptable thresholds.

No-Build Alternative

Under the No-Build Alternative, no improvements would be made to the interchange or surrounding access roads. By 2033, all four existing intersections in the study area would experience level of service F during both the morning and evening peak hour periods (see Table 2.1.6-1).

Mainline and Ramp Level of Service

As shown in Table 2.1.6-2, implementation of neither build alternative would affect traffic operations on mainline State Route 99 segments within the study area in 2033. All northbound and southbound mainline segments would continue to generally operate at level of service D or better during the morning and evening peak periods, with level of service E projected on southbound State Route 99 south of Cartmill Avenue during the evening peak period.

Table 2.1.6-2 2007 and 2033 Mainline Analysis

Mainline Segment	2007 Analysis ^a (level of service)		2033 Analysis ^b (level of service)					
	Morning Peak	Evening Peak	No-Build Alternative		Alternative 1		Alternative 2	
			Morning Peak	Evening Peak	Morning Peak	Evening Peak	Morning Peak	Evening Peak
State Route 99 Northbound – South of Cartmill Avenue	B	C	C	E	C	D	C	D
State Route 99 Northbound – North of Cartmill Avenue	C	D	C	D	C	C	C	C
State Route 99 Southbound – North of Cartmill Avenue	B	D	D	D	C	D	C	D
State Route 99 Southbound – South of Cartmill Avenue	B	D	D	E	C	E	C	E

Source: State Route 99/Cartmill Avenue Project Study Report Traffic Operations Analysis, 2008 and Supplemental Traffic Forecasts and Traffic Operations for the State Route 99/Cartmill Avenue Interchange Modification Memorandum, 2011.

^a 2007 analysis based on four-lane State Route 99 mainline.

^b 2033 analysis based on six-lane State Route 99 mainline.

As shown in Table 2.1.6-3, the State Route 99 northbound off- and on-ramps with Road 100 would be eliminated with implementation of either build alternative. Implementation of either build alternative would improve traffic operations at the State Route 99 northbound off-ramp diverge to Cartmill Avenue from level of service C to B (morning) and from level of service D to C (evening). Implementation of either build alternative would also improve traffic operations at the State Route 99 southbound on-ramp merge from Cartmill Avenue from level of service D to C (morning) and from level of service E to D (evening).

No-Build Alternative

Under the No-Build Alternative, no improvements would be made to the interchange or surrounding access roads. The 2033 peak hour ramp junction operations at the State Route 99 northbound Cartmill Avenue off-ramp and the southbound direct on from Cartmill Avenue would not be improved (see Table 2.1.6-3).

Table 2.1.6-3 2007 and 2033 Ramp Junction Analysis

Ramp Junction	2007 Analysis ^a (level of service)		2033 Analysis ^b (level of service)					
			No-Build Alternative		Alternative 1		Alternative 2	
	Morning Peak	Evening Peak	Morning Peak	Evening Peak	Morning Peak	Evening Peak	Morning Peak	Evening Peak
State Route 99 North-bound Off-Ramp to Cartmill Avenue	C	D	C	D	B	C	B	C
State Route 99 North-bound Off-Ramp to Road 100 ^c	C	D	C	C	-	-	-	-
State Route 99 North-bound On-Ramp From Road 100 ^c	C	D	C	C	-	-	-	-
State Route 99 North-bound Loop On-Ramp from Cartmill Avenue	-	-	-	-	C	C	B	C
State Route 99 North-bound Direct On-Ramp from Cartmill Avenue	-	-	-	-	C	C	B	C
State Route 99 South-bound Off-Ramp to M Street	B	D	C	D	C	D	-	-
State Route 99 South-bound Off-Ramp to Cartmill Avenue	-	-	-	-	-	-	C	D
State Route 99 South-bound Loop On-Ramp from Cartmill Avenue	-	-	-	-	C	D	-	-
State Route 99 South-bound Direct On-Ramp from Cartmill Avenue	C	D	D	E	C	D	C	D

Source: State Route 99/Cartmill Avenue Project Study Report Traffic Operations Analysis, 2008 and Supplemental Traffic Forecasts and Traffic Operations for the State Route 99/Cartmill Avenue Interchange Modification Memorandum, 2011.

^a Existing analysis based on four-lane State Route 99 mainline.

^b 2033 analysis based on six-lane State Route 99 mainline.

^c The Road 100/State Route 99 northbound off- and on-ramps are eliminated with either build alternative.

Construction Impacts

For both build alternatives, the project would close Cartmill Avenue at the overcrossing of State Route 99 during construction of the new overcrossing structure.

Two viable detour options were studied:

- **Detour Option 1 (Encourage Local Road option):** Cartmill Avenue would be closed over State Route 99 with limited advance warning signage provided on State Route 99. The main diversions would occur on local city streets and roads

and to a lesser extent, county roads. Traffic affected by the closure on both northbound and southbound State Route 99 would use the Cartmill Avenue/M Street/Akers Street (Road 100) interchange ramps and adjacent local roads. The one exception is that the northbound off-ramp to Cartmill Avenue would be closed as part of the Stage 2 construction. Local traffic that would normally cross State Route 99 on Cartmill Avenue would use alternative crossings at Avenue 264 or at Prosperity Avenue depending on direction of travel. All study intersections were found to operate within acceptable levels of service and no intersection improvements were identified as necessary for this option. State Route 99 mainline or ramp junctions were found to operate at level of service C or better, and no improvements were identified as necessary for this option.

- **Detour Option 2 (Encourage Regional Interchange option):** Cartmill Avenue would be closed over State Route 99, but freeway traffic would be provided with advance warning to detour to the Avenue 264 and J Street interchanges to the north and to the Prosperity Avenue interchange to the south. Except for the northbound off-ramp to Cartmill Avenue, which would be closed, the remaining northbound and southbound ramps to Cartmill Avenue/M Street/Akers Street (Road 100) would remain open and available similar to Detour Option 1. Local traffic that would normally cross State Route 99 on Cartmill Avenue would be guided to use alternative crossings at Avenue 264 or at Prosperity Avenue depending on direction of travel. The Avenue 264/State Route 99 southbound ramps intersection was projected to experience level of service F on the southbound off-ramp approach to the intersection during the evening peak hour. The condition resulting in level of service F operations during the evening peak hour would, however, only exist during the time that Cartmill Avenue is closed over State Route 99 for construction of the new overcrossing. This intersection is currently stop-sign controlled only at the State Route 99 southbound off-ramp approach. Operations on the off-ramp can be improved to level of service C by providing stop-sign control on all intersection approaches (all-way stop) with the current approach geometries. Once Cartmill Avenue is reopened to traffic over State Route 99, a decision would be made whether to leave the all-way stop control in place or change the intersection back to stop-sign control only on the southbound off-ramp approach. State Route 99 mainline or ramp junctions were found to operate at level of service C or better, and no improvements were identified as necessary for this option.

In addition to the closure of Cartmill Avenue at State Route 99, other construction activities may affect accessibility for vehicles, transit service, bicycles and pedestrians. Travel lane or sidewalk closures may occur during various stages of construction, resulting in detours and temporary traffic delays associated with the construction period.

No-Build Alternative

Under the No-Build Alternative, no construction would take place and therefore there would be no effects.

Bicycle and Pedestrian Facilities

The build alternatives would introduce new bicycle and pedestrian facilities currently not available in the project area. Bicycle and pedestrian facilities would be provided across State Route 99 on both sides of Cartmill Avenue as part of the proposed project.

No-Build Alternative

No bicycle and pedestrian facility improvements would be developed.

Transit Facilities

Tulare InterModal Express Route 11X would be directly affected by the proposed closure of Cartmill Avenue at State Route 99 during construction of the new overcrossing. This route currently runs along M Street north to the Cartmill Avenue interchange and then travels on State Route 99 and State Route 198 to the Visalia Transit Center. At minimum, the northbound service would be detoured to an alternate route during the closure of Cartmill Avenue over State Route 99. Coordination with the City of Tulare would be necessary before the closure.

Two fixed routes, Route 20 and Route 40, are provided in the city by the Tulare County Area Transit. Neither of these two routes currently travels on State Route 99 through the project area or uses Cartmill Avenue and the interchange ramps as part of their routes.

Tulare InterModal Express and Tulare County Area Transit would be notified in advance of the start of construction and provided road closure and detour information and schedules.

No-Build Alternative

No construction would occur under the No-Build Alternative, and there would be no potential for the interruption of transit routes.

Avoidance, Minimization, and/or Mitigation Measures

Prepare and Implement Traffic Control Plan

The City of Tulare, in coordination with Caltrans, would prepare and implement a traffic control plan as part of the overall construction management plan. Contractor compliance with the traffic control plan would be required as a provision of the construction contracts and implemented throughout the course of project construction.

The traffic control plan would include the following elements:

- A plan for communicating construction activities with transit operators, emergency service providers, businesses, and residences in the project vicinity—Advance notice would be provided regarding construction work and any anticipated delays and temporary road closures.
- An access and circulation plan for use by emergency vehicles when traffic control measures are in effect—When traffic control measures are in place, advance notice would be provided to local fire and police departments to ensure that alternative evacuation and emergency routes are designed to maintain response times.
- A plan to maintain existing or provide temporary vehicular access to driveways or private roads affected by construction activities—Advance notice would be provided to property owners notifying them if their access will be temporarily closed and the estimated duration of the closure. Closures can extend only during the hours of 8 a.m. to 5 p.m. unless alternative access is provided.
- A plan to maintain existing non-motorized access or provide detour and warning signs in construction areas.
- A plan to provide adequate parking for construction-related vehicles throughout the construction period—Construction-related vehicles would not be parked in such a manner that disrupts automobile, bicycle, or pedestrian traffic.
- Limit delivery of construction materials (including rock and concrete) between the hours of 7 a.m. and 10 a.m. and 3 p.m. to 6 p.m. to State Route 99 only, to avoid more congested morning and evening hours on local roads.

- A plan to implement traffic controls in the construction area in accordance with standards set forth in the *California Manual on Uniform Traffic Control Devices* if the normal traffic flow is affected by construction activities.
- A plan to implement traffic controls at haul route crossings within the construction area in accordance with standards set forth in the *California Manual on Uniform Traffic Control Devices*.
- A signage plan—Signs giving advance notice of upcoming construction activities, roadway closures and detour routes would be posted at least one week in advance so that motorists will be able to avoid traveling through the project area during these times if they choose.
 - Construction warning signs would be posted in accordance with standards set forth in the *California Manual on Uniform Traffic Control Devices* in advance of the construction area and at any intersection that provides access to the construction area.
 - Signs would be posted at all active construction areas giving the name and telephone number or e-mail address of the City and/or County staff person who is both designated to receive complaints regarding construction traffic and has the contractual authority to enforce provisions related to each complaint.
- A requirement that written notification would be provided to contractors regarding appropriate routes to and from the construction site, and the weight and speed limits on local roads used to access the construction site.

2.1.7 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969 as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 431[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of National Environmental Policy Act (23 U.S. Code 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state “with... enjoyment of

aesthetic, natural, scenic and historic environmental qualities” (California Public Resources Code Section 21001[b]).

Criteria for Visual Assessment

Descriptions of visual character and quality in this assessment rely on the following standard terms, as defined and discussed by the 1988 *Visual Impact Assessment for Highway Projects* and the 1995 *Landscape Aesthetics: A Handbook for Scenery Management*:

- Vividness—the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- Intactness—the visual integrity of the natural and artificial landscape and its freedom from encroaching elements. Intactness can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity—the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the artificial landscape.

Vividness, intactness, and unity are the basic components used to describe visual character and quality for most visual assessments. In addition to their use as descriptors, vividness, unity, and intactness are used more objectively as factors in a rating system to evaluate a landscape’s visual quality, as shown in the following equation.

$$\text{Visual Quality} = \frac{\text{Vividness} + \text{Intactness} + \text{Unity}}{3}$$

Vividness, intactness, and unity are evaluated independently; each quality is assigned a rating from 1 to 7. On this scale, 1 is very low, 4 is average/moderate, and 7 is very high. The overall rating for visual quality follows the same 1–7 range. Ratings for each landscape unit appear in the “Affected Environment” discussion later in this chapter. Note that a reduction in the existing conditions to a lower visual quality rating, as evaluated in “Environmental Consequences,” constitutes an adverse impact.

Viewer sensitivity or concern is based on the visibility of resources in the landscape, the proximity of viewers to the visual resource, the relative elevation of viewers to the visual resource, the frequency and duration of views, the number of viewers, and the types and expectations of individuals and viewer groups.

The criteria for identifying the importance of views are related in part to the position of the viewer relative to the resource. An area of the landscape that is visible from a particular location (for example, an overlook) or series of points (a road or trail) is called a *viewshed*. To identify the importance of views of a resource, a viewshed may be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant and important it becomes to the viewer. Although distance zones in viewsheds may vary between different geographic regions or types of terrain, a commonly used set of criteria identifies the foreground zone as 0.25–0.5 mile from the viewer, the middleground zone as extending from the foreground zone to 3–5 miles from the viewer, and the background zone as extending from the middleground zone to infinity.

Visual sensitivity also depends on the number and type of viewers and the frequency and duration of views. Generally, visual sensitivity increases with an increase in the total numbers of viewers, the frequency of viewing (daily or seasonally), and the duration of views (how long a scene is viewed).

Also, visual sensitivity is higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work. Views from recreation trails and areas, scenic highways, and scenic overlooks are generally assessed as having high visual sensitivity.

Affected Environment

This section's analysis is based on the December 2011 *Visual Impact Assessment, State Route 99/Cartmill Avenue Interchange*.

Project Vicinity Character

The project is located at the intersection of State Route 99 and Cartmill Avenue in the northern portion of the City of Tulare's suburban development. The project vicinity is defined as the area within 0.5 mile of the project.

The project vicinity is characterized by intense agricultural production and residential, commercial, industrial, and public uses. The landform is generally flat, having been leveled for agriculture. Agricultural land and associated infrastructure gives the region a scenic, rural character. Orchards, row crops, vineyards, cleared fields, hay bales, farm structures, tractors, and houses are only some of the features that combined or individually can be visually pleasing or monotonous.

Pockets of suburban areas provide contrast to this rural character, and several agricultural and suburban areas are directly adjacent to one another, lacking any areas of transition between them. Suburban development in Tulare is characterized by older one-story homes near the city center with newer one- and two-story homes in the city's outskirts. Commercial, industrial/warehouse, educational, and religious facilities are throughout the city, with commercial and industrial/warehouse facilities typically in areas of concentrated use.

Areas of topographic relief can be found to the east, where the valley floor transitions to the foothills and peaks of the Sierra Nevada range, which makes up a large portion of the county.

Like the surrounding region, the project vicinity is largely rural, with the northern suburbanized boundary of the City of Tulare just south of Cartmill Avenue. Cartmill Avenue is a two-lane, east-west road that crosses over State Route 99. The Cartmill Avenue/State Route 99 interchange provides direct northbound access to Cartmill Avenue and southbound access to State Route 99. Currently, motorists traveling south on State Route 99 must exit at M Street (west of State Route 99) to access Cartmill Avenue. To travel north on State Route 99 from Cartmill Avenue, motorists must use the Drive 103 frontage road (east of State Route 99).

The project vicinity's character is consistent with the rural-suburban use mix in the region. A distinct border delineates rural areas from suburban areas. However, this boundary is gradually becoming obscured as new development on the northern outskirts of Tulare encroaches upon rural areas, and pockets of agriculture remain in newly suburbanized areas.

Landscape Units and Key Viewpoints

Because State Route 99 is at-grade, it separates viewers affected by the proposed project into distinct groups. Accordingly, for this analysis, the project vicinity has been subdivided into three landscape units: Landscape Units 1–3. Each unit was delineated based on shared sensitivities of those affected by the proposed project, similar visual features, specific vantage points, and its homogenous character.

Landscape Units 1, 2, and 3 are designated as the State Route 99 corridor, rural areas, and suburban areas, respectively, and are shown in Figure 2.1.7-1. Key viewpoints, shown in Figure 2.1.7-2, represent the landscape unit within which they are located and typical views shared by affected viewers. Photographs from these key viewpoints are shown in Figure 2.1.7-3; photograph numbers correspond to viewpoints.

Landscape Unit 1: The State Route 99 Corridor

Landscape Unit 1 is the corridor of State Route 99 that passes through the project area. Viewers in this unit are travelers on State Route 99.

The highway is at-grade. Limited vegetation grows on both sides of the highway, and a planted median physically and visually separates northbound and southbound traffic (see Figure 2.1.7-3a, Photo 1). Views are present to the east when traveling north and to the west when traveling south. Foreground, middleground, and background views of the surrounding area and region are present when traveling through rural and lightly developed areas; however, suburban areas have been built with surrounding noise barriers that limit views to the foreground. Intermittent orchards also act to briefly limit travelers' views to the foreground. The foothills to the east may be seen in the background, rising above the flat valley floor.

Views in this landscape unit are largely of agriculture to the north and east, suburban development to the southwest, the rising foothills in the eastern background, and the immediate paved surface of the highway. Vegetation alongside the highway is sporadic except where residential landscaping is visible over noise barriers. Lights are near the State Route 99 on- and off-ramps. The Cartmill Avenue overcrossing limits views to the middleground and background when roadway travelers are close to the overcrossing (see Figure 2.1.7-3a, Photo 2).

Vividness is low with a rating of 2, and intactness and unity are moderately low, each with a rating of 3. The visual quality of this landscape unit is rated moderately low at 2.7.

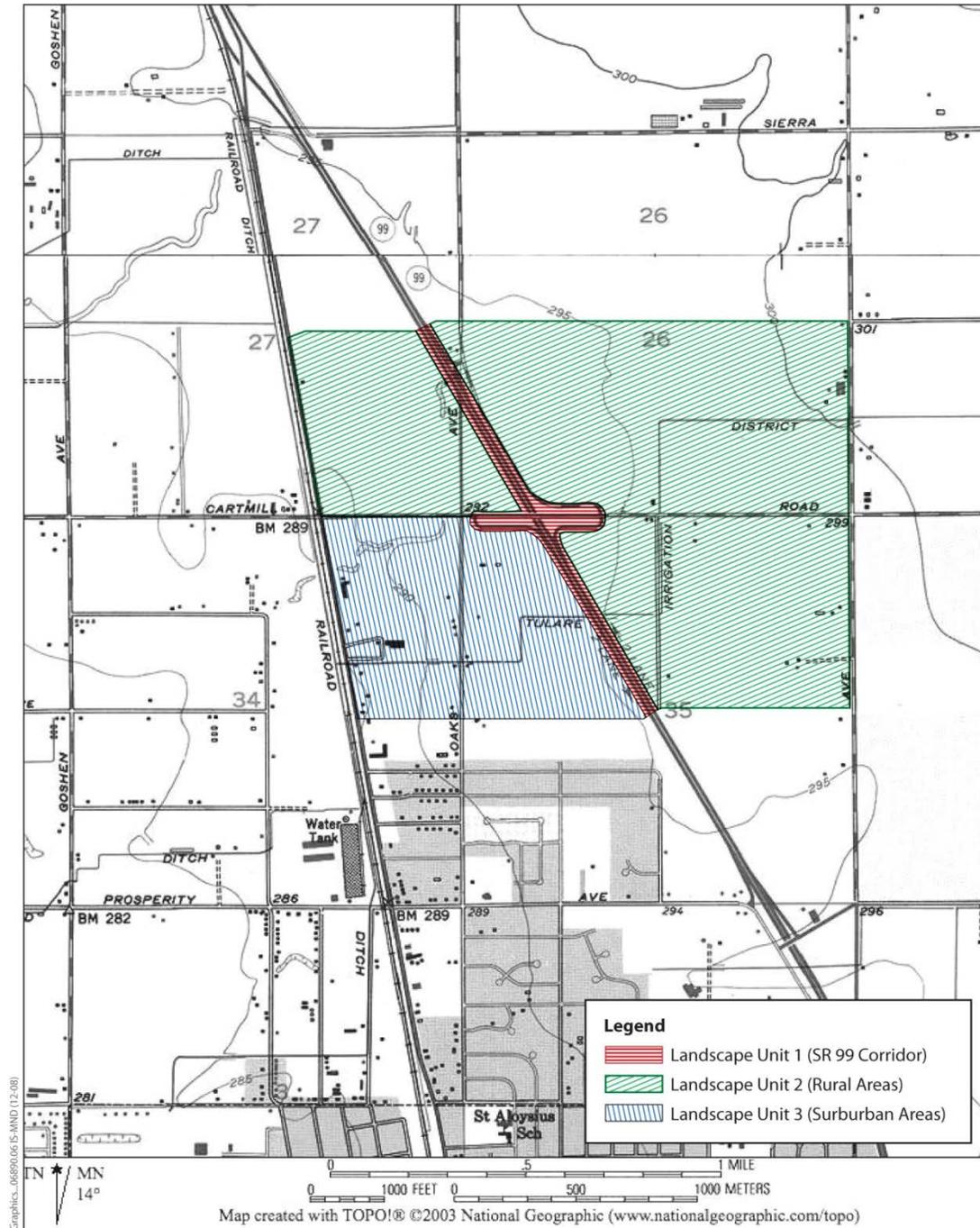


Figure 2.1.7-1 Landscape Units

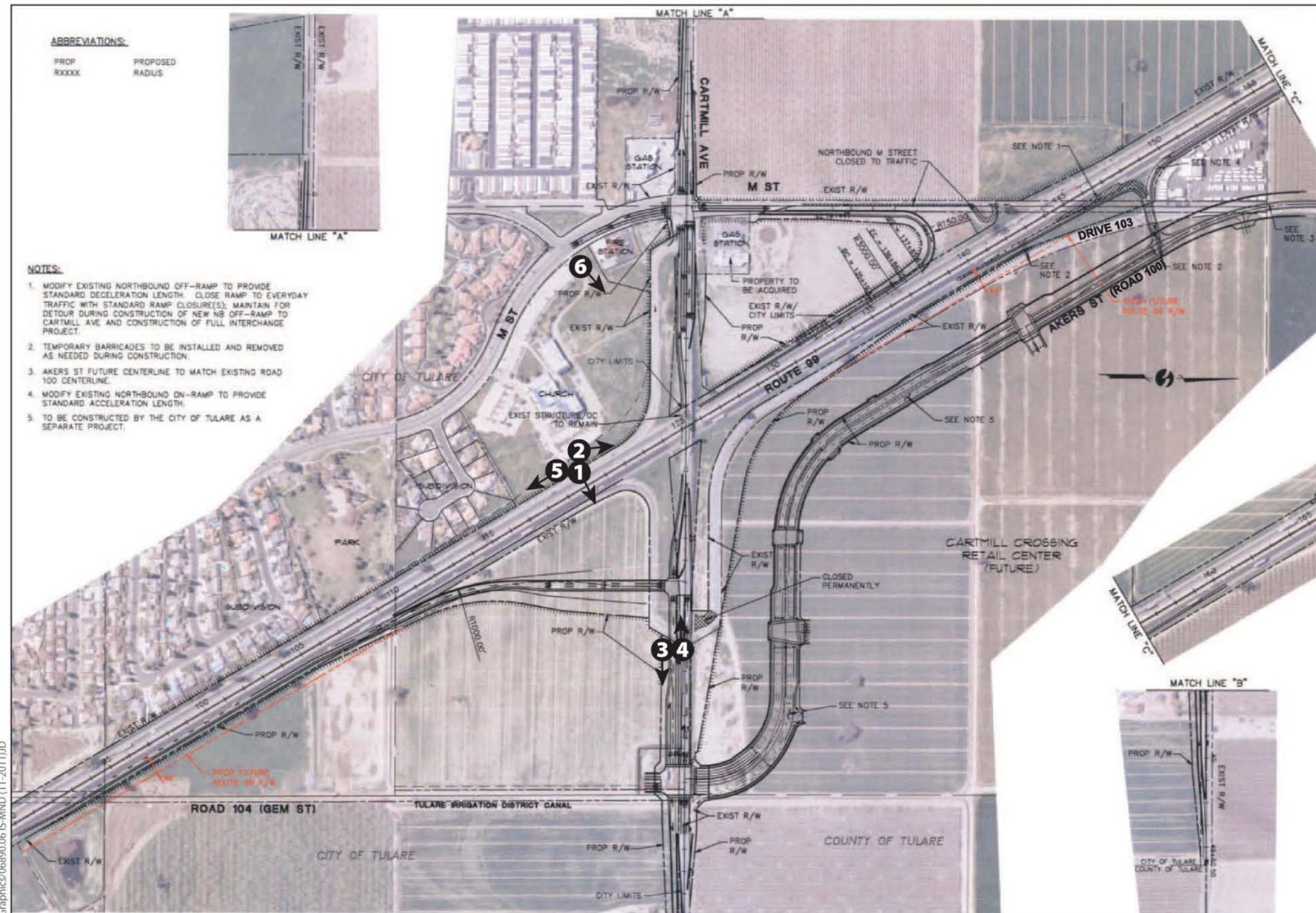


Figure 2.1.7-2 Key Viewpoints and Photo Locations



Photo 1: This photo depicts the how the landscaped median visually separates northbound and southbound traffic in Landscape Unit 1.



Photo 2: This photo depicts how the Cartmill Avenue overpass limits views to the middleground and background and the existing vegetation in Landscape Unit 1.



Photo 3: This photo depicts the rural nature of Cartmill Avenue in Landscape Unit 2.



Photo 4: This photo depicts the view from Cartmill Avenue in the rural Landscape Unit 2 looking toward the overpass.

Graphics ... 0689006 (S-MND) (5-2011) (D)

Figure 2.1.7-3a Representative Photographs



Photo 5: This photo depicts the landscaping and sound wall that limits views from suburban residences in Landscape Unit 3.



Photo 6: This photo depicts an open view from the church in Landscape Unit 3 and its close proximity to SR 99 and the Cartmill Avenue overpass.

Graphics ... 069006 (5-Mile) (5-2011).indd

Figure 2.1.7-3b Representative Photographs

Landscape Unit 2: Rural Areas

Landscape Unit 2 includes the rural areas within the project area. Viewers in this unit include rural residents, roadway travelers on local rural roadways, and a small number of employees associated with commercial or warehouse operations (see Figure 2.1.7-3a, Photo 3). Several single-family homes in this landscape unit have potential views of the project site. Most of these residences have vegetation planted around their perimeters for shade and privacy. Some of these residences lack views of the project site because they are separated from the site by orchards. Residents with views can see the City of Tulare's edge across the fields and see the mountains, to the east, in the background.

Roadway travelers have the most prominent views of the site, as Cartmill Avenue is heavily used because of its interchange with State Route 99 and the nearby gas stations. The Cartmill Avenue overcrossing can block views of the middleground and background when a driver is close to the overcrossing. Aboveground utilities (roadway lights, traffic lights, and utility lines and poles) and infrastructure (signs and overcrossings) are prominent features in the viewshed (see Figure 2.1.7-3a, Photo 4).

Ratings for vividness (3), intactness (2.7), and unity (2.7) are moderately low. The visual quality of this landscape unit is moderately low at 2.8.

Landscape Unit 3: Suburban Areas

Landscape Unit 3 is west of State Route 99 and south of Cartmill Avenue. The landscape extends west to North J Street. The east side of this landscape unit includes residences, Blain Park, and the Bethel Assembly of God/In Living Christ Church that all directly abut the right-of-way of State Route 99. To the north, a fire station, Oaks Estate Mobile Home Park residents, and the church are separated from Cartmill Avenue by remnant agriculture fields and vacant lots. A gas station directly abuts the Cartmill Avenue right-of-way.

From their backyards, residents on the northern and eastern edges of this landscape unit have views of Cartmill Avenue and State Route 99, respectively, but their views are often limited by the fencing, noise barriers, and landscaping (see Figure 2.1.7-3b, Photo 5).

Views from the gas station, fire station, church, and park have fewer features to obscure nearby roadways (see Figure 2.1.7-3b, Photo 6).

Foreground and middleground views are limited throughout this landscape unit and consist of glimpses of adjacent residential properties and adjacent land uses. Viewing distance is decreased by existing buildings, infrastructure, and vegetation; therefore, background views are limited.

Ratings for vividness (2.5), intactness (2.5), and unity (2.5) are moderately low. The visual quality of this landscape unit is moderately low (2.5).

Viewer Groups and Responses

Roadway users, recreationists, and residents make up the viewer groups of the project. Roadway users are one of the largest viewer groups and consist of travelers on State Route 99, Cartmill Avenue, and adjacent frontage roads and those using the State Route 99/Cartmill Avenue interchange. Because State Route 99 is a commercial and commuter route, frequent viewers include truck drivers and commuters.

At standard highway speeds during peak and off-peak hours, viewers who frequently travel the freeway generally possess low visual sensitivity to their surroundings because views are short in duration; freeway users are fleetingly aware of surrounding traffic, road signs, their immediate surroundings within the automobile, and other visual features; and their concentration is focused on merging onto or exiting from State Route 99. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on it.

Recreationists include cyclists, walkers, and joggers who are more likely to regard the natural and built surroundings as a holistic visual experience; however, structures for the Cartmill Avenue interchange with State Route 99 already exist at the site.

Recreationists would have moderately low sensitivity to visual changes to the area because the baseline condition includes existing disturbance and development.

Most rural residences are separated from the project site by orchards or have vegetation planted around their perimeters for shade, visual obstruction, and privacy. Suburban residents have limited views of the project site because residences are oriented inward toward neighborhood streets. From their backyards, residents on the northern and eastern edges have views of Cartmill Avenue and State Route 99, respectively, but their views often are limited by fencing, noise barriers, and landscaping.

Residents in the project vicinity are accustomed to traffic and the existing structures for Cartmill Avenue's overcrossing and interchange with State Route 99. Residents

would have moderately low sensitivity to visual changes in the area because the baseline condition includes existing disturbance and development, and there is distance between residents and the project site.

Environmental Consequences

Although scenic views toward the Sierra Nevada exist along the project corridor, there are no scenic vistas. In addition, there are no eligible or officially designated state, county, or city scenic roadways worthy of protection for their visual resources. Because there would be no impact on scenic vistas or scenic roadways, no further discussion is required.

Discussed below are long-term impacts (those resulting from the built project) and short-term impacts (those occurring during construction).

Long-Term Visual Changes

Degradation of Existing Visual Character

Once built, the project would introduce visual changes to agricultural lands, including the new Akers Street and the relocated northbound State Route 99 off-ramp to Cartmill Avenue. In addition, Cartmill Avenue would be widened from two to six lanes, causing the degradation of rural visual character and increasing the visible footprint of roadway infrastructure on the landscape. The overcrossing would stand out more against its surroundings, and construction would require the removal of eight large eucalyptus trees nearby. This would cause the overcrossing to appear more substantial.

Light and Glare

Construction of the project would create long-term changes in light and glare with new traffic signals and street lights. The existing nighttime lighting in the project area includes roadway lights, vehicle lights, and lighting from adjacent commercial uses, residential subdivisions, rural residences, and farms. The roadway features themselves do not contribute substantially to daytime glare.

The project would install a new traffic signal, relocate and install new lighting, and install 1–3 new highway lights at entrances to and exits from each freeway ramp. Secondary lighting would be provided within the loops of any loop ramp, and recessed lighting would be installed in the underside of the Cartmill Avenue overcrossing, over the outside edge of the travel way on State Route 99.

In addition, city lighting would be provided on M Street, Cartmill Avenue, and Akers Street. Streetlights would be provided on each street, spaced about every 180 feet on each side.

As proposed, the changes in nighttime light relative to the current amount of light would have little impact on all viewers in all landscape units because of the presence of existing light sources (residences, commercial development, and existing streetlights) in these units and lighting that would come from the future Cartmill Crossing Retail Center. The new traffic signals and streetlights in these units would not affect residential viewers close to the project site because the noise barrier and vegetation would diffuse the light to insignificant levels.

For nighttime roadway travelers, the new lighting would contribute to improved driving conditions, resulting in a beneficial impact. The proposed project would not introduce new substantial sources of daytime glare because all metal roadway features would be galvanized steel, which would oxidize within a few seasons and would not contribute to daytime glare. The project would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views.

Impact on Landscape Unit 1

Changes in views of Landscape Unit 1 would result in major visual changes to the site, including the construction of Akers Street and the relocation of the northbound State Route 99 off-ramp to Cartmill Avenue. Both of these changes would occur on agricultural lands, though Akers Street would be next to the future Cartmill Crossing Retail Center. These changes would not be highly visible from this landscape unit. Ratings for vividness (2), intactness (3), and unity (3) ratings would remain the same, so the visual quality rating (2.7) would not change.

The greatest visual impact would be the widened overcrossing that would require more infrastructure and earthwork than the existing structure. The project would not degrade the existing visual character of the roadway, which already includes an overcrossing. However, as noted above, removal of eight large eucalyptus trees would affect views and make the overcrossing stand out more against its surroundings and appear more substantial. Even though roadway users on State Route 99 travel at high speeds, they would see the overcrossing upon approach from either direction. The widened overcrossing would lower ratings for vividness (from 2 to 1.8), intactness (from 3 to 2.8), and unity (from 3 to 2.8), and the visual quality rating (2.7) would

accordingly become lower (2.5). Implementation of a landscaping plan would reduce the level of this impact.

Impact on Landscape Unit 2

Construction of the project would create long-term changes in the views of Landscape Unit 2. Major visual changes to the site include the construction of Akers Street and the relocation of the northbound State Route 99 off-ramp to Cartmill Avenue. Both of these changes would occur on agricultural lands, though Akers Street would be next to the future Cartmill Crossing Retail Center.

The impact of these changes on key viewers is considered low for the following reasons: viewer sensitivities in the area are low to moderately low; these changes would not constitute a substantial change in the existing viewshed; viewers are familiar with nearby existing roadway infrastructure; Akers Street would be located in an area proposed for substantial development; and the proposed improvements would not alter the vividness, intactness, or unity of existing views within this unit. Ratings for vividness (3), intactness (2.7), and unity (2.7) would remain the same, so the visual quality rating (2.8) would not change.

Another visual impact would be the widened overcrossing that would require more infrastructure and earthwork than the existing structure. This would degrade the existing visual character of the viewshed, which already includes an overcrossing, because it would require the removal of eight large eucalyptus trees growing near the existing overcrossing in Landscape Unit 1, as described above. Removal of these trees would make the overcrossing stand out more against its surroundings and appear to be a more substantial infrastructure massing. The widened overcrossing would lower ratings for vividness (from 3 to 2.5), intactness (from 2.7 to 2.4), and unity (from 2.7 to 2.5), and the visual quality rating (2.8) would accordingly become lower (2.5). Compliance with the City's heritage-tree preservation ordinance, municipal code section 8.52, would reduce the impacts related to the removal of heritage trees.

Impacts on Landscape Unit 3

Project implementation would result in changes in views of Landscape Unit 3. Major visual changes to the site include the construction of Akers Street and the relocation of the northbound State Route 99 off-ramp to Cartmill Avenue. Both of these changes would occur on agricultural lands and likely would not be visible from this landscape unit. The impact of these changes on key viewers is considered low for the following reasons: viewer sensitivities in the area are low to moderately low; these changes

would not constitute a substantial change in the existing viewshed; viewers are familiar with nearby existing roadway infrastructure; and the proposed improvements would not alter the vividness, intactness, or unity of existing views within this unit. Ratings for vividness (2.5), intactness (2.5), and unity (2.5) would remain the same, so the visual quality rating (2.5) would not change.

The greatest visual impacts under Alternative 1 would be the widened overcrossing and a new southbound State Route 99 on-ramp. The widened overcrossing would require more infrastructure and earthwork than the existing structure. This would degrade the existing visual character of the roadway, which already includes an overcrossing, because it would require the removal of eight large eucalyptus trees near the existing overcrossing in Landscape Unit 1. Removal of these trees would make the overcrossing stand out more against its surroundings and appear more substantial. The new off-ramp would skirt the church's back parking lot and be much closer—and more visible—to public viewers. The widened overcrossing would lower ratings for vividness (from 2.5 to 2.4), intactness (from 2.5 to 2.3), and unity (from 2.5 to 2.3), and the visual quality rating (2.5) would accordingly become lower (2.3). Compliance with the City's heritage-tree preservation ordinance, municipal code section 8.52, would reduce impacts related to the removal of heritage trees.

Impacts under Alternative 2 would be similar to those of Alternative 1. However, the greatest difference compared with the impacts discussed under Alternative 1 would be a much higher degree of visual impact on the church. The new off-ramp would physically cross to the church's back parking lot, come within about 30 feet of the church building, and be much more visible to public viewers because of this close proximity. A noise barrier is being evaluated under this alternative. Installation of such a barrier in this location would preclude views that currently exist and give the appearance of enclosure because of such close proximity to the building. Vividness (V = 2.5, reduced to 2.4), intactness (I = 2.5, reduced to 2.2), and unity (U = 2.5, reduced to 2.1) would be affected by the proposed project for both landscape units, and their visual quality rating (VQ = 2.5) would change to a lower rating (VQ = 2.2). Compliance with the City's heritage-tree preservation ordinance, municipal code section 8.52, would reduce impacts related to the removal of heritage trees.

Short-Term Visual Changes

The improvements to the Cartmill Avenue/State Route 99 interchange would be built in phases (Phase 1 in 2013 and Phase 2 in 2033). The project would widen the roadway, construct Akers Street, improve intersections by upgrading or adding turn

lanes, install a new traffic signal, and relocate and install new street lighting at the interchange. Both phases generally would require a greater area to accommodate the proposed construction, including staging areas, interchange improvements, overcrossing construction, roadway installation, and roadway widening.

Construction would occur during the day and night for both phases to reduce effects on traffic, and these activities would be visible to travelers in both directions along Cartmill Avenue and State Route 99 and from rural and suburban areas.

Travelers and surrounding land uses would be subjected to visual changes associated with construction activities and facilities such as vegetation removal and clearing, grading, paving, temporary signage, and construction staging areas.

Viewers in all landscape units close to the interchange would see construction activities and equipment, but new development and roadwork are common in the region. This visual quality impact would be considered slightly adverse for the following reasons: moderate to moderately low vividness, intactness, and unity of project site views; moderately low to low viewer sensitivity to visual changes at the site. Although it would be a slightly adverse impact, during both phases, construction would be temporary.

No-Build Alternative

Under the No-Build Alternative, there would be no construction and no changes to current roadway configurations, so there would be no visual impacts associated with this alternative.

Avoidance, Minimization, and/or Mitigation Measures

Place New Utilities Underground

New utilities would be placed underground. Where feasible and consistent with applicable regulations, the project sponsor would place new utilities underground to minimize their visual intrusion on the landscape.

Implement Project Landscaping Plan

Consistent with the Land Use and Conservation and Open Space Elements of the City of Tulare's general plan, the landscape architect or landscape contractor and the interchange contractor would refer to Policy LU-13.9, Gateway/Streetscape Improvements: "The City shall visually enhance key gateways (e.g., city limit entries on Highways 99/137) and major thoroughfares using the following: street trees, welcome signs, decorative lighting, archways, and other streetscape design

techniques”; and Policy COS-2.5, Planting of Native Vegetation: “The City shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.” This would help to maintain the local character, improve aesthetics, and reduce the visual scale of proposed project.

The project landscape architect or landscape contractor and the interchange contractor would adhere to the following practices in implementing the project landscaping plan:

- The species composition of open space areas will reflect species that are native to the project area, or other climatically adapted species.
- Under no circumstances will any invasive plant species be used at any location.
- Vegetation will be planted within 2 years following project completion.
- Design of the landscaping plan would try to maximize the use of planting zones that do not need irrigation, such as seeding with a native grassland and wildflower meadow mix, and incorporate aesthetic features, such as a cobbling swales or shallow detention areas, that reduce or eliminate the need for an irrigation system.
- If an irrigation system is required, an irrigation and maintenance program will be implemented during the plant establishment period and carried on, as needed, to ensure plant survival.
- If an irrigation system is required, areas that are irrigated will use a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. To avoid undue water flows, the irrigation system will be managed in such a manner that any broken spray heads, pipes, or other components are fixed within 1–2 days, or the zone or system will be shut down until it can be repaired.

2.2 Physical Environment

2.2.1 Water Quality and Stormwater Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (“waters of the U.S.”) from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. Known today as the Clean Water

Act, Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. The following are important sections of the Clean Water Act:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers.

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

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard permits.

- There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.
- There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers’ Standard permits. For Standard permits, the U.S. Army Corps of Engineers

decision to approve is based on compliance with U.S. EPA's Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest.

The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order.

The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S.

In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act (California Water Code)

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

The State Water Resources Control Board and Regional Water Resources Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable Regional Water Resources Control Board Basin Plan.

States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are 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 controls, the Clean Water Act requires establishing Total Maximum Daily Loads, which specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, water pollution control, and water quality functions throughout the state. Regional Water Resources Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 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 are designed or used for collecting or conveying storm water. The State Water Resources Control Board has identified Caltrans as an owner/operator of an MS4 by the State Water Resources Control Board. This permit covers all the Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional

Water Resources Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 permit, under revision at the time of this environmental document, 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-stormwater discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) best management practices and other measures.

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

Part of and appended to the Statewide Stormwater Management Plan is the Stormwater Data Report and its associated checklists. The Stormwater Data Report documents the relevant stormwater design decisions made regarding project compliance with the MS4 National Pollutant Discharge Elimination System permit. The preliminary information in the Stormwater Data Report prepared during the Project Initiation Document phase will be reviewed, updated, confirmed, and if required, revised in the Stormwater Data Report prepared for the later phases of the project. The information contained in the Stormwater Data Report may be used to

make more informed decisions regarding the selection of best management practices and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

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

The 2009 Construction General Permit separates projects into Risk Levels 1, 2 and 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Stormwater Pollution Prevention Plan. In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan is necessary for projects with Disturbed Soil Area less than 1 acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Resources

Control Boards, dependent on the project location, and are required before U.S. Army Corps of Engineers issues a 404 permit.

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

Tulare Lake Basin Plan

The Porter-Cologne Water Quality Control Act provides for the development and periodic review of water quality control plans (also known as basin plans). The California Regional Water Quality Control Board's basin plan for the Tulare Lake Basin, as amended, designates beneficial uses and water quality objectives for water bodies in the region. Specific objectives are provided for the larger water bodies within the region as well as general objectives for ocean waters, bays and estuaries, inland surface waters, and groundwater. In general, narrative objectives require that degradation of water quality not occur because of increases in pollutant loads that will impact the beneficial uses of a water body. The tributary rule applies to all the beneficial uses of waters that are downstream of the project area. Water quality criteria apply within receiving waters and do not apply directly to runoff; therefore, water quality criteria from the Sacramento-San Joaquin Basin Plan are used as benchmarks for comparison in the qualitative assessments in the discussion of proposed project impacts below.

Unless otherwise designated by the Regional Water Quality Control Board, all groundwater in the region is considered as suitable or potentially suitable, at a minimum, for municipal water use, agricultural supply, industrial service supply, and industrial process supply.

One method the Central Valley Regional Water Quality Control Board uses to implement Basin Plan criteria is through the issuance of waste discharge requirements. Waste discharge requirements are issued to any entity that discharges point-source effluent to a surface water body. The waste discharge requirement permit also serves as a federally required National Pollutant Discharge Elimination

System permit (under Clean Water Act) and incorporates the requirements of other applicable regulations.

Affected Environment

Information presented in this section comes from the December 2011 *State Route 99/Cartmill Avenue Interchange Improvements Location Hydraulic Study*, and the Water Quality Assessment Memorandum prepared for this project in January 2012. Information on drainage basins in particular comes from the Draft Project Report prepared for this project (March).

Drainage

The existing drainage system collects surface runoff in roadside ditches on the east and west sides of State Route 99. There are a series of culverts that allow drainage to pass under the existing highway and existing ramps. According to as-built drawings and general topography, all existing runoff is contained within the State right-of-way.

Surface Water Quality

Kaweah River and St. Johns River are the two major river systems in the regional project area, and include several creeks and smaller channels. Other waters described in the regional project area include the Friant-Kern Canal, the Tulare Irrigation District Main Canal, and several other channels and canals that convey irrigation water and runoff.

Water quality in these rivers is generally good in the higher elevations, typical of snowmelt runoff, while water quality in the valley is often dominated by agricultural return flows and tends to be of lesser quality. Based on the highway stormwater runoff data collected by the Caltrans Stormwater Research and Monitoring Program, pollutants that are expected to be found in runoff from the proposed project include conventional constituents (biochemical oxygen demand, calcium carbonate, chemical oxygen demand, total dissolved solids, total organic carbon, total suspended solids and total volatile suspended solids) hydrocarbons, metals, microbial agents, nutrients, volatile and semi-volatile organics, pesticides, and herbicides.

Pollutants are usually deposited on the roadway as a result of fuel combustion processes, lubrication system losses, tire and brake wear, transportation load losses, paint from infrastructure, and atmospheric fallout. Sources of specific pollutants are listed in Table 2.2.1-1.

Table 2.2.1-1 Caltrans Pollutant Sources

Constituents	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere, maintenance, snow/ice abrasives, sediment disturbance
Nitrogen, Phosphorus	Atmosphere, roadside fertilizer application, sediments
Lead	Auto exhaust, tire wear, lubricating oil and grease, bearing wear, atmospheric fallout
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel highway structures, moving engine parts
Copper	Metal plating, bearing and bushing wear, moving engine parts, brake lining wear, fungicide and insecticide application
Cadmium	Tire wear, insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline, lubricating oil, metal plating, bushing wear, brake lining wear, asphalt paving
Manganese	Moving engine parts
Bromide	Exhaust
Cyanide	Anticake compound used to keep deicing salt granular
Sodium, Calcium	Deicing salts, grease
Chloride	Deicing salts
Sulphate	Roadway bed, fuel, deicing salts
Petroleum	Spills, leaks or blow-by of motor lubricants, antifreeze and hydraulic fluids, asphalt leachate
Polychlorinated biphenyl compounds, Pesticides	Spraying of highway rights-of-way, atmospheric deposition, polychlorinated biphenyl catalyst in synthetic tires
Pathogenic bacteria	Soil litter, bird droppings, trucks hauling livestock/stockyard waste
Rubber	Tire wear
Asbestos ^a	Clutch and brake lining wear

Source: Water Quality Assessment for the State Route 99/Cartmill Avenue Interchange Improvement Project, Memorandum, January 2012.

^a No mineral asbestos has been identified in runoff; however some breakdown products of asbestos have been measured.

Groundwater Quality

The groundwater quality in the Kaweah River basin is generally of calcium bicarbonate type, with sodium bicarbonate waters near the western margin of the valley. Total dissolved solids range from 35–1,000 milligrams per liter (mg/L), with a typical range of 300–600 mg/L. The Department of Health Services, which monitors Title 22 water quality standards, reports total dissolved solids values in 153 wells ranging from 35 to 580 mg/L, with an average value of 189 mg/L in the California Department of Water Resources Bulletin 18 of 2004.

Groundwater quality impairments include localized areas of high nitrate pollution with some areas of high salinity, according to the California Department of Water Resources Bulletin 18 of 2004.

Environmental Consequences

When complete, Alternative 1 would increase the impervious surface by about 12 acres, and Alternative 2 would increase the impervious surface by about 10.5 acres. Because both alternatives would result in concentrating and redirecting stormwater flows from a net increase in impervious surface, proper drainage facilities would need to be installed to minimize these impacts.

The conceptual drainage plan developed for Alternative 1 would drain the runoff from the western half of the proposed interchange to two new retention basins (Basin A and Basin B) to be located in the northwest quadrant of the proposed interchange between the State Route 99 southbound off-ramp, State Route 99, and Cartmill Avenue (see Figure 2.2.1-1).

Basin A and Basin B will be designed to hold up to a 1-foot water depth before overflow runoff is routed into underground stormwater pipes and conveyed to a new City of Tulare detention basin at the northeast quadrant of the J Street and Cartmill Avenue intersection. Stormwater from the new City of Tulare Basin would discharge into the Tulare Irrigation District railroad ditch to the west.

Runoff from the eastern half of the proposed interchange would drain to four retention basins (Basin C, Basin D, Basin E, and Basin F). Basin C would be in the northeast quadrant of the proposed interchange, outside of and next to the State Route 99 northbound off-ramp (see Figure 2.2.1-1). Basin D and Basin E would be in the southeast quadrant of the proposed interchange, between the State Route 99 northbound off-ramp, State Route 99, and Cartmill Avenue (see Figure 2.2.1-1).

Basins C, D, and E would be designed to hold up to 1 foot of water before overflow runoff would be routed into underground stormwater pipes and conveyed to a new City of Tulare detention basin at the northeast corner of J Street and Cartmill Avenue. Stormwater from the new City of Tulare basin would discharge into a Tulare Irrigation District ditch located to the west. Basin F would be in the southeast quadrant of the proposed interchange, outside of and next to the State Route 99 northbound off-ramp (see Figure 2.2.1-1). Basin F would be designed to hold up to 1 foot of water before overflow runoff would be routed into underground stormwater pipes and conveyed to the adjacent existing City of Tulare retention basin.

Basins A, B, C, D, E, and F would sit within the proposed state right-of-way for the proposed interchange and would not require any additional right-of-way specifically for the operation and maintenance of the best management practices.

The conceptual drainage plan developed for Alternative 2 would drain runoff from the western half of the proposed interchange to three retention basins (Basin G, Basin H, and Basin I). Basin G would be in the northwest quadrant of the proposed interchange, out of and next to the State Route 99 southbound off-ramp (see Figure 2.2.1-2). Basin H and Basin I would be south of Cartmill Avenue, in the southwest quadrant of the proposed interchange between M Street and the State Route 99 southbound on-ramp, and between the State Route 99 southbound on-ramp and State Route 99 (see Figure 2.2.1-2). Basin G, Basin H, and Basin I would be designed to hold up to 1 foot of water before overflow runoff is routed into underground stormwater pipes and conveyed to a new City of Tulare detention basin at the northeast quadrant of J Street and Cartmill Avenue.

Runoff from the eastern half of the proposed interchange would drain to four retention basins (Basin C, Basin D, Basin E, and Basin F). Basin C would be in the northeast quadrant of the proposed interchange, outside of and next to the State Route 99 northbound on-ramp (see Figure 2.2.1-2). Basin D and Basin E would be in the southeast quadrant of the proposed interchange, between the State Route 99 northbound off-ramp, State Route 99, and Cartmill Avenue (see Figure 2.2.1-2).

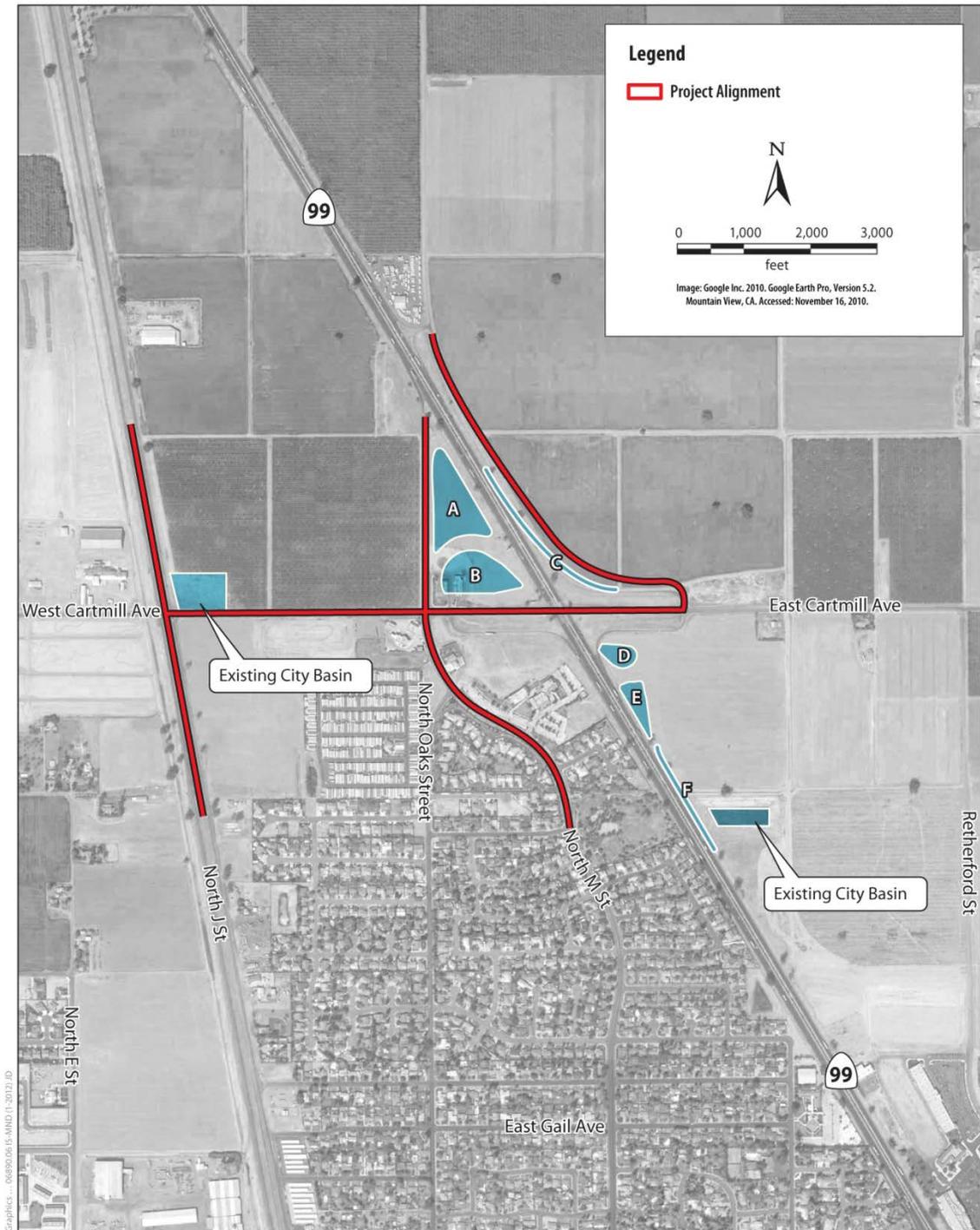


Figure 2.2.1-1 Existing and Planned Drainage Basins, Alternative 1

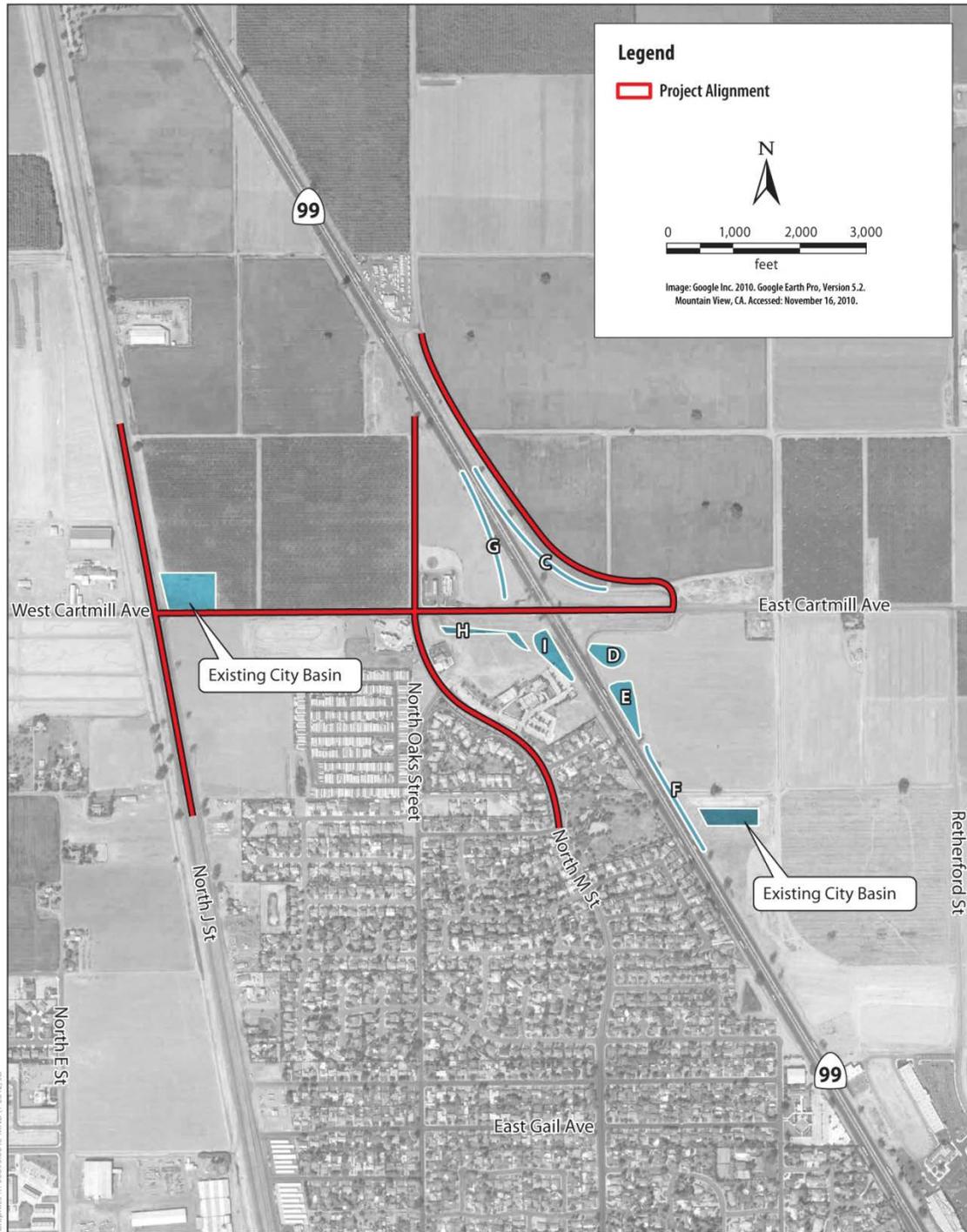


Figure 2.2.1-2 Existing and Planned Drainage Basins, Alternative 2

Basins C, D, and E would be designed to hold up to 1 foot of water before overflow runoff would be routed into underground stormwater pipes and conveyed to a new City of Tulare detention basin at the northeast corner of J Street and Cartmill Avenue. Stormwater from the new City of Tulare basin would discharge into a Tulare Irrigation District ditch located to the west.

Basin F would be in the southeast quadrant of the proposed interchange, out of and next to the State Route 99 northbound off-ramp (see Figure 2.2.1-2). Basin F would be designed to hold up to 1 foot of water before overflow runoff would be routed into underground stormwater pipes and conveyed to the adjacent existing City of Tulare retention basin.

Basins C, D, E, F, G, H, and I would sit within the proposed state right-of-way for the proposed interchange and would not require any additional right-of-way specifically for operation and maintenance of the best management practices.

Proposed Basins A, B, C, D, E, F, G, H, and I and the City basins would accommodate two consecutive 10-year, 24-hour storms per State standard. Both alternatives would accommodate stormwater runoff from new impervious surfaces and would effectively reduce pollutants that may be in the runoff.

Implementation of either Alternative 1 or Alternative 2 would disturb only a small surface area of soil. However, even a small amount of runoff during construction or operation of the interchange could result in a violation of water quality standards or waste discharge requirements by increasing siltation and turbidity in surface waters.

The Central Valley Regional Water Quality Control Board sets water quality objectives for turbidity, and construction projects must not increase turbidity levels more than 20 percent over ambient conditions. It is anticipated that best management practices included in the Stormwater Pollution Prevention Plan would ensure that turbidity objectives are not violated.

As a result of any construction, the use of machinery and construction materials, along with the presence of vehicles during operation, could create the potential for toxic chemicals such as gasoline, oils, grease, solvents, lubricants, and other petroleum products to be transported to nearby watercourses via surface runoff in the event of a storm. Washwater from equipment, tools, and other waste dumped or spilled on the construction site can easily lead to seepage of pollutants into

watercourses. However, it is anticipated that any runoff from the proposed project would be captured in the existing and proposed drainage basins.

No-Build Alternative

The No-Build Alternative would not result in any impacts on water quality.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans Standard Specifications Section 7-1.01G requires the construction contractor to implement pollution control practices related to construction projects via a Stormwater Pollution Prevention Plan. Implementation of best management practices included in the Caltrans's 2003 *Storm Water Management Plan* would help reduce runoff related impacts from the construction site. In addition, implementation of the Caltrans Statewide Permit along with the *Storm Water Management Plan* would help avoid stormwater quality-related impacts. Such impacts are reduced by implementation of best management practices, which include erosion control, pollution prevention, treatment, construction and maintenance best management practices.

2.2.2 Geology/Soils/Seismic/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 the California Environmental Quality Act.

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. The Caltrans Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The current policy is to use the anticipated Maximum Credible Earthquake, from young faults in and near California. The Maximum Credible Earthquake is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

Affected Environment

The existing conditions presented in this section are summarized from the *Revised Preliminary Geotechnical Design and Materials Report, Proposed Cartmill Avenue and State Route 99 Interchange Project, Tulare, Tulare County, California*, prepared in January 2012.

The project area is in the central portion of the San Joaquin Valley, a broad topographic and structural trough in Central California. The site sits on alluvial fan sediments that sit upon the Upper Miocene to Pliocene Kern River Formation. Topography in the project area is nearly level, and elevation is about 295 feet above mean sea level.

Most of the native sediments in the project area have been mapped by the California Geological Survey as *recent alluvial fan deposits*, defined in the 1965 Geologic Map of the Fresno Quadrangle as typical alluvial fan deposits generally consisting of dense gravelly and clayey sand/clayey gravel that fine upwards to sandy clay.

A total of 27 test borings were drilled within the project area. Borings along the shoulders of State Route 99 indicated that subsurface soils in the upper 5 feet consist of silty sand with variable fines content, clayey sand, sandy silt, and sandy clay. Soils along the shoulder of Cartmill Avenue also consist of silty sand. Soils in undeveloped areas near the existing Cartmill Avenue bridge abutments are a stiff sandy silt within the upper 15 feet and a very stiff sandy silt, dense sand and silty sand below 15 feet. Soils in open fields at the northwest and southwest corners of the interchange are a medium-dense silty sand and stiff sandy silt.

Seismic hazards refer to primary hazards, such as earthquake faulting and groundshaking, and secondary hazards, such as liquefaction and landslides. No active faults lie in or near the project area. The nearest active faults and fault zones to the project area are more than 20 miles away. Numerous active or potentially active faults are within 60 miles of the site. The site is not located in a Fault-Rupture Hazard Zone, and there is little hazard from ground-shaking in the project area. Neither liquefaction nor seismically induced settlement is considered possible at the project site due to the depth to the groundwater table and relatively stiff soil profile. Because the project area and vicinity are essentially flat and topographically featureless, there is no risk of landslides.

Environmental Consequences

A large earthquake could potentially cause moderate to strong ground-shaking on active faults in the region. However, ground-shaking in the project area would be low relative to other parts of California. With adherence to current locally adopted building code standards, risks related to seismic ground-shaking would be minimal.

Seismic hazards in the project area, such as fault rupture and landslides, are considered low and would not likely result in an increase of hazardous conditions for

construction workers or the travelling public. The susceptibility of project area soils to liquefaction is low. The project would adhere to locally adopted building codes, further reducing potential impacts related to liquefaction or seismically induced settlement.

Grading, excavation, removal of vegetation cover, and loading activities associated with construction could temporarily increase erosion and sedimentation of water bodies. Construction could also result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at the construction sites and staging areas. However, a Stormwater Pollution Prevention Plan would be developed by a qualified engineer or erosion control specialist and implemented before construction begins.

No-Build Alternative

The No-Build Alternative would not result in any geologic or seismic impacts.

Avoidance, Minimization, and/or Mitigation Measures

In addition to best management practices, as identified in Caltrans Standard Specifications, Section 7-1.01G, employed to control soil erosion during construction (described in Section 2.2.1, *Water Quality and Stormwater Runoff*), the following mitigation would reduce these impacts.

Implement Recommendations in the Revised Preliminary Geotechnical Design and Materials Report

The *Revised Preliminary Geotechnical Design and Materials Report* provides recommendations regarding earthwork and grading, foundation construction, structural wall backfill, lateral earth pressures and frictional resistance, earthwork factors, embankment stability and settlement, corrosion potential, trench excavation and backfill, excavation stability, and surface drainage controls. The recommendations would be included in the construction contract and implemented as necessary to reduce potential impacts.

2.2.3 Paleontology

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects: Antiquities Act of 1906 (16 U.S. Code 431-433), Federal-Aid Highway Act

of 1960 (23 U.S. Code 305), and the Omnibus Public Land Management Act of 2009 (16 U.S. Code 470aaa). Under California law, paleontological resources are protected by the California Environmental Quality Act.

Affected Environment

The existing conditions presented in this section are based on the following technical reports:

- Cartmill Avenue/Route 99 Interchange Improvements (Tulare County, California) Assessment Report on Paleontological Sensitivity (July 2008).
- State Route 99/Cartmill Avenue Interchange Improvements Paleontological Evaluation Report (December 2011).

Geologic Features

The project is in the southern portion of California's Great Valley geomorphic province, which is dominated by the expansive alluvial plain that lies between the Sierra Nevada on the east and the Coast Ranges on the west. Subdivided into the Sacramento Valley to the north and the San Joaquin Valley to the south, the valley has an average width of about 50 miles and is about 450 miles long. Its southern end is defined by the Tehachapi Mountains north of Los Angeles, and its northern end is defined by the Klamath Mountains.

Results of the 2008 sensitivity study indicate that surficial units in the project area have limited exposure and consist of Quaternary alluvium in either river or stream deposits of the Modesto Formation. The Riverbank and Turlock Lake Formations underlie the project area and may be exposed during excavation.

Turlock Lake Formation

The Turlock Lake Formation varies in thickness from 165 to 720 feet and is divided into upper and lower units. The formation is mostly fine-grained sandstone alluvial and lake deposits of sand, silt, and clay that grade upward into coarse sand and occasionally pebbly sand or gravel. The upper unit contains the Corcoran Clay Member and Friant Pumice Member, about 615,000 years old. The Turlock Lake Formation overlies the North Merced Gravel and unconformably (strata that do not conform in position, dip, or strike to the older underlying rocks) underlies the Riverbank Formation.

The Turlock Lake Formation has yielded significant vertebrate fossils in the region. The Fairmead Landfill in Madera County has yielded a diverse fauna since

excavation started in 1993. While most of the fossils in the Turlock Lake Formation at the Fairmead Landfill have been recovered from depths of about 36 to 45 feet, they occur from as shallow as 19 to 22 feet to as deep as 59 feet, the maximum extent of excavation at the landfill.

Riverbank Formation

The Riverbank Formation varies in thickness from less than 3 feet to 260 feet and is divided into lower, middle, and upper units. These units are mainly sand containing some pebbles, gravel lenses, and interbedded fine sand and silt. The Riverbank Formation underlies the Modesto Formation. Vertebrate fossils have been recovered from the Riverbank Formation in the region, including at the Fairmead Landfill (at depths of 16 feet) and in Sacramento.

Modesto Formation

The Modesto Formation varies in thickness from less than 3 feet to 130 feet and is divided into upper and lower members separated by a buried soil. The upper member is mostly arkosic (containing feldspar and quartz) sediment; sediment in the lower member is of andesitic and metamorphic origin. These sediments range from massive sand to well-stratified silt and fine sand with occasional gravel. The lower portion is thicker, sometimes exceeding 80 feet; the upper portion is less than 32 feet thick. The Modesto Formation overlies the Riverbank Formation and underlies the Holocene post-Modesto Formation deposits. The Modesto Formation has low terraces, young alluvial fans, slight dissection, and a lack of significant soil development. The Modesto Formation has yielded vertebrate fossils in the region.

Records Search and Field Visit

A record search for fossil sites within the project area and Tulare County was done at the Los Angeles County Museum of Natural History and the University of California Museum of Paleontology at Berkeley as part of the 2008 sensitivity analysis.

The Los Angeles County Museum of Natural History did not indicate any fossil sites within the project area, but does show one fossil site in older Quaternary deposits in Tulare County. Site LACM 4087 is southeast of the project area, southwest of Lake Success and due east of Terra Bella; it produced a specimen of fossil mammoth, *Mammuthus*.

The University of California Museum database has no fossil sites within the project area, but has nine fossil sites in older Quaternary deposits in Tulare County.

Specimens of American mastodon, Columbian mammoth, elephants, horses, and camels were found east of Tulare and north of Springville.

California State University, Fresno paleontological staff did a literature review and field visit. Review of pertinent geologic maps and a literature search were done to identify stratigraphic units in the project area. A field check of the project area was done on July 10, 2008. The study area was defined in the 2008 sensitivity study as the limits of ground disturbance for the proposed project.

The 2008 sensitivity study concluded that the project area is considered moderately sensitive with respect to fossil resources. The project area is underlain by Quaternary strata that have produced vertebrate fossils in Tulare County and the surrounding region. Although Quaternary strata are typically ranked as low sensitivity for yielding scientifically significant fossil remains, because there are fossil sites near the project area to the east and southeast, the sensitivity rating in this case is designated as moderate. The sensitivity study also identified that the uppermost 6 feet of sediment in the project area are unlikely to yield significant fossil remains.

Environmental Consequences

Consistent with standard professional practice and Caltrans protocols, the proposed project's potential to result in significant damage or loss of paleontological resources was evaluated based on preliminary project design, in consideration of site geology, and the paleontological sensitivity of the geologic units potentially affected by the proposed project. The following analysis is applicable to both Alternative 1 and Alternative 2.

Excavation would be necessary to build and install elements of the project, including bridge foundations, traffic-signal poles, street-light poles, and conduit and utilities. The depth of excavation would vary from 5 to 16 feet. Excavation in areas containing significant paleontological resources has the potential to directly or indirectly destroy those resources.

The uppermost 6 feet of sediment in the project area is unlikely to yield important fossil remains. Therefore, this sediment layer does not require further attention during construction. Deeper excavations have a good chance of encountering vertebrate fossils because of nearby fossil sites in the same strata. The only excavations proposed deeper than 6 feet are those for traffic signal poles, having maximum depths of 16 feet and diameters of 3 feet. These excavations total less than 150 cubic feet of *in situ* sedimentary strata below the upper soil layers. This is not a substantial amount

of *in situ* sediment and, therefore, does not require further attention during construction. Mitigation would be warranted only if more substantial excavation of *in situ* sedimentary strata below the upper soil layers becomes necessary.

Impacts on paleontological resources are possible given the fossil sites previously identified in the project vicinity. However, impacts to important paleontological resources are less likely due to the disturbed nature of the deposits within the project area and the relatively shallow extent of ground disturbance.

No-Build Alternative

No impacts on paleontological resources would occur under the No-Build Alternative because there would be no construction.

Avoidance, Minimization, and/or Mitigation Measures

The project would not make deep excavations for stormwater basins or other major excavation, thereby avoiding and minimizing potential impacts to sensitive paleontological resources.

The following avoidance and minimization measures for the build alternatives would further reduce the potential for impacts to sensitive paleontological resources in the project area:

- There will be no major excavation deeper than 6 feet (deeper excavation for traffic signal poles would disturb only a small amount of material and is not considered major). If project construction plans change to include major deep excavation, or if paleontological resources are discovered at the job site, the Caltrans Paleontology Coordinator would be notified immediately and the project plans would be reevaluated by the Paleontology Coordinator and a Principal Paleontologist if necessary. Appropriate mitigation measures following Caltrans Standard Environmental Reference Chapter 8 – Paleontology would be implemented.
- Project construction personnel would comply with Caltrans Standard Specifications 14-7 Paleontological Resources.
- If paleontological resources are discovered at the job site, workers would not disturb the material and immediately stop all construction within a 60-foot radius of the discovery and protect the area.
- Workers would not take paleontological resources from the job site. Caltrans would investigate and modify the dimensions of the protected area if necessary.

Work would not resume within the specified radius of the discovery until authorized.

2.2.4 Hazardous Waste or Materials

Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

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

Other federal laws include the following:

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

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

Hazardous waste in California is regulated mainly under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Affected Environment

This section is summarized from the 2006 *Phase I Environmental Site Assessment*, the 2012 *Phase I Site Assessment Update*, and the August 2012 *Preliminary Site Investigation Asbestos-Containing Materials, Lead-Based Paint and Aerially Deposited Lead Survey*. The Phase I Environmental Site Assessment was completed for the project in July 2006 to determine the potential presence of hazardous waste/materials within the project limits. A Phase I Update was completed in January 2012 and included a review of the current and past land uses, a site visit, and a review of federal, state, and local records and permits.

The project area consists of vacant and agricultural land as well as two gas stations, a church, a fire station, residences, a former fertilizer warehouse and a park.

Asbestos-Containing Materials/Lead-Based Paint

Various structures such as bridges within the project alignment could contain asbestos-containing materials and/or lead-based paint. Demolition or renovation of these structures could potentially expose workers and the public to hazardous wastes or materials during demolition or removal of structural components such as railing shims, drain pipes, and expansion joints. In addition, both yellow and white traffic paint, striping, and markings on roadways could contain elevated concentrations of lead chromate and/or hexavalent chromium.

A Preliminary Site Investigation was conducted in June 2012 for asbestos-containing materials and lead-based paint. The survey included sampling of suspect materials from the Cartmill Overpass and paint chips from roadway striping on State Route 99, Cartmill Avenue, and Road 100 within the proposed project limits.

Aerially Deposited Lead

Because of the historic use of leaded fuel, aerially deposited lead can be found in the surface and near-surface soils along roadway shoulders and medians. Surface soils along urban and heavily traveled rural highways have high lead levels. Both State Route 99 and Cartmill Avenue are highly traveled roads and nearby soils likely contain lead. In January 2003, Caltrans did a preliminary study of surface soils along State Route 99 within the proposed project limits. The results revealed that non-hazardous levels of lead are present. In June 2012, soil sampling was done to

determine lead levels along Cartmill Avenue and Road 100 within the proposed project limits.

Potential Hazardous Waste Sites

Three potential hazardous waste sites exist within the proposed right-of-way: the former Chevron/Stanley's Food Mart, ARCO AM/PM, and Moore Aviation.

The former Chevron/Stanley's Food Mart site contains two 20,000-gallon gasoline aboveground storage tanks. No evidence of spills or staining was observed during the site check.

The ARCO AM/PM Mini Mart site at the northwest corner of State Route 99 and Cartmill Avenue contains two 20,000-gallon underground storage tanks. According to Tulare County Environmental Health Department records, no spills, releases, incidents, or violations associated with the underground storage tanks have been reported. No evidence of stains or spills was found during the site visit.

According to Department of Toxic Substances Control records, Moore Aviation, a former crop dusting/agricultural chemical sales facility on both sides of Cartmill Avenue, east of State Route 99, was improperly disposing of rinse water onsite. This facility was also a chemical and fertilizer warehouse. According to the Tulare County Environmental Health Department, the facility closed in 1989 and the hangar, the aboveground storage tanks, and the warehouse associated with this facility have been removed.

Investigative and remedial activities were done in the area of Moore Aviation from 2000 to 2010 to determine the extent of soil contamination. As a result of these studies, the Department of Toxic Substances Control issued a No Further Action determination status for the Moore Aviation facility in two separate letters dated August 5, 2008 and July 17, 2010. Because of the No Further Action determination and because concentrations of existing contaminants of concern are reported to be below regulatory agency screening levels, there is no potential impact from the Moore Aviation facility.

Environmental Consequences

Asbestos-Containing Materials/Lead-Based Paint

The project requires demolition of the Cartmill overcrossing bridge. The 2012 Preliminary Site Investigation indicated that none of the samples were found to contain asbestos. A total of seven samples of yellow and white striping within the

project area were tested for lead-based paint. Two of the seven had detectable levels of lead but did not exceed the Total Threshold Limit Concentration value of 1000 milligrams per kilogram. Further testing, using the Waste Extraction Test method to determine soluble lead values, was not completed.

Disturbing either yellow or white paint, striping, or pavement markings in the project area by grinding or sandblasting could expose workers and/or the general public to lead.

Aerially Deposited Lead

The 2012 Preliminary Site Investigation indicated nonhazardous levels of lead in surface soils along Cartmill Avenue and Road 100. The range of lead levels was non-detect to 36 milligrams per kilogram with an average lead concentration of 14.39 milligrams per kilogram. Based on these test results, lead concentrations were well below the regulatory value of 50 milligrams per kilogram (10 times the Soluble Threshold Limit Concentration of 5 milligrams per kilogram). Therefore, soil within the project limits would not require special handling or disposal. Soil could be reused onsite, disposed of, or relinquished to the contractor without restriction.

Potential Hazardous Waste Sites

The project would require the partial or full acquisition of two gasoline stations (Stanley's Food Mart and ARCO AM/PM).

Under Alternative 1, full acquisition of the ARCO AM/PM and partial acquisition (175 square feet) of Stanley's Food Mart would be necessary. Under Alternative 2, partial acquisition (2,665 square feet) of the ARCO AM/PM and partial acquisition (175 square feet) of Stanley's Food Mart would be necessary. Specifically, six parking spaces would be removed at the ARCO, and at Stanley's Food Mart the gas station sign would be moved. Alternative 1 would result in removal of underground storage tanks at the ARCO AM/PM. Partial acquisition of the ARCO AM/PM under Alternative 2 may lead to removal or relocation of underground storage tanks. Alternative 2 has been identified as the preferred alternative.

No-Build Alternative

Under the No-Build Alternative, there would be no construction and therefore no potential to expose workers, the public, or nearby land uses to hazardous materials as a result of construction activities.

Avoidance, Minimization, and/or Mitigation Measures

Lead-Based Paint and Aerially-Deposited Lead

Roadway striping within the project limits contains lead-based paint. If striping is removed by itself, separate from roadway pavement grindings, soluble lead testing for better hazardous waste characterization will be completed. Aerially-deposited lead is present in surface soils in nonhazardous levels. Special provisions would be included in the construction contract. Contractors would be required to prepare and work under a site-specific health and safety plan (and/or a Lead Compliance Plan) that would address worker and public safety when working with lead and other construction-related materials within the project right-of-way. Any abatement work will need appropriate licensing and training for proper handling and disposal of asbestos- and lead-containing materials.

Potential Hazardous Waste Sites

Further mitigation is not expected to be necessary at Moore Aviation because contamination has been reduced to near or below regulatory levels as a result of remediation. The Health and Safety Plan would address worker and public safety to minimize any potential exposure.

Mitigation is not expected at the gas stations. However, due to right-of-way acquisition, a site check may be required, specifically at the ARCO AM/PM, to determine if any contamination has occurred in areas to be impacted. If contamination is found, the responsible party(ies) will be required to define the lateral and vertical extent and perform the clean-up to regulatory standards. Any remedial activity would occur before acquiring the parcels. If necessary, tanks would be taken out of service, which includes removal of underground storage tanks, aboveground storage tanks, product lines and fuel pump islands.

2.2.5 Air Quality

Regulatory Setting

The Federal Clean Air Act as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (EPA) and California Air Resources Board, set standards for the quantity of pollutants that can be in the air.

At the federal level, these standards are called the 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 (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM, broken down for regulatory purposes into particles of 10 micrometers or smaller – PM₁₀ and particles of 2.5 micrometers or smaller – PM_{2.5}), lead (Pb), and sulfur dioxide (SO₂).

In addition, state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. The National Ambient Air Quality Standards and state standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both federal and state regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

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

Federal Clean Air Act Section 176(c) prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of Clean Air Act requirements related to the national standards.

“Transportation conformity” 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 standards, and only for the specific national standards that are or were violated.

U.S. EPA regulations at 40 Code of Federal Regulations 93 govern the conformity process. Regional-level conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and in some areas sulfur dioxide (SO₂). California has attainment or maintenance areas for all of these transportation-related “criteria pollutants” except for sulfur dioxide, and also has a nonattainment area for lead (Pb). However, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

Regional conformity is based on Regional Transportation Plans and Federal Transportation Improvement Programs that include all of the transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Programs). Regional Transportation Plan and Federal Transportation Improvement Program conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the State Implementation Plan are met.

If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration, and the Federal Transit Administration, make determinations that the Regional Transportation Plan and Federal Transportation Improvement Programs are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Programs must be modified until conformity is attained. If the design concept, scope, and “open to traffic” schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Programs, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is “nonattainment” or “maintenance” for carbon dioxide and/or particulate matter (PM₁₀ or PM_{2.5}). A region is nonattainment if one or more monitoring stations in the region measures violation of the relevant standard and the U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas, but subsequently meet the standard may be officially redesignated to attainment by the U.S. EPA and are then called maintenance areas.

Hot spot analysis is essentially the same, for technical purposes, as carbon dioxide or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the hot-spot-related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon dioxide or particulate matter violation is found in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s).

Affected Environment

The project sits within the San Joaquin Valley Air Basin, which consists of San Joaquin, Stanislaus, Merced, Madera, Tulare, Fresno, Kings, and Tulare counties and the western portion of Kern County. This air basin is mostly rural, with a few major urban areas.

The information presented in the May 2009 *State Route 99/Cartmill Avenue Interchange Improvements Project Draft Air Quality Technical Report* and December 2011 *Revised Supplement to Air Quality Technical Report for the State Route 99/Cartmill Avenue Interchange Improvements Project* is summarized below.

Climate and Topography

The project is set in Tulare County in the southern portion of the San Joaquin Valley, a broad, flat valley bounded by the Coast Ranges to the west, the Sierra Nevada to the east, and the Tehachapi Mountains to the south. The entire air basin is about 250 miles long from north to south and averages 35 miles wide.

The climate of the project area is characterized by hot, dry summers and cool, wet winters. From mid-April to mid-October, significant precipitation is unlikely and temperatures range from daily highs exceeding 100 degrees to evening lows in the 50s and low 60s. Winter conditions include occasional rainstorms interspersed with stagnant and sometimes foggy weather. Winter daytime temperatures average in the low 50s, and nighttime temperatures average in the upper 30s.

Wind flows up and down the valley because of the channeling effect of the mountains to either side of the valley. During summer, surface air movement is from the south, particularly during the afternoon hours. During winter, wind direction is more variable.

Prevailing wind patterns control the dispersion of local emissions. Tulare County experiences two types of inversion layers that affect air quality. The first type contributes to photochemical smog problems by confining pollution to a shallow layer near the ground. This occurs in summer, when sinking air forms a lid over the region. The second type of inversion occurs when the air near the ground cools while the air aloft remains warm. These inversions occur during winter nights and can cause localized air pollution hot spots near emission sources because of poor dispersion.

Existing Air Quality Conditions

Existing air quality conditions in the project area can be characterized according to the ambient air quality standards that the federal and state governments have established for various pollutants and the monitoring data collected in the region.

The closest air quality monitoring station is on Church Street in Visalia. Table 2.2.5-1 shows the Church Street monitoring data for 1- and 8-hour ozone, particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}). The Church Street station does not monitor for carbon monoxide. Consequently, the carbon monoxide monitoring data shown in Table 2.2.5-1 is from the North First Street station in Fresno. Pollutant concentrations are typically expressed in terms of parts per million (ppm) or micrograms per cubic meter (µg/m³).

Except for 1-hour carbon monoxide, at the time of writing, complete monitoring data for all pollutants and averaging periods was available for 2007, 2008, and 2009. The three most recent years of complete monitoring data available at the time of writing for 1-hour carbon monoxide were 2006, 2007, and 2008.

As shown in Table 2.2.5-1, the Church Street monitoring station experienced 139 exceedances of the national 8-hour ozone standard, no exceedances of the national 24-hour PM₁₀ standard, and 43 exceedances of the national 24-hour PM_{2.5} standard during the three-year monitoring period. The North First Street monitoring station experienced no exceedances of the national 8-hour and 1-hour carbon monoxide standards during the three-year monitoring period.

Table 2.2.5-1 also summarizes exceedances of state standards. As shown in the table, the Church Street monitoring station experienced 78 exceedances of the state 1-hour ozone standard, 218 exceedances of the 8-hour ozone standard, and 61 exceedances of the state 24-hour PM₁₀ standard during the three-year monitoring period. The North First Street monitoring station experienced no exceedances of the state 8-hour and 1-hour carbon monoxide standards during the three-year monitoring period.

Table 2.2.5-1 Air Quality Monitoring Data Summary for Tulare County

Pollutant Standards		2007	2008	2009
Carbon Monoxide (CO)^d				
	National ^b maximum 8-hour concentration (ppm)	2.60	2.34	2.07
	National ^b second-highest 8-hour concentration (ppm)	2.53	2.08	2.04
	California ^c maximum 8-hour concentration (ppm)	2.60	2.34	2.07
	California ^c second-highest 8-hour concentration (ppm)	2.53	2.08	2.04
	Maximum 1-hour concentration (ppm)	4.0	3.4	3.1
	Second-highest 1-hour concentration (ppm)	4.0	3.1	2.8

Pollutant Standards		2007	2008	2009
Number of days standard exceeded ^a				
	National Ambient Air Quality Standards, 8-hour standard (≥ 9 ppm)	0	0	0
	California Ambient Air Quality Standards, 8-hour standard (> 9.0 ppm)	0	0	0
	National Ambient Air Quality Standards, 1-hour standard (≥ 35 ppm)	0	0	0
	California Ambient Air Quality Standards, 1-hour standard (≥ 20 ppm)	0	0	0
Particulate Matter (PM10)^e				
	National ^b maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	98.0	103.9	92.1
	National ^b second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	88.0	91.0	87.1
	State ^c maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	99.0	104.7	93.2
	State ^c second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	91.0	91.6	91.7
	State annual average concentration ($\mu\text{g}/\text{m}^3$) ^f	42.3	47.1	41.8
Number of days standard exceeded ^a				
	National Ambient Air Quality Standards, 24-hour standard ($> 150 \mu\text{g}/\text{m}^3$) ^g	0	0	0
	California Ambient Air Quality Standards, 24-hour standard ($> 50 \mu\text{g}/\text{m}^3$) ^g	15	26	20
Particulate Matter (PM2.5)				
	National ^b maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	71.0	68.2	63.5
	National ^b second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	60.4	63.3	55.7
	State ^c maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	73.3	88.5	74.5
	State ^c second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	72.4	82.2	70.8
	National annual designation value ($\mu\text{g}/\text{m}^3$)	19.3	19.7	18.8
	National annual average concentration ($\mu\text{g}/\text{m}^3$)	20.3	19.8	16.2
	State annual designation value ($\mu\text{g}/\text{m}^3$)	23	23	23
	State annual average concentration ($\mu\text{g}/\text{m}^3$) ^f	22.5	19.8	16.6
Number of days standard exceeded ^a				
	National Ambient Air Quality Standards, 24-hour standard ($> 35 \mu\text{g}/\text{m}^3$)	18	17	8

Source: Revised Supplement to Air Quality Technical Report for the State Route 99/Cartmill Avenue Interchange Improvements Project, December 2011.

Note:

– = insufficient data available to determine the value.

Notes:

^a An exceedance is not necessarily a violation.

^b National statistics are based on standard conditions data. In addition, national statistics are based on samplers, using federal reference or equivalent methods.

^c State statistics are based on local conditions data, except in the Basin where statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

^d 1-hour CO concentration are provided for 2006 to 2008, the most recent data available.

^e Measurements usually are collected every 6 days.

^f State criteria for ensuring that the data are complete to calculate valid annual averages are more stringent than the national criteria.

^g Mathematical estimate of how many days the concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sensitive Receptors

Some receptors are considered more sensitive to air pollutants than others. The reasons for greater-than-average sensitivity include pre-existing health problems, proximity to emission sources, or duration of exposure to air pollutants. For California Environmental Quality Act purposes, a sensitive receptor is generically defined as a location where human populations—especially children, seniors, or sick persons—are found and where there is reasonable expectation of continuous human exposure according to the averaging period for the ambient air quality standard (e.g., 24 hours, 8 hours, 1 hour). Receptors typically include residences, hospitals, and schools.

Land uses near the interchange include residential and scattered commercial uses southwest of the interchange. Agricultural fields are northeast, northwest, and southeast of the interchange.

Environmental Consequences

This section discusses the results of the air quality analysis, including the modeled construction and operational emissions expected to occur with project implementation and the project's conformity with transportation planning documents.

Implementation of either Alternative 1 or Alternative 2 would generate construction-related and operational emissions. A brief description of the methodology used to analyze potential air quality impacts from implementation of the build alternatives is provided along with the analysis in the sections below.

Carbon Monoxide Concentrations

As shown in Table 2.2.5-2, the project is in a designated attainment area for the 1- and 8-hour California carbon monoxide standards and an attainment/unclassified area for the 1- and 8-hour national carbon monoxide standards. Therefore, in accordance with Caltrans' *Initial Study/Environmental Assessment Annotated Outline*, no further project-level conformity analysis for carbon monoxide is required.

Operational Emissions

Operation of each project alternative would generate emissions of ozone precursors (ROG and NO_x), carbon monoxide, and PM₁₀. Caltrans' CT-EMFAC model was used to generate Tulare County vehicle emission factors. CT-EMFAC was then used to estimate emissions for each scenario using vehicle miles traveled for peak and off-peak hours and the percentage of vehicle miles traveled by speed category. Information provided by the project traffic consultant was used to determine daily vehicle miles traveled and percentage of vehicle miles traveled within each speed category.

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Table 2.2.5-2 State and Federal Air Quality Standards and Attainment Status of Tulare County

Pollutant	Symbol	Average Time	Standard ^a		Violation Criteria		Tulare County Attainment Status		Health and Atmospheric Effects	Typical Sources
			California	National	California	National	California	National		
Ozone ^b	O ₃	1 hour	0.09 ppm 180 µ/m ³	NA ^c	If exceeded	NA	Severe Nonattainment	Not applicable	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases and nitrogen oxides (NO _x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically-produced reactive organic gases may also contribute.
		8 hours	0.07 ppm 137 µ/m ³	0.075 ppm ^d 147 µ/m ³	If exceeded	If fourth-highest 8-hour concentration in a year, averaged over 3 years, is greater than the standard	Nonattainment	Extreme nonattainment		
Carbon monoxide	CO	8 hours	9 ppm ^e 10,000 µ/m ³	9 ppm 10,000 µ/m ³	If exceeded	If exceeded on more than 1 day per year	Attainment	Attainment/ unclassified	Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
		1 hour	20 ppm 23,000 µ/m ³	35 ppm 40,000 µ/m ³	If exceeded	If exceeded on more than 1 day per year	Attainment	Attainment/ unclassified		
(Lake Tahoe only)		8 hours	6 ppm 7,000 µ/m ³	NA	If equaled or exceeded	NA	Not applicable	Not applicable		
Nitrogen dioxide	NO ₂	Annual arithmetic mean	0.03 ppm 57 µ/m ³	0.053 ppm 100 µ/m ³	If exceeded	If exceeded on more than 1 day per year	Attainment	Attainment/ unclassified	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources, refineries, and industrial operations.
		1 hour	0.18 ppm 339 µ/m ³	0.1 ppm ^f 188 µ/m ³	If exceeded	If the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area is exceeded	Attainment	Not applicable		
Sulfur dioxide	SO ₂	24 hour	0.04 ppm 105 µ/m ³	NA	If exceeded	NA	Attainment	Not applicable	Irritates respiratory tract and injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing.
		3 Hour	Not applicable	0.5 ppm ^g	Not applicable	NA	Not applicable	Not applicable		
		1 hour	0.25 ppm 655 µ/m ³	0.075 ppm ^h 196 µ/m ³	If exceeded	If exceeded more than 1 day per year	Attainment	Attainment/ unclassified		

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

Pollutant	Symbol	Average Time	Standard ^a		Violation Criteria		Tulare County Attainment Status		Health and Atmospheric Effects	Typical Sources
			California	National	California	National	California	National		
Hydrogen sulfide	H ₂ S	1 hour	0.03 ppm 42 µ/m ³	NA	If equaled or exceeded	NA	Unclassified	Not applicable		
Vinyl chloride ⁱ	C ₂ H ₃ Cl	24 hours	0.01 ppm 26 µ/m ³	NA	If equaled or exceeded	NA	No information available	Not applicable		
Sulfate particles	SO ₄	24 hours	25 µ/m ³	NA	If equaled or exceeded	NA	Attainment	Not applicable		
Lead particles ⁱ	Pb	Calendar quarter	Not applicable	1.5 µ/m ³	NA	If exceeded more than 1 day per year	Not applicable	Attainment/ unclassified	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like battery production and smelters. Past: lead paint, leaded gasoline. Moderate to high levels of aerially deposited lead from gasoline may still be present in soils along major roads and can be a problem if large amounts of soil are disturbed.
		30-day average	1.5 µ/m ³	NA	If equaled or exceeded	NA	Attainment	Not applicable		
		Rolling 3-month average	Not applicable	0.15 µ/m ³	NA	If exceeded more than 1 day per year	Not applicable	Attainment/ unclassified		
Respirable Particulate Matter ^b	PM10	Annual arithmetic mean	20 µ/m ³	NA ^b	If exceeded	NA	Nonattainment	Not applicable	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM10.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
		24 hours	50 µ/m ³	150 µ/m ³	If exceeded	If exceeded more than 1 day per year	Nonattainment	Attainment/ unclassified		
Fine Particulate Matter ^b	PM2.5	Annual arithmetic mean	12 µ/m ³	15 µ/m ³	If exceeded	If exceeded more than 1 day per year	Nonattainment	Nonattainment	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered a toxic air contaminant – is in the PM2.5 size range. Many aerosol and solid compounds are part of PM2.5.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO _x , sulfur oxides (SO _x), ammonia, and reactive organic gases.
		24 hours	Not applicable	35 µ/m ³	NA	If less than 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard	Not applicable	Nonattainment		

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

Notes for Table 2.2.5-2

Sources: Revised Supplement to Air Quality Technical Report for the State Route 99/Cartmill Avenue Interchange Improvements Project, December 2011 .

Based on the California ARB Air Quality Standards chart (<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>).

Notes: National standards shown are the primary (public health) standards. All equivalent units are based on a reference temperature of 25° C and a reference pressure of 760 Torr.

PM10 = particulate matter less than 10 microns in diameter.

PM2.5 = particulate matter less than 2.5 microns in diameter.

ppm = parts per million by volume, or micromoles of pollutant per mole of gas.

μm^3 = micrograms per cubic meter.

NA = not applicable.

^a State standards are “not to exceed” unless stated otherwise. Federal standards are “not to exceed more than once a year” or as noted above.

^b Annual PM₁₀ NAAQS revoked October 2006; was 50 $\mu\text{g}/\text{m}^3$. 24-hr. PM_{2.5} NAAQS tightened October 2006; was 65 $\mu\text{g}/\text{m}^3$. In 9/09 U.S. EPA began reconsidering the PM_{2.5} NAAQS; the 2006 action was partially vacated by a court decision.

^c Prior to 6/2005, the 1-hour NAAQS was 0.12 ppm. The 1-hour NAAQS is still used only in 8-hour ozone early action compact areas, of which there are none in California. However, emission budgets for 1-hour ozone may still be in use in some areas where 8-hour ozone emission budgets have not been developed.

^d As of 9/16/09, U.S. EPA is reconsidering the 2008 8-hour ozone NAAQS (0.075 ppm); U.S. EPA is expected to tighten the primary NAAQS to somewhere in the range of 60-70 ppb and to add a secondary NAAQS. U.S. EPA plans to finalize reconsideration and promulgate a revised standard by August 2010.

^e Rounding to an integer value is not allowed for the State 8-hour CO standard. Violation occurs at or above 9.05 ppm. Violation of the Federal standard occurs at 9.5 ppm due to integer rounding.

^f Final 1-hour NO₂ NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial nonattainment area designations should occur in 2012 with conformity requirements effective in 2013. Project-level hot spot analysis requirements, while not yet required for conformity purposes, are expected.

^g Refers to a secondary standard only.

^h U.S. EPA finalized a 1-hour SO₂ standard of 75 ppb in June 2010.

ⁱ The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM₁₀ and, in larger proportion, PM_{2.5}. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and PM_{2.5} as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong. Lead NAAQS are not required to be considered in Transportation Conformity analysis.

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Table 2.2.5-3 summarizes operational emissions for Alternatives 1 and 2. As shown in the table, operational emissions of all criteria pollutants in the design-year (2033) are expected to increase slightly when compared with no-project conditions. Although criteria pollutant emissions are expected to increase slightly in 2033, the increase in each criteria pollutant amounts to less than 1 ton per year. This minor increase would not cause or contribute to violations of state or national ambient air quality standards.

Table 2.2.5-3 Operational Emissions

Scenario	Total VMT (per year)	ROG (tons/year)	NO _x (tons/year)	CO (tons/year)	PM ₁₀ (tons/year)	PM _{2.5} (tons/year)	CO ₂ (metric tons/year)
Existing Conditions	3,324,240,785	2,236.7	6,809.5	28,643.0	175.4	161.9	1,499,270.5
2033 No Project	6,573,788,700	631.0	1,364.6	6,622.5	129.1	119.9	2,990,915.9
2033 With Project (Alts. 1 and 2)	6,571,840,695	631.4	1,364.7	6,623.6	129.1	120.0	2,991,655.4
Net Change 2033 With Project vs. 2033 No Project	(1,948,005)	0.4	0.1	1.1	0.1	0.1	739.5
Net Change 2033 With Project vs. Existing Conditions	3,247,599,910	(1,605.2)	(5,444.8)	(22,019.4)	(46.3)	(41.9)	1,492,384.9

Source: State Route 99/Cartmill Avenue Interchange Improvements Project Air Quality Technical Report, May 2009.
Note: Parentheses indicate negative numbers.

Mobile Source Air Toxic Emissions

Analysis of impacts resulting from emissions of mobile source air toxics was done in accordance with the *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* and interim California-specific guidance for mobile source air toxic analysis provided by Caltrans. At this time, the California-specific guidance is identical to the Federal Highway Administration’s guidance except for California-specific criteria for performing qualitative and quantitative analysis. The California-specific criteria are found in the California Air Resources Board’s *Air Quality and Land Use Handbook: A Community Health Perspective*.

Air toxics analysis is an emerging area of research. Currently, limited tools and techniques are available for assessing project-specific health impacts from mobile

source air toxics because no established criteria exist for determining when mobile source air toxics emissions should be considered a significant issue.

To comply with Council on Environmental Quality regulations (40 Code of Federal Regulations 1502.22[b]) regarding incomplete or unavailable information, Appendix F includes a discussion on how air toxics analysis is an emerging field and current scientific techniques, tools, and data are not sufficient to accurately estimate human health impacts that would result from a transportation project in a way that would be useful to decision-makers. Also, to comply with 40 Code of Federal Regulations 1502.22(b), Appendix F provides a summary of current studies on the health impacts of mobile source air toxics.

Using the Federal Highway Administration's 2009 guidance update and the California-specific guidance provided by Caltrans and the California Air Resources Board, it was determined that the proposed project would have low potential to result in mobile source air toxics impacts. This determination was based on the fact that the highest projected average daily traffic volume on State Route 99 under design-year (2030) conditions is 113,080, well below the Federal Highway Administration's 140,000 average daily traffic volume criterion. In addition, State Route 99 average daily traffic would not change with implementation of either Alternative 1 or Alternative 2.

In California, the corresponding average daily traffic criteria under which a project is considered to have low potential mobile source toxic impacts is 100,000 on urban non-freeways and 50,000 on rural non-freeways. Considering that projected average daily traffic on Cartmill Avenue for 2030 No-Build Alternative, Alternative 1, and Alternative 2 conditions is 49,800, the project would have a low potential to result in mobile source air toxics impacts.

Under the third California-specific criterion (citing a sensitive land use within 500 to 1,000 feet of a freeway), although there is a residential area within 500 feet east of State Route 99 south of Cartmill Avenue, there would be no changes to State Route 99 traffic volumes with implementation of either build alternative, when compared with the No-Build Alternative. Therefore, there would be no change to potential mobile source air toxic impacts under this criterion. Because the project is considered to have low potential to result in mobile source air toxic impacts, a quantitative analysis is not required and a qualitative assessment of potential impacts is done below.

For each build alternative, the amount of mobile source air toxics emitted would be proportional to the vehicle miles traveled, assuming that other variables, such as fleet mix, are the same for each alternative, which they are. The vehicle miles traveled estimated for the design year under both Alternative 1 and Alternative 2 are 1,948,005 miles lower than under the No-Build Alternative. This decrease in vehicle miles traveled means mobile source air toxics under the build alternatives would likely be lower in the study area than they would be under the No-Build Alternative.

Because the estimated vehicle miles traveled under each of the build alternatives are the same, it is expected there would be no appreciable difference in overall mobile source air toxic emissions among the build alternatives. In addition, emissions are virtually certain to be lower than current levels in the design year as a result of the federal Environmental Protection Agency's national control programs that are projected to reduce annual mobile source air toxic emissions by 72 percent from 1999 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, increases in vehicle miles traveled, and local control measures. However, the magnitude of the Environmental Protection Agency-projected reductions is so great (even after accounting for increases in vehicle miles traveled) that mobile source air toxics emissions in the study area are likely to be lower in the future than they are today.

Construction Emissions

Construction of the project would occur in four stages. Stage 2 would include the full closure of the Cartmill overcrossing and is the only stage that would require temporary detours. It is estimated the closure and detours would last about 150 working days. Two detour options are under consideration. If these closures and associated detours cause high traffic volumes to be delayed at project intersections, high concentrations of pollutants (hot spots) could occur. Traffic operations are quantified through the determination of level of service.

Level of service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. Refer to Figures 1-3 and 1-4, which illustrate criteria for levels of service for intersections.

Levels of service resulting from the proposed detours are analyzed below to determine if the detours would result in pollutant hot spots during closure of the Cartmill Avenue overcrossing. As shown in Figures 1-3 and 1-4, level of service C

represents minimal delays. Therefore, if intersections would operate at level of service C or D (for city intersections) or better while construction detours are in place, it was assumed that no pollutant hot spot would occur.

The intersection peak-hour traffic operational analysis for Detour Option 1 concluded that all study intersections are projected to operate within acceptable level-of-service standards during both the morning and evening peak hours. In addition, the peak-hour traffic operations analysis for the State Route 99 mainline and ramp junctions revealed that all State Route 99 mainline segments and ramp junctions (merge/diverge) are projected to operate at level of service C or better. Therefore, pollutant hot spots are not expected to occur during construction.

At project intersections, the peak hour traffic operations analysis for Detour Option 2 indicated that all study intersections, except one, are projected to operate within acceptable level-of-service standards in the morning and evening peak hours. The Avenue 264/State Route 99 southbound ramps intersection is expected to experience level of service F on the southbound off-ramp approach to the intersection during the evening peak hour. This condition would exist only while the Cartmill Avenue overcrossing is closed, during Stage 2 of construction, which would last for about 150 working days. This intersection is projected to operate at level of service B after the Cartmill Avenue overcrossing is re-opened following the completion of Stage 2 of construction.

Because the Avenue 264/State Route 99 southbound ramps intersection is expected to experience level of service F on the southbound off-ramp approach to the intersection during the evening peak hour, operations at this intersection could result in hot spots during construction.

To comply with San Joaquin Valley Air Pollution Control District's Regulation VIII and Rule 9510, construction emissions of reactive organic gases, NO_x, carbon monoxide, PM₁₀, PM_{2.5}, and carbon dioxide were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (Version 6.3.2) and construction data provided by the project engineer. Construction activities would be the same for both alternatives, except for the duration of Stage 3, which lasts 40 days under Alternative 1 and 30 days under Alternative 2. The modeling accounts for the longer construction duration as a worst-case-scenario; therefore, estimated emissions are not separated by alternative. The results of the modeling are summarized in Table 2.2.5-4.

**Table 2.2.5-4 Estimated Emissions from Project Construction
(tons/year)**

Construction Phases	ROG	CO	NO _x	PM ₁₀			PM _{2.5}			CO ₂ ^a
				Total	Exhaust	Dust	Total	Exhaust	Dust	
Grubbing/ Land Clearing	0.05	0.49	0.23	0.45	0.01	0.44	0.10	0.01	0.09	71.04
Grading/ Excavation	2.89	31.71	17.16	3.40	0.65	2.75	1.12	0.55	0.57	2,378.79
Drainage/ Utilities/ Sub-Grade	0.24	1.89	1.42	0.40	0.07	0.33	0.12	0.05	0.07	313.91
Paving	0.37	1.87	2.72	0.12	0.12	0.00	0.10	0.10	0.00	423.39
Total (tons/ construction project)	3.54	35.97	21.54	4.36	0.84	3.52	1.44	0.71	0.73	3,187.13

Source: Revised Supplement to Air Quality Technical Report for the State Route 99/Cartmill Avenue Interchange Improvements Project, December 2011.

^a CO₂ estimates are presented in metric tons/year.

As shown in Table 2.2.5-4, project construction would result in emissions of NO_x in excess of 2 tons per year. The project applicant would be required to reduce NO_x emissions by 20 percent and PM₁₀ emissions by 45 percent, in accordance with the San Joaquin Air Pollution Control District's Rule 9510. Compliance with this requirement equates to reductions in NO_x and PM₁₀ by 4.31 tons per year and 1.96 tons per year, respectively.

Avoidance, Minimization, and/or Mitigation Measures

This section describes measures to reduce construction emissions expected to occur with implementation of the build alternatives.

If Detour Option 2 is Chosen, an All-Way Stop Control will be Installed

Operations at the Avenue 264/State Route 99 southbound ramps intersection would be improved to level of service C or better with implementation of this measure.

Implement Dust Control Plan to Comply with San Joaquin Valley Air Pollution Control District's Regulation VIII

Implementation of a dust control plan under the San Joaquin Air Pollution Control District's Regulation VIII is considered sufficient to reduce construction emissions of fugitive dust by 45 percent or more.

Reduce Construction Exhaust Emissions of NO_x to Comply with San Joaquin Valley Air Pollution Control District's Rule 9510

Feasible reduction of construction exhaust emissions of NO_x to comply with Rule 9510 includes the use of construction equipment powered by engines that meet, at a

minimum, Tier II emission standards as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.

The San Joaquin Air Pollution Control District recommends incorporating, as a condition of project approval, a requirement that off-road construction equipment used on the site achieves fleet average emissions equal to or less than the Tier II emissions standard of 4.8 grams of NO_x/horsepower-hour. This can be achieved through any combination of uncontrolled engines and engines complying with the minimum of Tier II emission standards.

Another option for construction emission exhaust reduction is entering into a voluntary emission reduction agreement between the project applicant and the San Joaquin Air Pollution Control District. The San Joaquin Air Pollution Control District recommends as a condition of approval that applicants demonstrate having successfully entered into an emission reduction agreement with the district before the issuance of the first building permit. San Joaquin Air Pollution Control District staff members are available to meet with project applicants to discuss voluntary emission reduction agreements for specific projects.

Implement California Department of Transportation Standard Specifications, Sections 14-9.01 and 14.02

To control the generation of construction-related emissions, the project applicant will follow Caltrans' Standard Specifications, Sections 14-9.01 and 14.02. A description of Caltrans' Standard Specifications is provided below:

- Section 14-9.01, Air Pollution Control:
 - Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in California Government Code, Section 11017.
 - Do not burn material to be disposed of.
- Section 14.02, Dust Control:
 - Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01.
 - Apply water under Section 17, Watering.

- Apply dust palliative under Section 18, Dust Palliative.
- If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work will be paid for as extra work as specified in Section 4-1.03D, *Extra Work*.

2.2.6 Noise

Regulatory Setting

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

California Environmental Quality Act

California Environmental Quality Act 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 the California Environmental Quality Act, then act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

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 contain noise abatement criteria (also known as NAC) that are used to determine when a noise impact would occur.

The noise abatement criteria differ depending on the type of land use under analysis. For example, the noise abatement criterion for residences (67 dBA) is lower than the noise abatement criterion for commercial areas (72 dBA). Table 2.2.6-1 lists the noise abatement criteria for use in the National Environmental Policy Act–23 Code of Federal Regulations 772 analysis.

Table 2.2.6-1 Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, dBA L _{eq} (h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	–	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: 23CFR772.

Table 2.2.6-2 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA 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 dBA of the noise abatement criteria.

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

The Caltrans *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence. Feasibility of noise abatement is basically an engineering concern. A minimum 5-dBA 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.

Table 2.2.6-2 Common Activities and Associated Noise Levels

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) Commercial Area	70	Vacuum Cleaner at 3 m (10 ft) 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

Because there is no federal funding associated with the project, 23 Code of Federal Regulations 772 does not apply. Therefore, this section focuses on impacts under California Environmental Quality Act.

Affected Environment

This information is based on the December 2011 *State Route 99/Cartmill Avenue Interchange Improvements, Noise Study Report*. The following terms are used in this discussion:

- **Sound:** A vibratory disturbance created by a vibrating object that when transmitted by pressure waves through air is capable of being detected by the human ear.
- **Noise:** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB):** A measure of sound.
- **A-Weighted Decibel (dBA):** A weighted sound level in dB that approximates the frequency response of the human ear.
- **Equivalent Sound Level (L_{eq}):** The equivalent steady state sound level that in a stated period of time contains the same acoustical energy. The 1-hour L_{eq} sound level is used by Caltrans to determine traffic noise impacts.

In typical noisy environments, changes in noise of 1 to 2 dB are generally not detectable. People begin to detect sound level increases of 3 dB in typical noisy environments. A 5-dB increase is perceived as a distinctly noticeable increase, and a 10-dB increase is perceived as a doubling of loudness. Therefore, a doubling of sound energy (such as doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would be barely detectable by the average human ear.

The California Environmental Quality Act contains general guidelines to evaluate the significance of impacts of environmental noise attributable to a proposed project. The State of California Environmental Quality Act Guidelines state that a project would normally have a significant impact on the environment if it would result in any of the following applicable conditions:

- Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project.

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

In addition, the project is considered to result in a significant traffic noise impact if it would result in a substantial increase in noise as defined in the Caltrans *Traffic Noise Analysis Protocol* (a 12-dB increase between existing and design year plus-project conditions).

Existing Land Uses

Noise-sensitive receivers in the project area include residences, hotels, parks, and churches with outdoor land use areas. Most of these receptors are west of State Route 99. There are also commercial uses next to State Route 99 and Cartmill Avenue. Commercial land uses generally are not considered noise-sensitive, and none in the project vicinity have associated outdoor use areas. Much of the project area is surrounded by agricultural uses. None of these uses are considered to be noise-sensitive.

A number of soundwalls (or privacy walls that function as soundwalls) exist along State Route 99 between the highway and residential areas. An existing privacy wall stands in front of the mobile home park along Cartmill Avenue frontage. The sensitive noise receptors and existing soundwalls are shown in Figure 2.2.6-1 and described in Table 2.2.6-3. Receptor locations are identified as measurement sites or prediction (modeling) sites. Measurement sites include a long-term site (identified with LT) and short-term sites (identified with ST). Long-term measurements involved continuous measurements done over a 24-hour period; short-term measurements were 10 minutes long. Noise prediction sites are identified with an “R.” No new soundwalls are proposed as part of this project.

Existing Noise Conditions

Table 2.2.6-3 lists each receptor location evaluated and identifies the land use, address, and height of existing walls (if any) associated with each receptor. The table shows traffic noise levels under existing conditions and future conditions with and without the project. These future conditions are discussed in the next section.

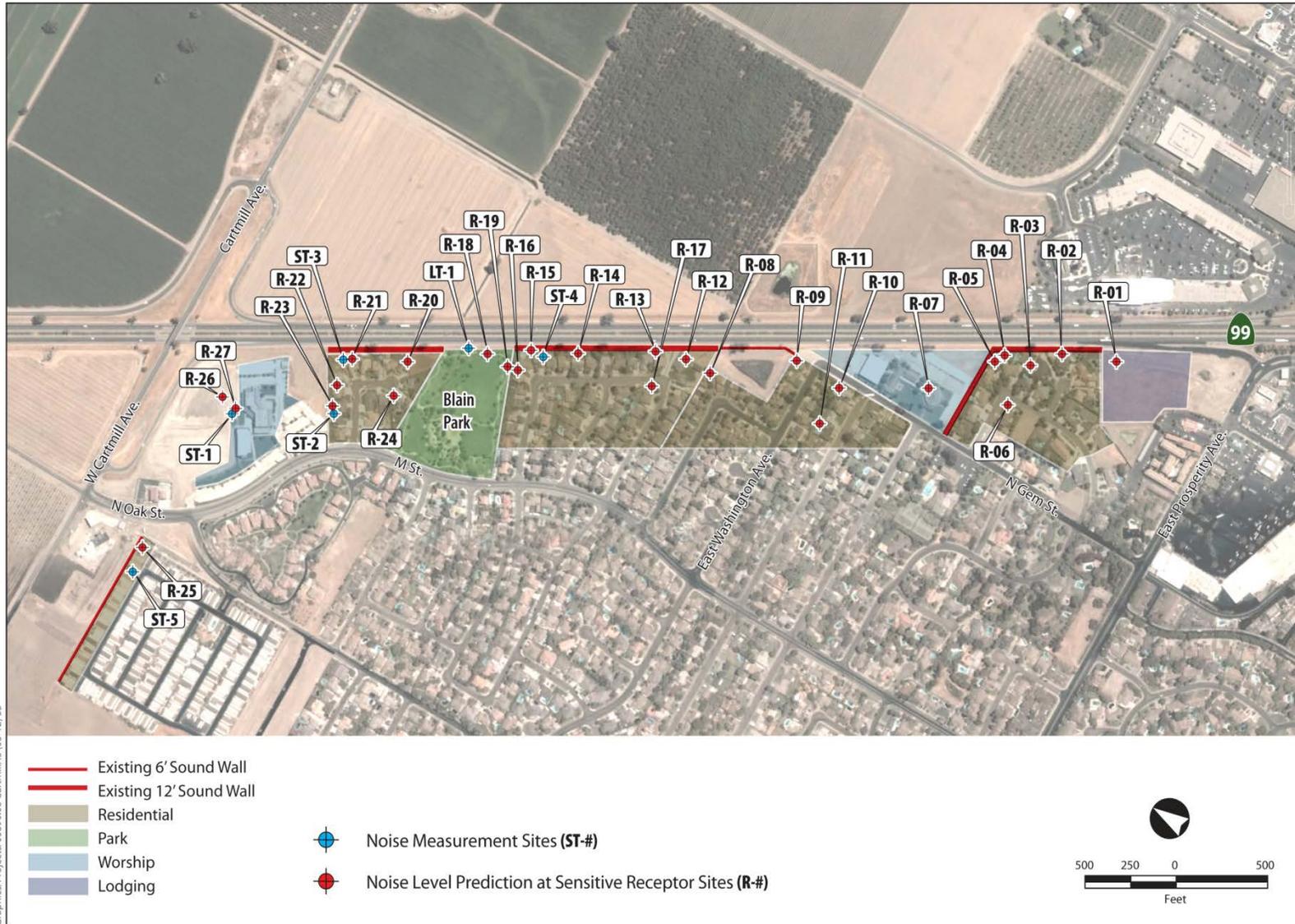


Figure 2.2.6-1 Noise Measurement and Prediction Sites

Table 2.2.6-3 Existing and Design-Year Conditions With and Without Project

Receiver	Land Use	Location	Existing Wall Height, feet	Existing dBA	Open to Traffic (Year 2013) dBA	Open to Traffic Increase re Existing Case dB	Future (Year 2033) No-Build dBA	No-Build Increase re Existing Case dB	Future (Year 2033) Project Alt. 1 dBA	Project Alt. 1 Increase re Existing dB	Project Alt. 1 Increase re Future No-Project dB	Future (Year 2033) Project Alt. 2 dBA	Project Alt. 2 Increase re Existing dB	Project Alt. 2 Increase re Future No-Project dB
R01	Lodging	1500 Cherry Court	–	73	75	+ 2	77	+ 4	77	+ 4	0	77	+ 4	0
R02	Residential	746 Kirk Court	12	65	67	+ 2	69	+ 4	69	+ 4	0	69	+ 4	0
R03	Residential	724 Kirk Court	12	64	66	+ 2	68	+ 4	68	+ 4	0	68	+ 4	0
R04	Residential	697 Chevy Chase Dr	12	65	67	+ 2	69	+ 4	69	+ 4	0	69	+ 4	0
R05	Residential	654 Callie Ave	12	64	66	+ 2	68	+ 4	68	+ 4	0	68	+ 4	0
R06	Residential	635 Callie Ave E	12	61	62	+ 1	64	+ 3	64	+ 3	0	64	+ 3	0
R07	Church	Tulare Community Church, 820 Gem St N	–	71	73	+ 2	74	+ 3	75	+ 4	+ 1	75	+ 4	+ 1
R08	Residential	1994 Adams N	6	67	68	+ 1	70	+ 3	71	+ 4	+ 1	71	+ 4	+ 1
R09	Residential	598 Washington Ave	6	73	75	+ 2	77	+ 4	77	+ 4	0	77	+ 4	0
R10	Residential	1855 Gem St	–	69	71	+ 2	73	+ 4	73	+ 4	0	73	+ 4	0
R11	Residential	556 Sandra Ave	–	66	67	+ 1	69	+ 3	70	+ 4	+ 1	70	+ 4	+ 1
R12	Residential	2000 Adams St	12	67	68	+ 1	70	+ 3	70	+ 3	0	70	+ 3	0
R13	Residential	2008 Adams St	12	67	69	+ 2	70	+ 3	70	+ 3	0	70	+ 3	0
R14	Residential	2140 Adams St	12	67	69	+ 2	70	+ 3	71	+ 4	+ 1	71	+ 4	+ 1
R15	Residential	2182 Adams St	12	66	68	+ 2	70	+ 4	70	+ 4	0	70	+ 4	0
R16	Residential	948 Wilson	12	66	68	+ 2	70	+ 4	70	+ 4	0	70	+ 4	0
R17	Residential	480 Jackson Ave E	12	66	68	+ 2	70	+ 4	70	+ 4	0	70	+ 4	0
R18	Park	Blain Park	–	78	80	+ 2	81	+ 3	82	+ 4	+ 1	82	+ 4	+ 1
R19	Park	Blain Park	–	73	74	+ 1	76	+ 3	77	+ 4	+ 1	77	+ 4	+ 1
R20	Residential	490 E Congressional Court	12	66	68	+ 2	70	+ 4	70	+ 4	0	70	+ 4	0
R21	Residential	462 E Congressional Court	12	66	68	+ 2	69	+ 3	70	+ 4	+ 1	70	+ 4	+ 1
R22	Residential	436 E Congressional Court	12	66	67	+ 1	69	+ 3	69	+ 3	0	69	+ 3	0
R23	Residential	420 E Congressional Court	12	64	66	+ 2	68	+ 4	68	+ 4	0	68	+ 4	0
R24	Residential	487 E Congressional Court	12	65	66	+ 1	68	+ 3	68	+ 3	0	68	+ 3	0
R25	Residential	2459 Oaks St N	6	56	59	+ 3	61	+ 5	61	+ 5	0	60	+ 4	- 1
R26	Church	Bethel Assembly of God, 2516 M St N	–	68	70	+ 2	72	+ 4	73	+ 5	+ 1	67	- 1	- 5
R27	Church	Bethel Assembly of God, 516 M St N	–	66	68	+ 2	69	+ 3	70	+ 4	+ 1	64	- 2	- 5

Environmental Consequences

Traffic Noise

Table 2.2.6-3 summarizes the traffic noise modeling results for existing conditions and the following future conditions:

- Open to Traffic (year 2013)
- Future No-Build (year 2033)
- Future Project Alternative 1 (year 2033)
- Future Project Alternative 2 (year 2033)

As discussed above, there is no federal funding associated with the project. As such the requirements of 23 Code of Federal Regulations 772 do not directly apply. The focus of this section is on impacts evaluated under the requirements of California Environmental Quality Act. The increase in traffic noise caused by a project is the primary factor considered by Caltrans in assessing the significance of noise impacts under California Environmental Quality Act. The other key factor is the modeled absolute future noise. To facilitate the California Environmental Quality Act assessment, Table 2.2.6-3 shows the absolute predicted noise levels and the predicted increase in traffic noise between each future condition and existing baseline conditions.

All of the predicted increases in traffic noise are 5 dB or less. Given the context of this project and the intensity of traffic noise effects, none of the traffic noise increases under the Open to Traffic, No-Build Alternative, Alternative 1, and Alternative 2 are considered to be substantial. These increases are also well below the definition of “substantial” stated in the Caltrans noise protocol (12 dB increase).

Construction Noise

Table 2.2.6-4 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 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.2.6-4 Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy trucks	88
Backhoe	80
Pneumatic tools	85
Concrete pump	82

Source: Federal Transit Administration.

Construction noise would temporarily and intermittently increase noise levels in the project area. However, because existing traffic noise would generally dominate the noise environment and because compliance with Section 14-8.02 Noise Control in the Caltrans Standards Specifications (discussed below) would be required, no adverse noise effects from construction are anticipated.

As part of the proposed reconstruction, the existing Cartmill Avenue overcrossing at State Route 99 would be demolished and replaced with a new structure. The Cartmill Avenue overcrossing at State Route 99 would be closed completely during construction of the new structure. This is expected to take about 10 months beginning in 2013. Two detour options have been considered, and the effect that each of the detour options would have on traffic have been evaluated by the project traffic engineer.

Except for Avenue 264 west of Hillman Street, increases in traffic noise along roadways in the project area are expected to be less than 3 dB, which would be barely perceptible. Along Avenue 264 west of Hillman Street, traffic noise increases are predicted to be in the range of 3 to 5 dB, which may be noticeable at several rural residences in this area. However, because these increases in traffic noise would be temporary and not substantial as defined in the noise protocol, no adverse traffic noise effects are expected to occur as a result of the temporary closure of the Cartmill Avenue overcrossing.

No-Build Alternative

The No-Build Alternative would not result in any construction-related noise effects. Noise modeling indicates that under No-Build conditions traffic noise levels will increase by as much as 5 dB by 2033 relative to existing conditions at all but two locations (R06 and R25). Increases in traffic noise levels under the No-Build Alternative reflect increases in traffic volumes predicted to result from planned growth and anticipated population increases and would take place regardless of whether the proposed project is

constructed. In three locations, (R25, R26, and R27) noise levels are projected to be higher under the No-Build Alternative than under either build alternative. This is due to reconfiguration of the interchange that will reroute traffic lanes farther away from these locations or reduce traffic volumes on existing roads.

Avoidance, Minimization, and/or Noise Abatement

With regard to traffic noise, no avoidance, minimization, and/or noise abatement measures are required. With regard to construction noise, measures indicated in Section 14-8.02 Noise Control in the Caltrans Standards Specifications would be implemented:

- Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- 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.

No additional avoidance, minimization, and/or noise abatement measures are required for traffic or construction noise.

2.3 Biological Environment

The biological study area consists of the project area and a 250-foot-wide buffer area (see Figure 2.3-1). The project area (the construction footprint) consists of the area next to the State Route 99/Cartmill Avenue interchange where changes and/or replacement of existing interchange components would be done. The buffer area consists of the area next to the project area (within 250 feet) where special-status species and other sensitive biological resources could be affected.

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 U.S. Code 1344) is the main law regulating wetlands and surface waters.

The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States (U.S.), including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving)

vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

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

The U.S. Army Corps of Engineers issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of General permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers Standard permits. For Standard permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations Part 230) and whether permit approval is in the public interest.

The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have a less adverse effect. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this order states that a federal agency, such as the Federal Highway Administration and or Caltrans, as assigned, cannot undertake or provide assistance for new construction

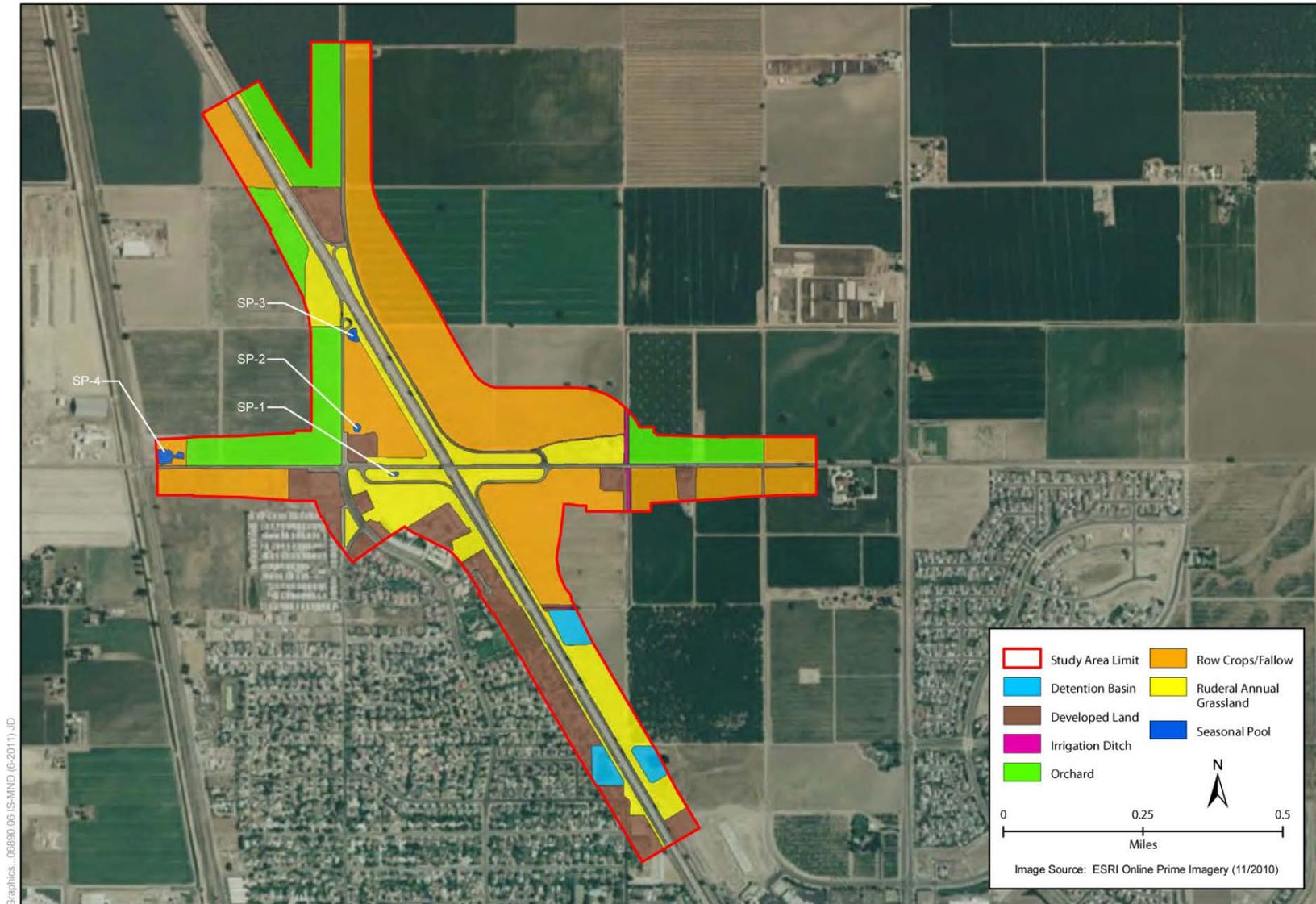


Figure 2.3-1 Habitat Types in the Biological Study Area

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.

At the state level, wetlands and waters are regulated mainly by the California Department of Fish and Game, the State Water Resources Control Board, and the Regional Water Quality Control Boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved.

Sections 1600–1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required.

The California Department of Fish and Game jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Boards also issues water quality certifications in compliance with Section 401 of the Clean Water Act. See the Water Quality section for more details.

Affected Environment

This information is taken from the wetland delineation report (*Delineation of Wetlands and Other Water Bodies for the State Route 99/Cartmill Avenue Interchange Improvements Project*) (July 2012), the *State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study*, completed (December 2011), and the *Revised State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* (July 2012).

The wetlands and other waters delineated in the biological study area consist of two irrigation ditches, four seasonal pools, and three detention basins (see Figure 2.3-1).

Waters of the U.S.

Irrigation Ditches

Two irrigation ditches are east of the State Route 99/Cartmill Avenue interchange in the biological study area. The irrigation ditches were dry at the time of site visits in May and August 2007, but appear to convey water during other times of the year. Most of each irrigation ditch channel was unvegetated, although small patches of charlock (*Sinapsis arvensis*) and Russian thistle (*Salsola tragus*) were seen.

The irrigation ditches are channels excavated in uplands for the purposes of agriculture and do not appear to replace a previously existing natural feature. No surface connection between the ditches and a natural feature is visible, and there are no natural drainages in the project vicinity. However, these ditches drain to the Tulare Lake Bed, considered traditional navigable waters based on past use for commerce, and therefore would be subject to regulation under Clean Water Act Section 404. Through the preliminary jurisdictional determination process, the U.S. Army Corps of Engineers has verified that the irrigation ditches are waters of the U.S.

Other Waters

The other waters in the biological study area consist of four seasonal pools and three created detention basins.

Seasonal Pools

During the wetland delineation fieldwork, data points were taken within each of the four seasonal pools to determine if positive indicators of the three U.S. Army Corps of Engineers wetland criteria (hydrophytic vegetation, hydric soils, and wetland hydrology) were present in each seasonal pool.

Seasonal pool SP-1 is south of Cartmill Avenue between the Cartmill Avenue overpass and the southbound State Route 99 on-ramp. SP-1 was found to support aquatic invertebrates including seed shrimp, water fleas, versatile fairy shrimp (*Branchinecta lindahli*), and copepods. Evidence of wading shore birds was also seen.

Seasonal pool SP-2 is a small detention basin west of State Route 99, north of Cartmill Avenue, next to the AM/PM gas station. The only dominant plant species in SP-2 was Bermuda grass (*Cynodon dactylon*), considered a facultative species until the recent release of the U.S. Army Corps of Engineer's 2012 National Wetland Plant List; this species is now considered an upland species. Other plants observed in SP-2 were hyssop loosestrife (*Lythrum hyssopifolium*), rabbitsfoot grass (*Polypogon monspeliensis*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), and

purslane speedwell (*Veronica peregrina* ssp. *xalapensis*). Seed shrimp, one immature fairy shrimp, and Pacific treefrog (*Hyla regilla*) eggs were seen in this seasonal pool.

Seasonal pool SP-3 is also west of State Route 99 and is in the agricultural land north of Cartmill Avenue. The dominant plant species in SP-3 was Bermuda grass, and other observed species were tall flatsedge (*Cyperus eragrostis*), ripgut brome (*Bromus diandrus*), and horseweed (*Conyza* sp.). This seasonal pool did not appear to hold standing water and therefore was not considered habitat for vernal pool invertebrates.

Seasonal pool SP-4 is northeast of the Cartmill Avenue/North J Road intersection and falls within the biological study area, but is outside the area that would be temporarily or permanently affected by either build alternative. SP-4 occurs within a relatively small, essentially unvegetated area bounded by paved roads on the south and west sides, and by orchard on the north and east sides.

All seasonal pools showed positive indicators of wetland hydrology but not hydrophytic vegetation or hydric soils. Through the preliminary jurisdictional determination process, the U.S. Army Corps of Engineers has verified that these features are not wetlands. Additionally, the four seasonal pools do not meet the definition of waters of the state regulated by the Central Valley Region Water Quality Control Board under the Porter-Cologne Water Quality Control Act.

Created Detention Basins

Three created detention basins sit in the biological study area. At the time of the 2009 delineation fieldwork, two of the basins were unvegetated and did not contain water. Only the detention basin west of State Route 99 contained open water and supported cattails at the time of the supplemental wetland delineation. The detention basin was excavated to drain uplands and does not appear to replace a previously existing natural feature.

This detention basin would likely be considered a hydrologically isolated feature (and thus not likely subject to U.S. Army Corps of Engineers regulation). The U.S. Army Corps of Engineers concurred with this recommendation through the preliminary jurisdiction determination process. This detention basin does appear to meet the definition of waters of the state and would be subject to regulation by the Central Valley Regional Water Quality Control Board under the Porter-Cologne Water Quality Control Act.

Detention basins would not be filled during construction of the project, but rather would be used to capture additional roadside runoff generated by the proposed interchange improvements.

Environmental Consequences

Construction of either build alternative would result in permanent and temporary direct impacts on SP-1, SP-2, and SP-3 (see Table 2.3-1; Figures 2.3-2 and 2.3-3). Since the circulation of this environmental document for public review, a new overpass was built just west of the current project. The new overpass construction caused the land to rise to the west and slope toward the plan area. Because of its location on the other side of the overpass rise, SP-4 would not be directly or indirectly affected by any project construction activities. (SP-4 is shown in Figure 2.3-1, but not in Figure 2.3-2 or 2.3-3 since it is located outside the construction area and outside of the area shown.)

Table 2.3-1 Impacts on Seasonal Pools (in acres)

Seasonal Pool	Alternative 1		Alternative 2	
	Permanent	Temporary	Permanent	Temporary
Direct Impacts				
SP-1	0.071	0	0.071	0
SP-2	0	0.11	0	0.11
SP-3	0.23	0	0.012	0.18
Total Impacts	0.302	0.11	0.083	0.29

Source: State Route 99/Cartmill Avenue Interchange Improvements Natural Environmental Study, July 2012.

Building the proposed improvements would result in both permanent and temporary impacts to the two irrigation ditches (see Table 2.3-2; Figures 2.3-2 and 2.3-3).

Table 2.3-2 Impacts on Irrigation Ditches

	Alternative 1		Alternative 2	
	Permanent	Temporary	Permanent	Temporary
Irrigation Ditches	0.082	0.031	0.082	0.031

Source: State Route 99/Cartmill Avenue Interchange Improvements Natural Environmental Study, July 2012.



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Figure 2.3-2 Impacts to Habitat Types from Alternative 1

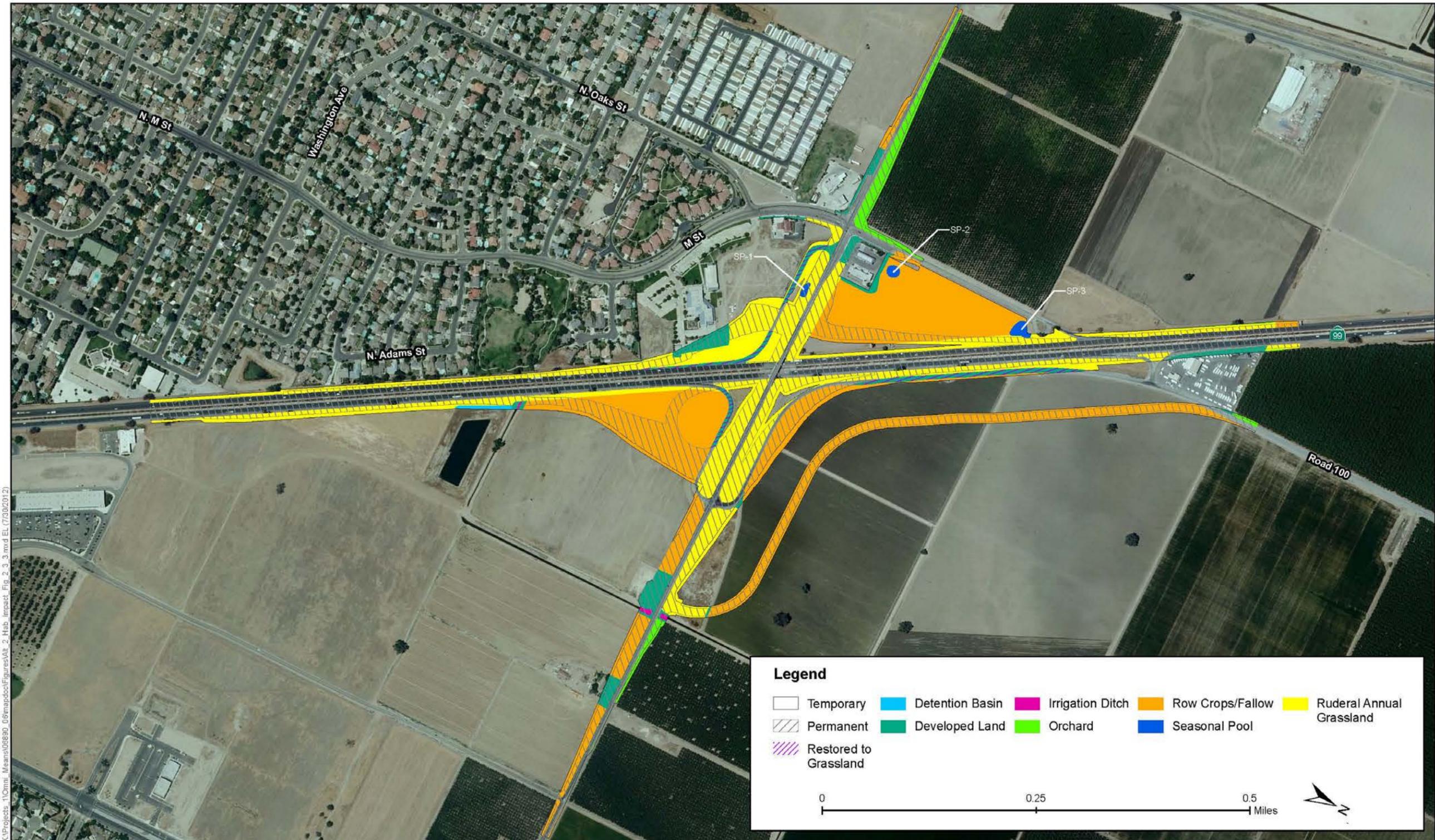


Figure 2.3-3 Impacts to Habitat Types from Alternative 2

Neither project alternative would have direct impacts on the detention basins. Indirect impacts could occur at the detention basin west of State Route 99 if soils or other materials enter it during construction. Implementation of the avoidance and minimization efforts described below would prevent indirect impacts on the basin.

No-Build Alternative

There would be no impacts to wetlands or other waters under the No-Build Alternative because there would be no construction.

Avoidance, Minimization, and/or Mitigation Measures

Waters of the U.S.

Avoidance and minimization efforts would not be feasible for irrigation ditches in the proposed project because both permanent and temporary direct impacts on the irrigation ditches would occur under Alternatives 1 and 2. No indirect effects would occur on irrigation ditches outside of the construction zone.

Other Waters

Avoidance and minimization efforts would not be feasible for seasonal pools SP-1 and SP-3 because they would be removed during construction of the proposed improvements. SP-2 may be temporarily affected during construction (direct impact). Erosion control measures would reduce this potential effect.

Locations of erosion control features would be reviewed by a qualified biologist and identified on the final grading plans and construction specifications.

Natural/biodegradable erosion control measures (i.e., coir rolls, straw wattles, straw placement over disturbed areas) would be used. Plastic monofilament netting (erosion control matting) would not be allowed because small wildlife can become entangled in this type of erosion control material. Previously disturbed areas would be hydroseeded with native plant species upon project completion.

None of the three detention basins would be filled during construction of the proposed project but rather would be used to capture additional roadside runoff generated by the proposed interchange improvements. Indirect effects on the detention basin west of State Route 99 would be avoided by implementing erosion control measures (as described above) in the adjacent areas to prevent soil or other materials from entering the detention basin.

As part of the permitting process, the City of Tulare would compensate for permanent impacts on waters of the state and potential waters of the U.S. to ensure there is no

net loss of habitat functions and values. Compensation ratios would be a minimum of 1:1 (1 acre of mitigation for every 1 acre of impact); the affected acreage would be based on site-specific information and determined through coordination with the Central Valley Regional Water Quality Control Board through the Section 401 Water Quality Certification process and the U.S. Army Corps of Engineers through the Section 404 permitting process. Compensation for the loss of waters may be through credits purchased from an approved mitigation bank or in-lieu fee program and/or permittee responsible on-site or offsite aquatic habitat restoration/creation.

2.3.2 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Services), and the California Department of Fish and Game 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 state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5, *Threatened and Endangered Species*. All other special-status animal species are discussed here, including California Department of Fish and Game fully protected species and species of special concern, and U.S. Fish and Wildlife Service or NOAA Fisheries Service candidate species.

The following federal laws and regulations pertain to wildlife:

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

The following state laws and regulations pertain to wildlife:

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

Affected Environment

This information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* completed in December 2011, and the *Revised State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* completed in July 2012.

Based on review of records from the California Natural Diversity Database for special-status wildlife in the project vicinity and the U.S. Fish and Wildlife Service endangered and threatened species list, a total of 21 special-status wildlife species were identified as having potential to occur in the project region. After completion of the field surveys and a review of the species' distribution and habitat requirements data, it was determined that 13 of the 21 species would not occur in the biological study area because the area lacks suitable habitat for the species, or the area is outside the species' known range.

Of the eight special-status wildlife species with potential to occur in the project area, one species—the tricolored blackbird (*Agelaius tricolor*)—has low potential for occurrence due to the lack of suitable breeding habitat within the biological study area. Because of this low potential, this species is not discussed further.

The remaining seven sensitive wildlife species—the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsoni*), western burrowing owl (*Athene cunicularia hypugea*), and San Joaquin kit fox (*Vulpes macrotis mutica*)—have a moderate to high potential to occur in the biological study area and have potential to be affected by project construction or operation. The vernal pool fairy shrimp, vernal pool tadpole shrimp, Swainson's hawk, and San Joaquin kit fox are federally or state listed as threatened or endangered species and are discussed in Section 2.3.3, *Threatened and Endangered Species*. The remaining species and migratory birds are discussed here.

Northern Harrier, White-tailed Kite, and Other Migratory Birds

The northern harrier and white-tailed kite, as well as other migratory bird species, could nest in or next to the project area.

The northern harrier is a California species of special concern. The breeding range includes most of the Central Valley, the Sacramento-San Joaquin Delta, the Suisun Marsh, and portions of San Francisco Bay. Tall grasses and forbs in wetlands and field borders provide cover for northern harriers. Northern harriers nest on the ground

in thick grass, shrubbery, or other vegetation, often near marshes. Their nests typically consist of a pile of sticks and grass. The breeding season for this species is between April and September, with peak activity in June and July.

The white-tailed kite is fully protected under the California Fish and Game Code Section 3511. In California, white-tailed kites occur in coastal and valley lowlands. White-tailed kites nest in open canopy forests, especially cismontane forests; they are also known to nest in riparian areas. Nests typically occur near agricultural lands where foraging most often occurs. Foraging also occurs in open grasslands, meadows, and emergent wetlands. White-tailed kites use dense trees for cover. Breeding occurs from February to October, with peak activity from May through August.

Several other migratory birds, including raptors and swallows, could nest in and next to the project area. The breeding season for most birds is generally from February 1 to August 31. The occupied nests and eggs of these birds are protected by federal and state laws, including the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3503.5. The California Department of Fish and Game is responsible for overseeing compliance with the codes and makes recommendations on nesting bird and raptor protection.

No northern harriers were observed in or near the biological study area during the 2007 or 2008 field surveys. There are no recorded occurrences of northern harriers within the project vicinity according to the California Natural Diversity Database, but the project area is within the range for this species. No suitable nesting habitat is present in the biological study area, but northern harriers may forage in grasslands and non-orchard agricultural lands within the biological study area.

No white-tailed kites were observed in or near the biological study area during the 2007 or 2008 field surveys. There are no recorded occurrences of white-tailed kites in the project vicinity according to the California Natural Diversity Database, but the biological study area is within the range for this species. The biological study area and adjacent areas provide suitable nesting habitat for the species, and white-tailed kites may forage in ruderal annual grasslands and agricultural lands within the biological study area.

The Cartmill Avenue overcrossing provides suitable nesting substrate for swallows. The underside of the overcrossing was not examined due to safety concerns, but no swallows were observed flying in the vicinity of the overcrossing during any of the surveys near it. No other migratory birds were observed nesting in or next to the

biological survey area during the 2007 and 2008 surveys; however, focused nest surveys were not conducted.

Western Burrowing Owl

The western burrowing owl is a California species of special concern and is protected during its nesting season under the Migratory Bird Treaty Act and the California Fish and Game Code Section 3503.5. The western burrowing owl is a ground-nesting raptor that typically uses the burrows of other species, such as ground squirrels, for nesting, protection, and shelter. Burrowing owls are a year-long resident in a variety of grasslands as well as in scrublands with a low density of trees and shrubs and low-growing vegetation. Burrowing owls that nest in the Central Valley may winter elsewhere.

The main habitat requirement of the burrowing owl is burrows appropriate for nesting. Burrowing owls usually nest in abandoned burrows, although they have been known to build their own burrows in softer soils. In urban and agricultural areas, burrowing owls often use artificial burrows, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement, particularly pipes. This semi-colonial owl breeds from March through August and is most active while hunting during dawn and dusk.

There are no California Natural Diversity Database records for occurrences of the burrowing owl in the project vicinity. The nearest reported breeding record for this species is from 2000 and is about 11 miles southwest of the project site. A burrow search was done in the biological study area on June 11, 2008. Numerous active ground squirrel burrows were found, but no burrowing owl or burrowing owl sign (white wash, feathers, or pellets) was seen.

Burrows in ruderal annual grassland areas and along margins of agricultural lands in the biological study area provide potential breeding or wintering sites for burrowing owls. Based on the presence of suitable habitat, there is a potential for burrowing owl to nest in or next to the project site.

Environmental Consequences

Northern Harrier, White-tailed Kite, and Non-sensitive Migratory Birds

Implementation of the project could affect special-status and other nesting migratory birds, including raptors, if construction activities remove or otherwise disturb occupied nests during the breeding season (generally between February 1 and September 14). Construction activities (grading, clearing, excavation, and tree

trimming and removal) during the breeding season that result in the death of adults or young, or loss of reproductive potential would violate the Migratory Bird Treaty Act and California Fish and Game codes 3503 and 3503.5.

Additionally, construction of the either build alternative would result in the conversion of suitable foraging habitat (ruderal annual grasslands and agricultural lands) to non-suitable land uses (see Table 2.3-3; Figures 2.3-2 and 2.3-3). Implementation of the avoidance and minimization measures noted below would ensure that the project would not result in the loss or disturbance of special-status and other migratory bird nests, eggs, or young.

Table 2.3-3 Impacts to Wildlife Habitat

Species	Alternative 1		Alternative 2	
	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Northern harrier, white tailed kite, and other migratory birds(foraging)	33.25	16.80	25.98	24.01
Western burrowing owl	33.25	16.80	25.98	24.01

Source: State Route 99/Cartmill Avenue Interchange Improvements Natural Environmental Study, July 2012.

Western Burrowing Owl

If burrowing owls are nesting in the biological study area, construction activities, including grading and clearing activities within ruderal annual grasslands and non-orchard agricultural areas, could result in nesting failure, death of nestlings, or destruction of eggs. These actions would be a violation of the California Fish and Game Code Section 3503.5 and the Migratory Bird Treaty Act. Additionally, the removal or destruction of occupied burrows during the non-breeding season would result injury or mortality of owls.

Construction of either build alternative could result in the permanent loss and temporary disturbance of burrowing owl habitat (see Table 2.3-3; Figures 2.3-2 and 2.3-3). Implementation of the avoidance and minimization measures identified below would ensure that the proposed project would not result in the loss or disturbance of western burrowing owls, their nests, eggs, or young.

No-Build Alternative

There would be no impacts on the above species under the No-Build Alternative because there would be no construction.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures would be implemented to avoid or reduce impacts to the northern harrier, white-tailed kite, western burrowing owl, and other migratory birds.

Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys

If necessary, vegetation removal would occur during the non-breeding season for most migratory birds (generally between September 15 and January 31) to the extent feasible.

If possible, construction activities would start before the nesting season for most birds (generally, February 1 through September 14). Starting construction before the breeding season would establish a level of noise disturbance that would dissuade noise-sensitive raptors and other birds from attempting to nest within or near the study area.

If starting construction activities (including vegetation removal) before the breeding season is not possible, a qualified wildlife biologist with knowledge of the relevant species would do nesting surveys before the start of construction.

A minimum of three separate surveys would be done for migratory birds and raptors. Surveys would include a search of all trees and shrubs, plus grassland/ruderal areas that provide suitable nesting habitat, in the project area. In addition, a 500-foot area around the project area would be surveyed for nesting raptors. Surveys for white-tailed kite nests within a 0.5-mile radius would be done concurrently with surveys for Swainson's hawk (described below). Surveys should occur during the height of the breeding season (March 1 to June 1), with one survey occurring in each of two consecutive months within this peak period and the final survey occurring within 1 week of the start of construction. If no active nests are found during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer would be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers would be determined by the biologist in coordination with U.S. Fish and Wildlife Service and California Department of Fish and Game; they would depend on the level of noise or construction disturbance,

line-of-sight between the nest and the disturbance, ambient noise levels and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. No-disturbance buffers for fully protected species may be as large as a 0.5-mile radius around the nest. If an active nest of a listed species is found after construction begins, construction would stop in the area until consultation with California Department of Fish and Game and U.S. Fish and Wildlife Service has been initiated and appropriate avoidance measures have been determined and implemented.

Conduct Surveys for Burrowing Owls and Implement the Mitigation Methods in California Department of Fish and Game Guidelines, if necessary

The information in the draft environmental document followed the 1995 California Department of Fish and Game mitigation guidance for burrowing owls. On March 7, 2012 the California Department of Fish and Game updated their mitigation guidance. The following is taken from the California Department of Fish and Game's 2012 *Staff Report on Burrowing Owl Mitigation*. Burrowing owl surveys and take avoidance surveys will be done prior to project construction. Burrowing owl surveys are recommended whenever burrowing owl habitat is present on or within 500 feet of a project site. Breeding season and non-breeding season surveys will be done in accordance with California Department of Fish and Game's 2012 *Staff Report on Burrowing Owl Mitigation*. Breeding season will have four surveys: 1) one survey between February 15 and April 15 and 2) a minimum of three surveys at least three weeks apart between April 15 and July 15, with at least one survey after June 15. Non-breeding season surveys will consist of four surveys spread evenly throughout the non-breeding season (September 1 to January 31).

A survey report will be prepared at the conclusion of surveys for submission to California Department of Fish and Game. The report will include, but is not limited to, a description of the proposed project or proposed activity, proposed project start and end dates, and a description of disturbances or other activities occurring on-site or nearby (see Appendix D, California Department of Fish and Game Staff Report).

If burrowing owls are found during any of the surveys, compensatory mitigation best practices as described below will be used. Because ample lead time is necessary for putting compensation in place, these efforts should begin as soon as possible after presence of burrowing owls is determined.

Regardless of results from the surveys described above, an initial take avoidance (preconstruction) survey will be done no less than 14 days prior to initiating ground disturbing activities. The City of Tulare will retain a qualified biologist to conduct preconstruction surveys for active burrows according to methodology in the 2012 California Department of Fish and Game Staff Report. Burrowing owls may re-colonize a site after only a few days. As such, subsequent take avoidance surveys including, but not limited to, a final survey 24 hours prior to ground disturbance will be done if a few days pass between project activities. If no burrowing owls are found, no further mitigation is required. If burrowing owls are found, the City of Tulare will use avoidance, minimization measures, monitoring, and reporting of such measures as described in the 2012 California Department of Fish and Game Staff Report (Mitigation Methods) and summarized below:

- Do not disturb occupied burrows during the breeding season (February 1–August 31).
- Establish a 250-foot-wide buffer where no construction will occur around occupied burrows unless a qualified biologist determines through non-invasive methods that egg laying and incubation have not begun or that juveniles are foraging independently and are capable of independent survival.
- Avoid affecting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid destruction of unoccupied burrows and place visible markers near burrows to ensure they are not collapsed.
- Develop and use a worker awareness program to increase the on-site worker recognition of and commitment to burrowing owl protection.
- Conduct additional take avoidance surveys as described above.
- Conduct on-going surveillance of the project site for burrowing owls during project activities.
- Minimize impacts to burrowing owls and their habitat by using buffer zones, visual screens, and other measures during project activities. Recommended buffer distances in the 2012 California Department of Fish and Game Staff Report will be used or site-specific buffers and visual screens will be determined through information collected during site-specific monitoring and consultation with the California Department of Fish and Game.

*Compensate for Loss of Western Burrowing Owl Foraging and Burrow Habitat
in Accordance with California Department of Fish and Game Guidelines*

The information in the draft environmental document followed the 1995 California Department of Fish and Game mitigation guidance for burrowing owls. On March 7, 2012 the California Department of Fish and Game updated their mitigation guidance. The following is taken from the California Department of Fish and Game's 2012 *Staff Report on Burrowing Owl Mitigation*. If burrowing owls have been documented to occupy burrows at the project site in the last 3 years, current scientific literature supports the conclusion that the site should be considered occupied and mitigation is required. The current scientific literature also provides the following best practices. If these best practices cannot be used, the lead agency or lead investigator may consult with the California Department of Fish and Game to develop effective mitigation alternatives.

1. Where habitat will be temporarily disturbed, restore the disturbed area to pre-project conditions, including soil decompaction and revegetation. Permanent habitat protection may be warranted if there is potential that temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable, depending on the time frame, resulting in reduced survival or abandonment. For the latter potential impact, see the permanent impact measures below.
2. Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of affected burrows, and burrowing owls are replaced based on site-specific conditions and an analysis of the factors influencing burrowing owls and burrowing owl population persistence in a particular area.
3. Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal during breeding and non-breeding seasons comparable to or better than that of the impact area, and (b) sufficiently large acreage and presence of fossorial (digging) mammals. The mitigation habitat lands may require enhanced or expanded burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. If the mitigation lands are adjacent to the

affected burrow site, ensure the nearest neighbor artificial or natural burrow clusters are at least within 690 feet.

4. Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission for conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is within the service area of a California Department of Fish and Game-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.
5. Develop and use a mitigation land management plan to address long-term ecological sustainability and maintenance of the burrowing-owl site (see Appendix D, 2012 California Department of Fish and Game Staff Report). The plan will include a monitor and reporting on the mitigation site.
6. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
7. Do not altered or destroy habitat until mitigation lands have been legally secured, and the endowment or other long-term funding mechanism is in place or security is provided.
8. Mitigation lands should be on, adjacent, or near the affected site, if possible, and habitat should support an existing burrowing owl population.
9. When insufficient habitat is on, adjacent, or near project sites where burrowing owls will be excluded, mitigation lands with burrowing owl habitat should be away from the project site. The selection of mitigation lands should then focus on consolidating and enlarging conservation areas outside of urban and planned growth areas within foraging distance of other conserved lands. If mitigation lands are not available adjacent to other conserved lands, increase the mitigation land acreage requirement to ensure a selected site is of sufficient size. Off-site mitigation may not adequately offset the biological and habitat values affected on a one to one basis. Consult with the California Department of Fish and Game when determining off-site mitigation acreages.
10. Evaluate and select suitable mitigation lands based on a comparison of the habitat attributes of the affected and conserved lands, including but not limited

- to type and structure of habitat being affected impacted or conserved; burrowing owl density in affected and conserved habitat; and significance of affected or conserved habitat to the species range wide. Mitigate for the highest quality affected burrowing owl habitat first and foremost when identifying mitigation lands, even if a mitigation site is outside of a lead agency's jurisdictional boundary, particularly if the lead agency is a city or special district.
11. Select mitigation lands while taking into account potential human and wildlife conflicts or incompatibility, including human foot and vehicle traffic, predation by cats, loose dogs, urban-adapted wildlife, and incompatible species management.
 12. When a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may help sustain of the on-site burrowing owl population. Maintenance includes the following: reduce vegetation height by grazing or hand mowing, remove trees and shrubs, and prevent excessive human disturbance such as walking, jogging, off-road activities, dog-walking, unleashed pets, and feral animals that chase and prey upon owls (4, 5 and 6 above apply to this mitigation approach).
 13. If no other feasible mitigation options are available and a lead agency is willing to establish and oversee a Burrowing Owl Mitigation and Conservation Fund that funds, on a competitive basis, acquisition and permanent habitat conservation, the project proponent may participate in the lead agency's program.

Conduct Preconstruction Survey for Swallow Nests and Implement Measures to Deter Nesting

To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the Migratory Bird Treaty Act and California Fish and Game Code, the City of Tulare would implement the following measures:

- The City of Tulare would hire a qualified wildlife biologist to inspect the Cartmill Avenue overcrossing during the swallows' non-breeding season (September 1 to February 28). If abandoned nests are found, they may be removed. To avoid

damaging active nests, removal of nests would occur before the breeding season begins (March 1).

- If possible, demolition of the Cartmill Avenue overcrossing should occur during the non-breeding season (September 1 to February 28). If this is not possible, after nests are removed, the undersides of the overcrossing would be covered with 0.5- to 0.75-inch mesh net by a qualified contractor. All net installation would occur before March 1 and would be monitored by a qualified biologist throughout the breeding season (typically several times a week). The netting would be anchored so that swallows cannot attach their nests to the bridge through gaps in the net.
- If netting of the bridges does not occur by March 1 and swallows colonize the bridge, demolition of the structure would not begin before August 31 of that year or until a qualified biologist has determined that the young have fledged and all nest use has been completed.
- If appropriate steps are taken to prevent swallows from building new nests, work can proceed at any time of the year.

2.3.3 Threatened and Endangered Species

Regulatory Setting

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

Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA 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 is a Biological Opinion or an Incidental Take statement. 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 Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. “Take” is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Game.

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

Affected Environment

The following information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* (December 2011) and the *Revised State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* (July 2012).

Coordination with U.S. Fish and Wildlife Service began in November 2007 with a request to conduct wet-season sampling of two seasonal pools in the project area. A Low-Effect Habitat Conservation Plan is being developed by the U.S. Fish and Wildlife Service and will be finalized before project construction. The avoidance, minimization, and mitigation measures provided in this Final Initial Study are consistent with those in the Low-Effect Habitat Conservation Plan and will be implemented under the California Environmental Quality Act through the approval of the Mitigated Negative Declaration.

The Low-Effect Habitat Conservation Plan will be circulated for public comment and the U.S. Fish and Wildlife Service will prepare the Categorical Exclusion, a National Environmental Policy Act document. The U.S. Fish and Wildlife Service will respond to all comments on the Low-Effect Habitat Conservation Plan and/or the Categorical Exclusion. Any changes to impacts or avoidance, minimization, and mitigation measures that the U.S. Fish and Wildlife Service deem necessary would be reflected in the Revised Low-Effect Habitat Conservation Plan and internal Biological Opinion. The Biological Opinion must be in place prior to construction, and the terms and conditions of the Biological Opinion must be used as part of the Incidental Take Permit. Coordination with the U.S. Fish and Wildlife Service is discussed in more detail in Chapter 3.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is federally listed as threatened. The species is found from Shasta County in the north throughout the Central Valley and west to the central Coast Ranges, at elevations of 30 feet to 4,000 feet. Additional populations have been reported from the Agate Desert region of Oregon near Medford; other populations occur in San Luis Obispo, Santa Barbara, and Riverside counties. However, most known locations are in the Sacramento and San Joaquin valleys and along the eastern margin of the central Coast Ranges.

Vernal pool fairy shrimp inhabit vernal pools that form in depressions, usually in grassland habitats. Pools must remain inundated long enough for the species to complete its life cycle. Vernal pool fairy shrimp also occur in other wetlands that provide habitat similar to vernal pools, such as alkaline rain pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stock ponds, vernal swales, and some seasonal wetlands. Occupied wetlands range in size from as small as several square feet to more than 10 acres. Vernal pool fairy shrimp and other fairy shrimp have been observed in artificial depressions and drainages where water ponds

for a sufficient duration. Examples of such areas include roadside ditches and ruts left behind by off-road vehicles or heavy equipment. Soil compaction from construction activity can sometimes create an artificial hardpan, or restrictive layer, which allows water to pond and form suitable habitat for vernal pool fairy shrimp.

The vernal pool fairy shrimp was reported to occur about 8 miles from the project site, according to the California Natural Diversity Database. This record is from 1992 when one male was found. Three of the four seasonal pools onsite (SP-1, SP-2, and SP-4) provide suitable habitat for vernal pool fairy shrimp. Pool SP-1 is a relatively large shallow pool with sparse vegetation. Pool SP-2 is a small detention basin with a moderate amount of vegetation. Pool SP-4 is a large unvegetated, disturbed pool. Pool SP-3 is heavily vegetated throughout and does not pond water to an adequate depth or duration to support vernal pool fairy shrimp.

One year of protocol-level wet-season surveys were done in pools SP-1 and SP-2 between November 2007 and March 2008. One common fairy shrimp species, the versatile fairy shrimp (*Branchinecta lindahli*), was seen in SP-1. A single unidentifiable immature fairy shrimp was seen in SP-2, though this individual is believed to be the result of an accidental transfer of a cyst or individual from SP-1 during the wet season surveys since this individual was the only fairy shrimp seen in this pool during the 2007–2008 surveys.

A protocol-level dry season survey was done on June 11, 2008. Soil collected from pools SP-1 and SP-2 was processed and analyzed for cysts. Soil samples from pool SP-1 contained tens to thousands of cysts of the genus *Branchinecta* per 100 milliliters of soil. No vernal pool branchiopod cysts were found in soil samples collected from pool SP-2. At least two morphologically distinct types of *Branchinecta* species cysts were found in the soil samples collected from SP-1. The two types of cysts most closely resembled cysts of two non-listed *Branchinecta* species (the versatile fairy shrimp and the alkali fairy shrimp [*B. mackini*]).

In addition, some of the *Branchinecta* cysts were similar in appearance to the federally listed vernal pool fairy shrimp, but a positive identification could not be made because the cyst morphology of that genus can be quite variable. Cysts of the versatile fairy shrimp, which were seen during the wet season surveys, can occasionally resemble those of listed species.

Field survey determined pool SP-4 likely ponds to an adequate depth and for an adequate duration to support vernal pool fairy shrimp. At the time of the March 17,

2009 site visit, the pool contained roadside trash, and the pool surface was covered with an oily film likely associated with road runoff. It appeared that the area is used for vehicle turn around as numerous vehicle tracks ran through the pool. Based on the location and condition of the pool, the lack of suitable natural habitat in the project vicinity, and the surrounding lands that have been in agricultural production for many years, the pool has low potential to support vernal pool fairy shrimp.

Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp is a federally-listed endangered species. This species is a California Central Valley endemic species, with most populations in the Sacramento Valley. This species has also been reported from the Sacramento River Delta east of San Francisco Bay and from scattered sites in the San Joaquin Valley from San Joaquin to Madera counties.

Vernal pool tadpole shrimp occur in a wide variety of seasonal habitats including vernal pools, ponded clay flats, alkaline pools, ephemeral stock tanks, and roadside ditches. Habitats where vernal pool tadpole shrimp have been seen range in size from small (less than 25 square feet), clear, vegetated vernal pools to highly turbid alkali scald pools to large (greater than 100 acres) winter lakes. These pools and other ephemeral wetlands must dry out and be inundated again for the vernal pool tadpole shrimp cysts to hatch. This species has not been reported in pools that contain high concentrations of sodium salts, but may occur in pools with high concentrations of calcium salts.

The project is within the current range of the vernal pool tadpole shrimp, but there are no recorded occurrences within 10 miles. The closest, according to the California Natural Diversity Database, is about 13 miles northwest of the project site. This 1998 record is for hundreds of tadpole shrimp seen in a vernal pool complex. During March to May 2011, vernal pool tadpole shrimp were also observed, according to the California Natural Diversity Database, in a vernal pool about 13.5 miles northwest of the project area.

Three of the four seasonal pools in the biological study area (SP-1, SP-2, and SP-4) provide suitable habitat for vernal pool tadpole shrimp. Pool SP-3 is heavily vegetated throughout and does not pond water to an adequate depth or duration to support vernal pool tadpole shrimp. As described above for vernal pool fairy shrimp, wet-season and dry-season surveys were done in SP-1 and SP-2 during 2007–2008. No vernal pool tadpole shrimp were seen during the wet-season surveys, and no

vernal pool tadpole cysts were found in soil samples collected from pools SP-1 and SP-2.

It was determined from the field survey that pool SP-4 likely ponds to an adequate depth and for an adequate duration to support vernal pool tadpole shrimp. During the March 17, 2009 site visit, the pool contained roadside trash, and the pool surface was covered with an oily film likely associated with road runoff. It appeared the area is used to turn vehicles around as numerous vehicle tracks pass through the pool. Based on the location and conditions of the pool, the lack of suitable natural habitat in the project vicinity, and that the surrounding lands have been in agricultural production for many years, the pool has low potential to support vernal pool tadpole shrimp.

Swainson's Hawk

Swainson's hawk is a state-listed threatened species. Swainson's hawks migrate annually from wintering areas as far south as South America to breeding locations in northwestern Canada, the western United States, and Mexico. In California, the distribution includes the Central Valley, the Klamath Basin, the northeastern plateau, Lassen County, and the Mojave Desert.

Swainson's hawks nest in the Central Valley in large trees in riparian corridors, oak savannah, and juniper-sage flats in open tree stands. This species is also typically found nesting next to agricultural fields. Swainson's hawks breed from late March to late August, with peak activity from late May through July. In the Central Valley, Swainson's hawks forage in large, open agricultural habitats. Preferred foraging habitats include fallow fields, alfalfa, low-growing row and field crops, dry rice land, and grain fields.

A total of seven Swainson's hawk nest occurrences have been recorded within a 10-mile radius of the project area, according to the California Natural Diversity Database. The nearest reported nest site is about 5 miles south of the project area. In addition, a Swainson's hawk was seen near the project area during the 2008 field surveys. Large trees in and near the project area provide suitable nesting habitat for Swainson's hawks, and grasslands and non-orchard agricultural lands provide suitable foraging opportunities. Based on their known occurrence in the project vicinity and the presence of suitable nesting and foraging habitat, there is a moderate potential for Swainson's hawks to nest in or adjacent to the project area.

San Joaquin Kit Fox

The San Joaquin kit fox is listed as endangered under the federal Endangered Species Act and is listed as threatened under California Endangered Species Act. The current known range of the San Joaquin kit fox extends from central Contra Costa County south through Kern County and to the northeastern edge of Santa Barbara County.

In the central portion of the range, the San Joaquin kit fox is associated with the following natural vegetation communities: valley sink scrub, interior coast range saltbush scrub, upper Sonoran subshrub scrub, annual grassland, and the remaining native grasslands. Kit foxes in the central region also use grazed non-irrigated grasslands, tilled or fallow fields, irrigated row crops, orchards, and vineyards because of the predominance of these cover types in the region.

Kit foxes prefer loose-textured and deeper soils, but have been found on a wide range of soil types. Kit foxes may build their own dens, but where soils make digging difficult, foxes frequently use and modify burrows built by other animals, particularly those of California ground squirrels. Structures such as culverts, abandoned pipelines, and well casings may also be used as den sites. The breeding season begins during September and October when adult females begin to clean and enlarge natal or pupping dens. Mating and conception occur between late December and March. Gestation is 48–52 days, and litters of two to six pups are born between late February and late March.

The biological study area is within the current range of the San Joaquin kit fox. There are 10 California Natural Diversity Database occurrence records for the San Joaquin kit fox within a 10-mile radius of the project site. Nine of these records are from 1975 or earlier. The tenth and closest record is from 1992 for a kit fox population found in the vicinity of Tulare. No recent surveys have been done in this area to confirm this population.

Within the biological study area, potential foraging and denning habitat is present in ruderal annual grasslands. Agricultural lands also provide suitable foraging habitat for the San Joaquin kit fox. Areas that would allow for kit fox movement through the biological study area include ruderal annual grasslands, orchards, and row crops.

Numerous small mammal burrows, particularly those of California ground squirrel, were seen within the biological study area in annual grasslands and could provide a source of prey for the San Joaquin kit fox. A burrow search was done on June 11, 2008 within ruderal annual grassland areas and along margins of agricultural areas to

determine if burrows suitable for the kit fox were present. Numerous burrows large enough for kit fox (at least 3 inches in diameter) were seen, but all appeared to be occupied by ground squirrels based on the presence of individuals entering or exiting these burrows and/or the presence of ground squirrel prints, scat, or remnants of nut shells. All areas searched were located in disturbed areas and/or along busy roads.

Therefore, the likelihood that an active San Joaquin kit fox den is present within the biological study area is low because of the high amount of disturbance associated with roadside habitats. The biological study area is considered a low-quality movement corridor because movement through the biological study area would require movement across busy roads. Movement corridors along canals located outside of the biological study area are much more likely to be used by dispersing kit foxes traveling north-south in the vicinity of the biological study area (east-west travel is precluded by the presence of State Route 99).

Though the biological study area consists of busy roadways and a freeway, there is a potential for the San Joaquin kit fox to occur in the biological study area.

Environmental Consequences

Vernal Pool Fairy Shrimp

Because the results of the protocol-level surveys have elements that are inconclusive, it was determined that vernal pool fairy shrimp may occur in seasonal pools within the project area. Construction associated with interchange improvements would result in the direct loss (removal) of SP-1, which provide suitable habitat for listed vernal pool fairy shrimp. Direct temporary impacts on SP-2 include fuel or oil leaks or spills next to the pool that result in injury or death of vernal pool fairy shrimp and degradation of habitat. Dirt could also be inadvertently placed in the pool, filling the habitat or burying cysts. These impacts would occur under either build alternative (see Table 2.3-4).

SP-4 (if still present) is at the far western portion of the plan area, outside of the project area. A new overpass built just west of this area causes the land to rise to the west, thus sloping toward the plan area. Because of its location on the other side of the overpass rise, the plan area is not be directly or indirectly affected by the project.

Because the project would remove potentially occupied habitat and may result in the loss of individual shrimp, the proposed project is likely to adversely affect vernal pool fairy shrimp.

**Table 2.3-4 Habitat Impacts to Threatened and
Endangered Wildlife Species**

Species	Alternative 1		Alternative 2	
	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Direct Impacts				
Vernal pool fairy shrimp	0.071	0.11	0.071	0.11
Vernal pool tadpole shrimp	0	0	0	0
Swainson's Hawk (foraging)	33.25	16.80	25.98	24.01
San Joaquin kit fox	35.65	17.91	27.40	24.79

Source: State Route 99/Cartmill Avenue Interchange Improvements Natural Environmental Study, July 2012.

Vernal Pool Tadpole Shrimp

Based on the results of protocol-level wet and dry season surveys, vernal pool tadpole shrimp are not present in pools SP-1 and SP-2; therefore, project activities that affect these pools would not affect the species. As noted above, a new overpass was built between the project area and SP-4 and because of its location on the other side of the overpass rise, would not be directly or indirectly affected by the project.

Implementation of avoidance and minimization measures discussed in the following section ensures this pool would not be affected during construction.

Because the project would not remove occupied habitat and is unlikely to affect individual shrimp, the project is not likely to adversely affect the vernal pool tadpole shrimp.

Swainson's Hawk

Implementation of the project could affect the Swainson's hawk, if construction activities remove or otherwise disturb occupied nests during the breeding season (between February 1 and August 31). Construction activities (grading, clearing, excavation, and tree trimming and removal) during the breeding season that result in the death of adults or young, or the loss of reproductive potential, would violate the Migratory Bird Treaty Act and the California Fish and Game Code (3503 and 3503.5).

Construction of either build alternative would result in permanent loss and temporary disturbance of suitable Swainson's hawk foraging habitat (see Table 2.3-4; Figures 2.3-2 and 2.3-3). Because the availability of foraging habitat has been closely tied to the breeding success of this species, projects within the vicinity of active nests that would adversely modify suitable Swainson's hawk foraging habitat are considered to

have potential to adversely affect this species. Implementation of the avoidance, minimization, and compensation measures discussed in the following section would ensure that the proposed project would not result in the loss or disturbance of Swainson's hawk adults, nests, eggs, or young, and would minimize the loss of foraging habitat.

San Joaquin Kit Fox

Construction of the project would result in permanent and temporary loss of suitable habitat (ruderal annual grassland and agricultural land) for the San Joaquin kit fox. Although the potential is considered very low, construction activities could result in disturbance, injury, or death of the San Joaquin kit fox. Potential direct effects include damage to or destruction of dens, direct death from construction vehicles or heavy equipment, direct death from den collapse and subsequent suffocation, temporary disturbance from noise and human presence associated with construction activities, and harassment by construction personnel. In addition, exposed pipes, large excavated holes, or trenches that are left open after construction has finished for the day could entrap San Joaquin kit foxes moving through the construction area.

Construction activities could also affect kit foxes by reducing prey populations through temporary and permanent habitat losses and habitat disturbance. In some portions of the project area, the project would result in a wider roadway for San Joaquin kit foxes to cross. A portion of Cartmill Avenue is raised, and animals cannot cross this section of the roadway. Road widening adjacent to grassland and agricultural areas could increase the potential for vehicle strikes in these areas. However, the project area is not considered a substantial movement corridor for kit foxes, and the potential for kit foxes to occur in the project vicinity is considered low. Therefore, impacts on movement corridors for San Joaquin kit foxes are not substantial, and no mitigation is proposed.

Impacts associated with permanent and temporary habitat loss for this species, described above, are applicable to Alternatives 1 and 2. Construction of either alternative would result in permanent loss and temporary disturbance to suitable habitat for this species (see Table 2.3-4; Figures 2.3-2 and 2.3-3). Avoidance, minimization, and compensation measures discussed in the following section would ensure that the proposed project would not result in the loss or disturbance of the San Joaquin kit fox and would mitigate for the loss of foraging habitat. Because the project would remove suitable low quality habitat, but has a very low potential to

result in injury or death of foxes, the project is not likely to adversely affect the San Joaquin kit fox.

No-Build Alternative

There would be no impacts on the vernal pool fairy shrimp, vernal pool tadpole shrimp, Swainson's hawk or San Joaquin kit fox under the No-Build Alternative because there would be no construction.

Avoidance, Minimization, and/or Mitigation Measures

Vernal Pool Fairy Shrimp

Avoidance and minimization efforts would not be feasible for seasonal pool SP-1 for Alternatives 1 and 2 because it would be removed during construction of the proposed improvements. Additionally, because of its proximity to construction, there may be direct impacts on SP-2. The avoidance and minimization measure discussed under Section 2.3.1, *Wetlands and Other Waters* would avoid and minimize potential direct impacts on pool SP-2.

Compensate for Impacts to Habitat for Vernal Pool Fairy Shrimp

Compensation for the permanent loss of 0.071 acre and temporary impacts on 0.11 acre of habitat (SP-1 and SP-2, respectively) for the vernal pool fairy shrimp would be determined during the Section 10 consultation with U.S. Fish and Wildlife Service. Typically, direct effects are mitigated at a 2:1 or 3:1 ratio (acres preserved: acres affected). At this time, the Low-Effect Habitat Conservation Plan indicates that the City of Tulare will purchase preservation credits equal to 0.43 acre of vernal pool habitat for vernal pool fairy shrimp at the Deadman Creek Conservation Bank. The acreage or location of this compensatory mitigation may change based on final revisions to the project design and/or further coordination with the U.S. Fish and Wildlife Service.

Vernal Pool Tadpole Shrimp

Based on the results of protocol-level wet and dry season surveys, the vernal pool tadpole shrimp is not present in pools SP-1 and SP-2 and no avoidance or minimization measures are needed at these pools. The avoidance and minimization measure discussed under Section 2.3.1, *Wetlands and Other Waters* would avoid and minimize potential impacts on pool SP-2.

Swainson's Hawk

Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys

This measure was discussed above under the heading “Northern Harrier, White-tailed Kite, and Non-sensitive Migratory Birds” in the Environmental Consequences section.

Conduct Preconstruction Surveys for Swainson's Hawk Nests

If starting construction activities (including vegetation removal) before the breeding season is not possible, a qualified wildlife biologist with knowledge of Swainson's hawk biology and behavior would do nesting surveys in accordance with the Swainson's Hawk Technical Advisory Committee's 2000 *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* before the start of construction. Surveys will include a search of all trees within a 0.50-mile radius of the project area. If no active nests are found during these surveys, no additional avoidance or minimization measures are required.

Mitigate for Loss of Swainson's Hawk Foraging Habitat in Accordance with California Department of Fish and Game Requirements

To mitigate for the loss of foraging habitat within the project area, the City of Tulare would provide habitat management lands consistent with California Department of Fish and Game foraging habitat mitigation requirements for projects within 10 miles of an active nest. An active nest is defined as one that has been active within the previous 5 years.

To determine appropriate mitigation, the City of Tulare would contact the California Department of Fish and Game for recent records of nesting Swainson's hawks within 10 miles of the project area, do a records search of the current version of the California Natural Diversity Database, and use the results of the preconstruction surveys for the project and surrounding area (if done), to determine if an active nest is within 10 miles of the project area. If an active nest is found within 10 miles of the project area, the City of Tulare would provide habitat management lands for each 1 acre of urban development at ratios defined in the California Department of Fish and Game's 1994 *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California*. All habitat management lands protected under this requirement may be preserved by fee title or conservation easement on agricultural lands, or other suitable habitats (as approved by the California Department of Fish and Game) that provide foraging habitat for Swainson's hawk.

San Joaquin Kit Fox

Minimize and Avoid Temporary Construction Disturbances to San Joaquin Kit Fox

The City of Tulare or its contractor(s) would implement the following construction and operational requirements identified in the U.S. Fish and Wildlife Services' 1999 *Standardized Recommendations for the Protection of San Joaquin kit fox Prior To or During Ground Disturbance* (Standardized Recommendations):

- Mandatory contractor/worker awareness training would be done for all construction personnel. The awareness training would include a description of the San Joaquin kit fox and representative photographs of the species, the species' legal status and protection under the federal and California Endangered Species Acts, and the penalties for not complying with biological mitigation requirements.
- The contractor must clearly delineate the project boundaries and prohibit any off-road traffic outside these boundaries.
- At the end of each working day, the contractor would ensure that all excavated, steep-walled holes or trenches more than 2 feet deep be covered by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they would be thoroughly inspected by the biological monitor for trapped animals.
- The contractor would provide closed garbage containers for the disposal of all food-related trash items such as wrappers, cans, bottles, and food scraps. All garbage must be removed daily from the project site.
- No pets would be allowed on the project site.
- The contractor would immediately notify the City of Tulare if a dead, injured, or entrapped kit fox is found in the construction area. All work would be temporarily stopped until the California Department of Fish and Game and/or U.S. Fish and Wildlife Service are contacted to determine the appropriate course of action.

Avoid San Joaquin Kit Fox Dens by Conducting Preconstruction Den Searches and Implementing Protection Measures, if Necessary

The City of Tulare would retain a qualified biologist (as determined by U.S. Fish and Wildlife Service) to do a preconstruction survey no fewer than 14 days and no more than 30 days before the start of ground disturbance or any activity likely to affect the San Joaquin kit fox. The biologist would survey the proposed construction work area and a 200-foot area outside of the construction work area to identify suitable burrow

sites. The biologist would conduct den searches by systematically walking 30-foot-wide transects through the survey area. If a den is found during the survey, the biologist would measure the size; evaluate the shape of the den entrances; and note tracks, scat, prey remains, and recent excavations at the den site. The biologist would also determine the status of the dens and map the features. Dens would be classified in one of the following four den status categories defined by the U.S. Fish and Wildlife Service:

- **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 kit fox. Potential dens shall include the following: (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 have appropriate characteristics for kit fox use.
- **Known den:** Any existing natural den or manmade 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 radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox.
- **Natal or pupping den:** Any den used by kit foxes 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 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 1 or more entrances. A natal den, defined as a den in which 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 human-made 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.

Qualified biologists would monitor potential dens within the construction area for 3 days with tracking media or remote-sensor cameras. If determined to be vacant, these vacant dens would be removed by careful hand excavation or under the supervision of qualified biologists.

Written results of the surveys must be received by U.S. Fish and Wildlife Service and California Department of Fish and Game within 5 days after the completion of surveys and before the start of ground disturbance and/or construction activities likely to affect the San Joaquin kit fox. The City of Tulare would implement the mitigation specified below for each habitat feature that is found within the 200-foot-wide buffer area during the preconstruction survey.

Avoid San Joaquin Kit Fox Dens by Establishing and Observing Exclusion Zones

After preconstruction den searches have been done and before the construction activities begin, a qualified biologist/monitor would establish and maintain the following exclusion zones measured in a radius outward from the entrance or cluster of entrances of each den within the 200-foot buffer:

- **Potential and Atypical dens:** A total of 4–5 flagged stakes would be placed 50 feet from the den entrance(s) to identify the den location.
- **Known den:** Orange construction barrier fencing would be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing must be maintained until all construction-related disturbances have ended. At that time, all fencing must be removed to avoid attracting subsequent attention to the den.
- **Natal/pupping den:** The U.S. Fish and Wildlife Service must be contacted immediately if a natal or pupping den is discovered at or within 200 feet of the boundary of the construction area.

Construction and other project activities would be prohibited or greatly restricted within these exclusion zones. Only essential vehicular operation on existing roads and foot traffic should be permitted. If these exclusion zones cannot be followed, the U.S. Fish and Wildlife Service must be contacted.

If a known den or potential den that is later determined to be used by kit fox and cannot be avoided, a “take” authorization/permit from the U.S. Fish and Wildlife Service and the California Department of Fish and Game would be required.

Compensate for the Loss of Foraging Habitat for San Joaquin Kit Fox

The City of Tulare would compensate for permanent and temporary losses of San Joaquin kit fox foraging habitat resulting from construction of the project. At this time, the Low-Effect Habitat Conservation Plan indicates that the City of Tulare will purchase preservation credits equal to 76.41 acres of suitable habitat at the Sand Creek or Kreyenhagen Hills Conservation Bank. The acreages or location of compensatory mitigation may change based on final project design and/or further negotiation with the U.S. Fish and Wildlife Service.

2.3.4 Invasive Species

Regulatory Setting

On February 3, 1999, President Bill Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list currently 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

This information is taken from the *State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* (December 2011) and the *Revised State Route 99/Cartmill Avenue Interchange Improvement, Natural Environment Study* (July 2012).

Invasive plant species are species listed by the California Department of Food and Agriculture and other invasive plants designated by the California Invasive Plant Council.

Table 2.3-5 lists the invasive plant species identified by the California Department of Food and Agriculture and California Invasive Plant Council that were found within the biological study. Most of these species occur within the ruderal annual grassland and other ruderal areas, and along the edges of agricultural land.

**Table 2.3-5 Invasive Plant Species Observed in the
Biological Study Area**

Species	California Department of Food and Agriculture	California Invasive Plant Council
Tree-of-heaven (<i>Ailanthus altissima</i>)	C	Moderate
Slender wild oat (<i>Avena barbata</i>)	–	Moderate
Wild oat (<i>Avena fatua</i>)	–	Moderate
Ripgut brome (<i>Bromus diandrus</i>)	–	Moderate
Yellow star-thistle (<i>Centaurea solstitialis</i>)	C	High
Bermuda grass (<i>Cynodon dactylon</i>)	C	Moderate
Red-stemmed filaree (<i>Erodium cicutarium</i>)	–	Limited
Eucalyptus (<i>Eucalyptus</i> sp.)	–	Limited or Moderate
Mediterranean barley (<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>)	–	Moderate
Foxtail barley (<i>Hordeum murinum</i> ssp. <i>leporinum</i>)	–	Moderate
Italian ryegrass (<i>Lolium multiflorum</i>)	–	Moderate
Hyssop loosestrife (<i>Lythrum hyssopifolium</i>)	–	Limited
Rabbitsfoot grass (<i>Polypogon monspeliensis</i>)	–	Limited
Russian thistle (<i>Salsola tragus</i>)	C	Limited
Charlock (<i>Sinapis arvensis</i>)	–	Limited
Johnsongrass (<i>Sorghum halepense</i>)	C	–
Puncture vine (<i>Tribulus terrestris</i>)	C	–

Source: State Route 99/Cartmill Avenue Interchange Improvements Natural Environmental Study, July 2012.

Notes: The California Department of Food and Agriculture and California Invasive Plant Council lists assign ratings that reflect the California Department of Food and Agriculture and California Invasive Plant Council views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances.

The California Department of Food and Agriculture categories indicated in the table are defined as follows:

C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the commissioner.

The California Invasive Plant Council categories indicated in the table are defined as follows:

Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, and limited to widespread distribution; establishment dependent on disturbance.

Limited: Species with minor ecological impacts, low to moderate rates of invasion, and limited distribution; locally persistent and problematic.

Environmental Consequences

Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plant species and their seeds. The introduction and spread of invasive plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Most of the invasive plant

species in the biological study area occur in the small areas of annual grassland, ruderal areas, and along the edges of agricultural land.

The project has the potential to create additional disturbed areas for a temporary period and would increase the area regularly subject to disturbance by vehicular traffic. However, the implementation of the avoidance and minimization measures described below would avoid and minimize the introduction and spread of invasive plants as the result of the project. No further mitigation is proposed.

No-Build Alternative

There would be no impacts related to invasive species under the No-Build Alternative because there would be no construction.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of one or more of the following measures would avoid and minimize the introduction of new invasive species into the project area and the spread of invasive plant species to uninfested areas:

- Educate construction supervisors and managers on the importance of controlling and preventing the spread of noxious weed infestations.
- Coordinate with the Tulare County Agricultural Commissioner and/or the Tulare Weed Management Area to ensure that the appropriate best management practices are implemented for the duration of project construction.
- Treat small, isolated infestations with eradication methods that have been approved by or developed in conjunction with the Tulare County Agricultural Commissioner and/or Tulare Weed Management Area to prevent and/or destroy viable plant parts or seed.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use native, noninvasive species or non-persistent hybrids in erosion-control plantings to stabilize site conditions and prevent invasive species from colonizing.
- Use certified, weed-free, imported erosion-control materials (or rice straw in upland areas).

2.4 Cumulative Impacts

Regulatory Setting

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of 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.

California Environmental Quality Act Guidelines Section 15130 describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under the California Environmental Quality Act can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act can be found in 40 Code of Federal Regulations Section 1508.7 of the Council on Environmental Quality Regulations.

Affected Environment

The cumulative analysis for the project takes into consideration the other ongoing projects in the same geographic area, as well as planned land uses and transportation and circulation projects identified in the City of Tulare and Tulare County's general plan and policy documents. See Section 2.1.1.1, *Existing and Future Land Uses*, for a discussion of the existing and proposed projects that could affect regional resources and were considered in this cumulative analysis.

Global climate change was not included in this cumulative analysis. Climate change is discussed in Section 2.5, Climate Change.

Environmental Consequences

Cumulative impacts as they relate to each resource area are discussed below.

Human Environment

Land Use

The study area for evaluating cumulative land use impacts is the City of Tulare sphere of influence and its immediate vicinity. Most land in the immediate vicinity of the project is in agricultural use and zoned for commercial or residential development. The City of Tulare General Plan envisions primarily commercial and residential uses for the immediate vicinity of the project area, which would change its current agricultural use. Additional land use change would be associated with the acquisition of property for changes to existing roads and highways, including the widening of State Route 99. These planned changes in land use would be consistent with the goals and policies of the Tulare County Associated Governments Regional Transportation Plan, the City of Tulare's General Plan, and the County of Tulare's General Plan. The planned projects would not result in a cumulative impact and, accordingly, the proposed project would not contribute to a cumulative impact.

Growth

The study area for evaluating cumulative growth effects is the same as that described for land use. As discussed in Section 2.1.2, *Growth*, the proposed project would not substantially alter accessibility: the City and County have strong planning and growth management mechanisms to reduce growth pressure, and the project has been proposed to match the development trends and growth already projected for in local agency planning documents. Although the proposed project could facilitate increased development in the surrounding area by reducing congestion and making the region a more desirable place to live and work, this growth would be in alignment with current planning policies of the affected jurisdictions. The proposed project would not contribute to a cumulative impact.

Farmlands

The study area for evaluating cumulative farmland effects is the same as that described for land use. As discussed in Section 2.1.3, *Farmlands*, Alternative 1 would convert 81.9 acres of farmland to nonagricultural use, and Alternative 2 would convert 73.3 acres of farmland. Between 2004 and 2006, about 6,450 acres of farmland were converted to other uses in Tulare County, and other planned development in this study area would also result in the removal of additional land currently in agricultural uses. Therefore, there is a cumulative effect. However,

though the acreages that would be converted are fairly large, the value of the agricultural land to be converted is minimal because much of it is located between the highway and off-ramps, frontage roads or development. Only a small portion of this acreage is currently in agricultural use. Based on the location and fragmentary nature of most of the agricultural land to be converted, this project would contribute to the loss of agricultural land in the county, but it would not constitute a considerable contribution to this cumulative impact.

Community Impacts

The study area for evaluating cumulative growth effects is the same as that described for land use. As discussed in Section 2.1.4, *Community Impacts*, the proposed project would not divide a significantly cohesive neighborhood. Because there would be no effect, there is no potential to contribute to a cumulative impact.

Utilities and Emergency Services

The study area for evaluating cumulative growth effects is the same as that described for land use. The long-term effect of the project would be to reduce congestion, improve safety, and enhance accessibility to the project area. Project construction would have little or no effect on public services, except for temporary access interruptions during construction. There would be no considerable contribution to a cumulative impact.

Traffic and Transportation/Pedestrian and Bicycle Facilities

The analysis of cumulative effects is based on the plan/projection method authorized under Section 15130(b)(1)(B) of the California Environmental Quality Act Guidelines. The analysis relies on the Tulare County Association of Governments 2011 Regional Transportation Plan (including programmed road improvements) and travel demand model (calibrated for the proposed project). The study area for evaluating cumulative effects is focused mainly on the area used for the individual impact analysis, but considers regional traffic from the model.

Compared to projected levels of service in the year 2033 without the proposed project, the build alternatives would result in better levels of service on all of the intersections in the study area. Either build alternative would result in the same or better levels of service on all ramps and mainline road segments in the study area. Because the project would result in beneficial impacts or no impacts, it would not contribute to a cumulative impact.

Visual/Aesthetics

The existing character of the project area includes the freeway and interchange. In addition to the existing development surrounding the project site, two new large-scale retail/commercial developments are proposed on the existing agricultural lands surrounding the project site.

The Tulare Towne Center would be built northwest of Cartmill Avenue/State Route 99. A residential development would also be built south of East Cartmill Avenue and would include a church, community center, assisted-living facility, and a senior apartment complex. These projects would result in large-scale changes to the visual environment, requiring the conversion of agricultural lands to suburban land uses that are highly developed.

The proposed project would change the existing character of the area by removing eight large eucalyptus trees and widening the overpass, which would require more infrastructure and earthwork than the existing structure. However, an interchange is part of the existing visual environment, and the proposed interchange would not substantially alter the existing visual character. Therefore the proposed project, with implemented mitigation measures outlined in Section 2.1.7, *Visual/Aesthetics*, would not contribute to or result in cumulative impacts.

Cultural Resources

The study area for evaluating cumulative cultural resource impacts is the project footprint and a 0.5-mile radius. No known significant cultural resources would be affected by the project. There is always the potential that unknown cultural resources could be uncovered during project construction. Implementation of Caltrans' standard specifications would reduce the level of potential impact on cultural resources resulting from unanticipated discovery. There would be no impact on known significant cultural resources, and therefore no contribution to a cumulative impact.

Physical Environment

Hydrology and Floodplain

The project would have no effect on the floodplain and therefore would not contribute to a cumulative impact.

Water Quality and Stormwater Runoff

The study area for evaluating cumulative water quality and stormwater runoff effects is the Kaweah River basin. Stormwater runoff generated in the project area as a result of a small increase in impervious surfaces (12 or 10.5 acres) would be contained

within existing detention or proposed retention basins or conveyed to a Tulare Irrigation District ditch that discharges to agricultural fields. The drainage basins and plan would ensure that any additional runoff would be routed to existing detention and retention facilities. Effects from the project were considered in combination with effects from projects in the vicinity, which would also result in an increase in impervious surfaces.

The National Pollution Discharge Elimination System Construction General Permit requires that a stormwater pollution prevention plan is prepared for all projects greater than 1.0 acre in area. With best management practices in place for the proposed project and other projects, there would be minimal effect on water quality and stormwater runoff. There would be no contribution to a cumulative impact.

Geography/Soils/Seismic/Topography

The study area for evaluating cumulative geology and soils effects is the same as that for land use. Generally, the project vicinity is not seismically active and contains expansive soils. The project would increase the potential for damage from expansive soils and minimally for loss of topsoil. Other projects in the vicinity would similarly increase these potential effects. However, the proposed project is required, as are all projects in Tulare County, to meet regulations and standards associated with Universal Building Code Seismic Hazard Zone 4 hazards. The proposed project would not contribute to a cumulative impact related to seismicity or expansive soil.

Paleontology

The study area for evaluating paleontology impacts is the southern San Joaquin Valley. While sensitive paleontological units are located in the project vicinity, most of the project area sits on units that are not paleontologically sensitive. The proposed project would have minimal potential impacts to paleontological resources if either build alternative were selected. Measures in place to remove and curate any fossils found during construction of the project would minimize this potential impact. Other projects would have similar measures in compliance with the California Environmental Quality Act. Therefore, the proposed project would not contribute to a cumulative impact on paleontological resources.

Hazardous Waste/Materials

The study area for evaluating effects related to hazardous waste and materials is the project footprint and a 0.5-mile radius. Construction of the proposed project and other projects in the vicinity would result in potential exposure to or of hazardous

waste/materials related to ground-disturbing activities and the removal or modification of facilities and structures. Soils in the vicinity of roadways may be contaminated with aerially deposited lead, and agricultural soils may be contaminated with pesticides and other materials. Structures may contain lead-based paint, asbestos, or other hazardous materials. Avoidance and minimization measures in place to address these effects include completing a health and safety plan to test soils before construction and appropriately dispose of contaminated materials.

Other projects in the area would encounter many of the same potential effects associated with hazardous materials. However, all projects must comply with state and federal regulations to prevent releases of hazardous materials and to ensure worker and public safety. Implementation of avoidance, minimization, and mitigation measures would offset any potential project effects, ensuring that cumulative effects associated with hazardous materials are avoided. The proposed project would not contribute to a cumulative impact.

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 are consistent with buildout assumptions that are consistent with adopted demographic forecasts. So, an evaluation of air quality operational effects assumes future regional growth consistent with planned projections. The proposed project would improve mobility and overall traffic operation in the general vicinity, thereby lowering the concentration of pollutants emitted by the motor vehicles.

Construction Activities

Short-term effects on air quality during construction would be minimized through compliance with Caltrans specifications. Regulation VIII, imposed by the San Joaquin Valley Air Pollution Control District, requires that all projects implement activities to prevent, reduce, or mitigate fugitive dust emissions to reduce concentrations of fine particulate matter. Because these rules are required for all construction activities, emissions from other development projects in the region would be similarly reduced. Therefore, construction of the proposed project would not contribute to a cumulative regional or local air quality impact.

Operational Impacts

Proposed project operations were shown to reflect a minor increase in 2033 criteria pollutants compared with no-project conditions. While the vehicle miles traveled decreased, there would be a minor increase in emissions of criteria pollutants. However, these minor increases are not anticipated to result in a cumulatively considerable impact.

Carbon monoxide modeling indicated that the project would not cause or contribute to violations of the state or federal carbon monoxide ambient air quality standards, and therefore would not contribute to a cumulative impact. The project would not contribute to cumulative effects for particulate matter because it is not anticipated to result in elevated particulate matter concentrations.

Noise

The resource study area for the cumulative noise analysis is the same as the project study area. Traffic data used to predict noise levels in the project area included past, present, and reasonably foreseeable future projects in the general project vicinity. Cumulative traffic noise levels are not predicted to increase substantially as defined in the protocol as a result of all projects anticipated to occur in the area. Therefore, this project would not contribute to a cumulative noise impact.

Biological Environment

Natural Communities

Excluding seasonal pools, there are no natural communities of concern in the biological study area. The proposed project has no potential to contribute to a cumulative impact.

Wetlands and Other Waters

With the implementation of the compensatory measure described in Section 2.3.1, *Wetlands and Other Waters*, there would be no net loss of habitat functions and values for the wetlands and other waters (irrigation ditches and detention basins), and therefore the project would not contribute to a cumulative impact on wetlands and other waters.

Plant Species

The proposed project would have no effect on sensitive plant species, and therefore no potential to contribute to a cumulative impact.

Animal Species

Cumulative effects on the white-tailed kite, northern harrier, western burrowing owl, and other non-sensitive migratory birds, including raptors, would result from construction of other general development projects in Tulare County. This would further reduce potential or known occupied habitat for these species. Measures to avoid, minimize, and compensate for habitat loss would likely be implemented for these projects; however, there would likely still be a net loss. Construction of the proposed project would add to the cumulative loss of potential habitat for the white-tailed kite, northern harrier, western burrowing owl, and other non-sensitive migratory birds, including raptors. Implementation of measures to avoid, minimize, and mitigate effects (Section 2.3.2, Animal Species) would minimize the proposed project's contribution to cumulatively impacts on these species.

Threatened and Endangered Species

Cumulative effects on vernal pool fairy shrimp, vernal pool tadpole shrimp, San Joaquin kit fox, and Swainson's hawk habitat would result from construction of other general development projects in Tulare County, which would further reduce potential or known occupied habitat for these species. Measures to avoid, minimize, and compensate for habitat loss would likely be implemented for these projects; however, there would likely still be a net loss. Construction of the proposed project would add to the cumulative loss of potential habitat for the vernal pool fairy shrimp, San Joaquin kit fox, and Swainson's hawk (there would be no loss of habitat for the vernal pool tadpole shrimp). Implementation of measures to avoid, minimize, and mitigate effects would minimize the proposed project's contribution to cumulatively impacts on these species.

Invasive Species

Implementation of the avoidance and minimization measure described in Section 2.3.4, *Invasive Species*, would prevent potential cumulative impacts from the spread of invasive weeds during project construction.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures beyond those detailed in earlier resource discussions are required.

2.5 Climate Change under the California Environmental Quality Act

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 gases, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization's in 1988, has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are mainly concerned with the emissions of greenhouse gases related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

Two terms are typically used when discussing the impacts of climate change. “Greenhouse gas mitigation” is a term for reducing greenhouse gas emissions in order to reduce or “mitigate” the impacts of climate change. “Adaptation,” refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)².

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas-emitting sources. Conversely, the main source of greenhouse gas emissions in the United States is electricity generation followed by transportation. The dominant greenhouse gas emitted is carbon dioxide (CO₂), mostly from fossil fuel combustion.

There are four main strategies for reducing greenhouse gas emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled (VMT) 3) transition to lower greenhouse gas fuels and 4) improve vehicle technologies. To be most effective, all four should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce greenhouse gas emissions from transportation sources.

² http://climatechange.transportation.org/ghg_mitigation/

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the U.S. Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own greenhouse gas emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rulemaking to reduce greenhouse gas emissions for passenger car model years 2017-2025.

Executive Order S-3-05: (signed on June 1, 2005, by then-Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

Executive Order S-01-07: then-Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research to develop recommended amendments to the State California

Environmental Quality Act Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

Federal

Although climate change and greenhouse gas reduction is a concern at the federal level, currently there are no regulations or legislation that have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency nor the Federal Highway Administration has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on Federal Highway Administration's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the “National Clean Car Program” and Executive Order 13514- *Federal Leadership in Environmental, Energy and Economic Performance*. Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the interagency Climate Change Adaptation Task Force, which is engaged in developing a U.S. strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that

the U.S. EPA has the authority to regulate greenhouse gas. The court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings on greenhouse gases under Section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009³. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations. These steps were outlined by President Barack Obama in a memorandum on May 21, 2010.⁴

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty

³ <http://www.epa.gov/climatechange/endangerment.html>

⁴ <http://epa.gov/otaq/climate/regulations.htm>

passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On January 24, 2011, the U.S. EPA along with the U.S. Department of Transportation and the State of California announced a single timeframe for proposing fuel economy and greenhouse gas standards for model years 2017-2025 cars and light-trucks. Proposing the new standards in the same timeframe (September 1, 2011) signals continued collaboration that could lead to an extension of the current National Clean Car Program.

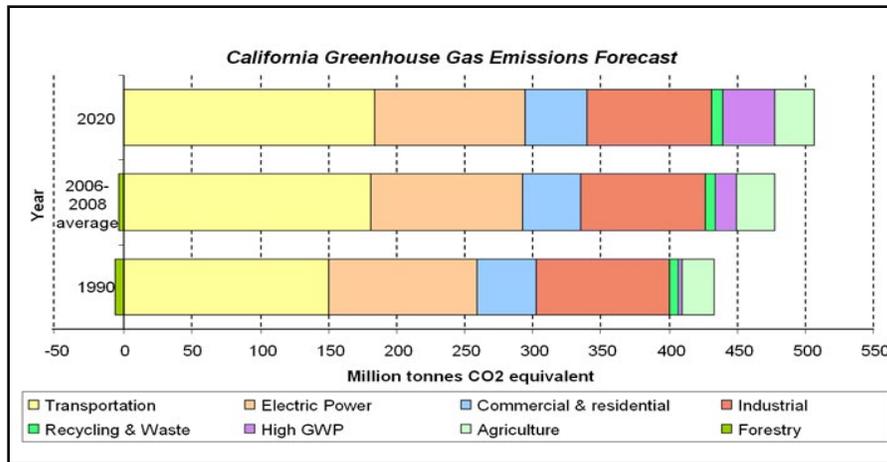
Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gas.⁵ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act Guidelines Sections 15064(h)(1) and 15130. To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult if not impossible task.

The AB 32 Scoping Plan contains the main strategies California will use to reduce greenhouse gas. As part of its supporting documentation for the Draft Scoping Plan, the Air Resources Board released the greenhouse gas inventory for California (Forecast last updated: 28 October 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the

⁵ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the SCAQMD (Chapter 6: : The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008.



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Figure 2.5-1 California Greenhouse Gas Forecast

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California’s greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006)).⁶

Environmental Consequences/Project Analysis

Operational Emissions

One of the main strategies in the Department’s Climate Action Program to reduce greenhouse gas emissions is to make California’s transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 2.5-2). To the extent that a project relieves congestion by enhancing operations and

⁶ Caltrans Climate Action Program is located at the following web address:
http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

improving travel times in high-congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced.

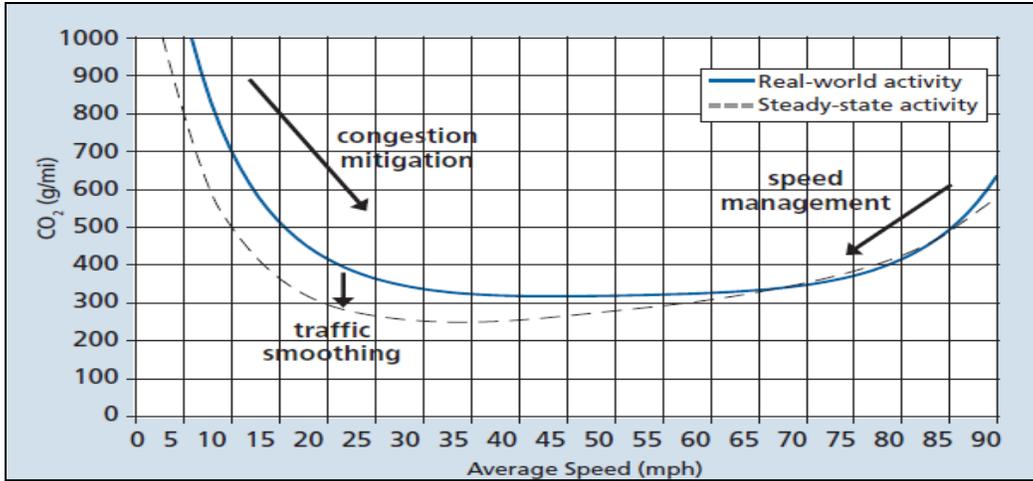


Figure 2.5-2 Possible Effect of Traffic Operation Strategies in Reducing On-Road CO₂ Emission⁷

As stated in Chapter 1, the primary need of the proposed project is to alleviate existing traffic congestion along Cartmill Avenue at the Cartmill Avenue/State Route 99 northbound off-ramp intersection and at the Cartmill Avenue/M Street/State Route 99 southbound off-ramp intersection. Congestion at these points also affects east-west circulation within the northern area of Tulare. Table 2.5-1 presents delay and levels of service at project area intersections for 2033.

Although the intersections differ between the no-build and build conditions (Alternative 1 and Alternative 2), a comparison of 2033 no-build conditions to 2033 build conditions (see Table 2.5-1) reveals expected reductions in delay and improvements in levels of service under both Alternative 1 and Alternative 2. With implementation of Alternative 1, delays at the Cartmill Avenue/M Street intersection in the morning peak hour are expected to be reduced from overflow conditions (level of service F) to 24.9 seconds per vehicle (level of service C), and in the evening peak hour delays at this intersection are expected to be reduced from overflow conditions (level of service F) to 41.1 seconds per vehicle (level of service D).

⁷ Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010) <<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>>

Also, although the State Route 99 northbound ramps intersect with different streets between no-build conditions (ramps intersect with Cartmill Avenue and with Road 100/Drive 103) and build conditions (ramps intersect with Cartmill Avenue), under Alternative 1, delay is expected to be reduced from overflow conditions (level of service F) to 8.2 seconds per vehicle (level of service A) in the morning peak hour and from overflow conditions (level of service F) to 28.6 seconds per vehicle (level of service C) in the evening peak hour.

The Cartmill Avenue/State Route 99 southbound on-ramp intersections under no-build conditions do not have a comparable intersection under Alternative 1 build conditions, so no comparison is provided here.

Table 2.5-1 Design-Year (2033) Levels of Service

Intersection	Morning Peak Hour		Evening Peak Hour	
	Delay (seconds/vehicle)	Level of Service	Delay (seconds/vehicle)	Level of Service
No-Build Conditions				
Road 100/Drive 103/State Route 99 Northbound Hook Ramps	Overflow Conditions	F	Overflow Conditions	F
Cartmill Avenue/M Street	Overflow Conditions	F	Overflow Conditions	F
Cartmill Avenue/State Route 99 Southbound On-Ramp	Overflow Conditions	F	Overflow Conditions	F
Cartmill Avenue/State Route 99 Northbound Off-Ramp/Drive 103 (M Street)	Overflow Conditions	F	Overflow Conditions	F
Alternative 1 Conditions				
Cartmill Avenue/M Street	24.9	C	41.1	D
Cartmill Avenue/State Route 99 Northbound Ramps	8.2	A	28.6	C
Cartmill Avenue/Akers Street	27.6	C	69.9	E
Alternative 2 Conditions				
Cartmill Avenue/M Street	23.9	C	41.2	D
Cartmill Avenue/State Route 99 Southbound Ramps	19.6	B	23.5	C
Cartmill Avenue/State Route 99 Northbound Ramps	14.3	B	34.3	C
Cartmill Avenue/Akers Street	29.5	C	78.2	E

Source: Supplemental Traffic Forecasts and Traffic Operations for the State Route 99/Cartmill Avenue Interchange Modification Memorandum, April 2011.

With implementation of Alternative 2, delays at the Cartmill Avenue/M Street intersection in the morning peak hour are expected to be reduced from overflow conditions (level of service F) to 23.9 seconds per vehicle (level of service C), and in the evening peak hour delays at this intersection are expected to be reduced from overflow conditions (level of service F) to 41.2 seconds per vehicle (level of service D).

Also, although the State Route 99 northbound ramps intersect with different streets between no-build conditions (ramps intersect with Cartmill Avenue and with Road 100/Drive 103) and build conditions (ramps intersect with Cartmill Avenue), under Alternative 2, delay is expected to be reduced from overflow conditions (level of service F) to 14.3 seconds per vehicle (level of service B) in the morning peak hour and from overflow conditions (level of service F) to 34.3 seconds per vehicle (level of service C) in the evening peak hour.

Under Alternative 2 in the morning peak hour, delays at the Cartmill Avenue/State Route 99 southbound ramps under no-build conditions are expected to be reduced from overflow conditions (level of service F) to 19.6 seconds per vehicle (level of service B) under build conditions (Cartmill Avenue/State Route 99 southbound ramps), and; during the evening peak hour, delays are expected to be reduced from overflow conditions (level of service F) to 23.5 seconds per vehicle (level of service C).

As shown in Table 2.5-1, all no-build intersections in 2033 are expected to experience overflow conditions and level of service F, whereas under either of the build alternatives, no intersections are expected to experience overflow conditions and level of service F.

In addition to the reductions in delay and improvements in level of service associated with implementation of the build alternatives, which are expected to reduce greenhouse gas emissions (particularly carbon dioxide), the Tulare County Association of Governments' *Final Subsequent Environmental Impact Report* for the *2011 Regional Transportation Plan* includes measures to reduce energy consumption, which in turn would reduce greenhouse gas emissions. As stated in the *Final Subsequent Environmental Impact Report* for the *2011 Regional Transportation Plan*, although energy consumption would increase under the *2011 Regional Transportation Plan*, the transportation improvements included in the *2011 Regional Transportation Plan* are designed to improve energy efficiency of the regional

transportation system by increasing use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. Some specific transportation-related mitigation measures included in the *Final Subsequent Environmental Impact Report* for the *2011 Regional Transportation Plan* to reduce energy consumption are the following:

- Project implementation agencies shall review energy impacts as part of any California Environmental Quality Act-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.
- During the design and approval of transportation improvements implemented under the proposed *2011 Regional Transportation Plan*, the following energy efficiency measures shall be incorporated when applicable:
 - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
 - Light-emitting diode technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with light-emitting diode technology.
- Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels, such as:
 - Expanding light-duty vehicle retirement programs.
 - Increasing commercial vehicle fleet modernization.
 - Implementing driver training modules on fuel consumption.
 - Reducing idling from construction equipment.
 - Incentivizing alternative-fuel vehicles and equipment.
 - Developing infrastructure for alternative fueled vehicles.
 - Implementing truck idling rules, devices, and truck-stop electrification.
 - Requiring electric truck refrigerator units.
 - Limiting use and developing fleet rules for construction equipment.

These measures to reduce energy consumption are just three of many measures included in the *Final Subsequent Environmental Impact Report* for the *2011 Regional*

Transportation Plan. In addition to transportation measures, the *Final Subsequent Environmental Impact Report* for the 2011 Regional Transportation Plan includes smart growth and green building strategies to reduce regional energy consumption.

As a supplement to the discussion above, carbon dioxide emissions were modeled with Caltrans CT-EMFAC model, which is described in the *State Route 99/Cartmill Avenue Interchange Improvements Project Draft Air Quality Technical Report*. Table 2.5-2 below provides a summary of CT-EMFAC modeled carbon dioxide emissions for existing and design-year conditions.

Table 2.5-2 Operational Carbon Dioxide (CO₂) Emissions

Scenario	Total VMT per year	CO ₂ metric tons/year
Existing Conditions	3,324,240,785	1,499,270.5
2033 No Project	6,573,788,700	2,990,915.9
2033 w/Project (Alts. 1 and 2)	6,571,840,695	2,991,655.4
Net Change 2033 w/Project vs. 2033 No Project	(1,948,005)	739.5
Net Change 2033 w/Project vs. Existing Conditions	3,247,599,910	1,492,384.9

Source: *State Route 99/Cartmill Avenue Interchange Improvement Project Air Quality Technical Report*, May 2009.

Notes: Parentheses indicate negative numbers (i.e., emission decreases).

Table represents a regional analysis, covering an area bounded by Avenue 280/Caldwell Avenue to the north, Tulare Avenue (State Route 137) to the south, Mooney Boulevard (State Route 63) to the east, and West Street to the west.

As shown in Table 2.5-2, when compared with no-build conditions, implementation of either build alternative is estimated to result in an increase in carbon dioxide emissions of approximately 740 metric tons per year. This is likely due to a slight increase in the percentage of vehicles operating at speeds greater than 55 miles per hour and less than 25 miles per hour, which is often associated with network efficiencies gained through congestion relief. This increase will likely be offset by the significant reductions in delay described previously, which would reduce the amount of time cars idle or travel at stop-and-go speeds (0–25 miles per hour).

As previously mentioned, 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. When compared with existing conditions, 2033 carbon dioxide emissions under either build alternative are anticipated to increase by approximately 1,492,395 metric tons per year. This increase is due to the large increase in vehicle miles traveled expected to occur over time, which is anticipated to occur as population increases.

It's important to note that carbon dioxide emissions modeled with CT-EMFAC are not necessarily an accurate reflection of what the true carbon dioxide emissions will be because carbon dioxide emissions are dependent on other factors that are not part of the model such as the fuel mix (EMFAC model emission rates are only for direct engine-out carbon dioxide emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

Limitations and Uncertainties with Modeling EMFAC

Although EMFAC can calculate carbon dioxide emissions from mobile sources, the model does have limitations when it comes to accurately reflecting carbon dioxide emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts.

Although work by EPA and the California Air Resources Board is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for carbon dioxide—for most vehicle classes emission factors are held constant which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled carbon dioxide emissions due to speed change will be slight.

The California Air Resources Board is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the California Air Resources Board has made this decision. Its website only states:

REVISION: Both the EMFAC and OFFROAD Models develop CO₂ and CH₄ [methane] emission estimates; however, they are not currently used as the basis for [CARB's] official [greenhouse gas] inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.

Other Variables

With the current science, project-level analysis of greenhouse gas emissions is limited. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected carbon dioxide emissions.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008 (<http://www.epa.gov/oms/fetrends.htm>)," which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now the highest since 1993. Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004 with projections at 48 percent in 2008.

Table 2.5-3 shows the alternatives for vehicle fuel economy increases studied by the National Highway Traffic Safety Administration in its Final EIS for New Corporate Average Fuel Economy (CAFE) Standards (October 2008).

Table 2.5-3 Model Year 2015 Required Miles Per Gallon by Alternative

No Action		25% Below Optimized	Optimized (Preferred)	25% Above Optimized	50% Above Optimized	Total Costs Equal Total Benefits	Technology Exhaustion
Cars	27.5	33.9	35.7	37.5	39.5	43.3	52.6
Trucks	23.5	27.5	28.6	29.8	30.9	33.1	34.7

Source: Final EIS, New Corporate Average Fuel Economy Standards, October 2008.

Second, near-zero carbon vehicles will come into the market during the design life of this project. According to a March 2008 report released by University of California Davis (UC Davis), Institute of Transportation Studies:

“Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress, automotive developers are now demonstrating over 100 fuel cell vehicles (FCVs) in California – several in the hands of the general public – with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade.

“A number of the U.S. DOE 2010 milestones for FCV development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the U.S. DOE suggest that 10,000s of vehicles per year from 2015 to 2017 would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles.”⁸

Third and as previously stated, California has recently adopted a low-carbon transportation fuel standard. The California Air Resources Board is scheduled to come out with draft regulations for low carbon fuels in late 2008 with implementation of the standard to begin in 2010.

Fourth, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, “Effects of Gasoline Prices on Driving Behavior and Vehicle Market,” (<http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf>) the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models have declined over the past five years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles.

Limitations and Uncertainties with Impact Assessment

Taken from p. 3-70 of the National Highway Traffic Safety Administration Final Environmental Impact Statement for New CAFE Standards (October 2008), Figure

⁸ Cunningham, Joshua, Sig Cronich, Michael A. Nicholas. March 2008. Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy, UC Davis, Institute of Transportation Studies, pp. 9-10.

2.5-3 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

“Cascade of uncertainties typical in impact assessments showing the “uncertainty explosion” as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses.”

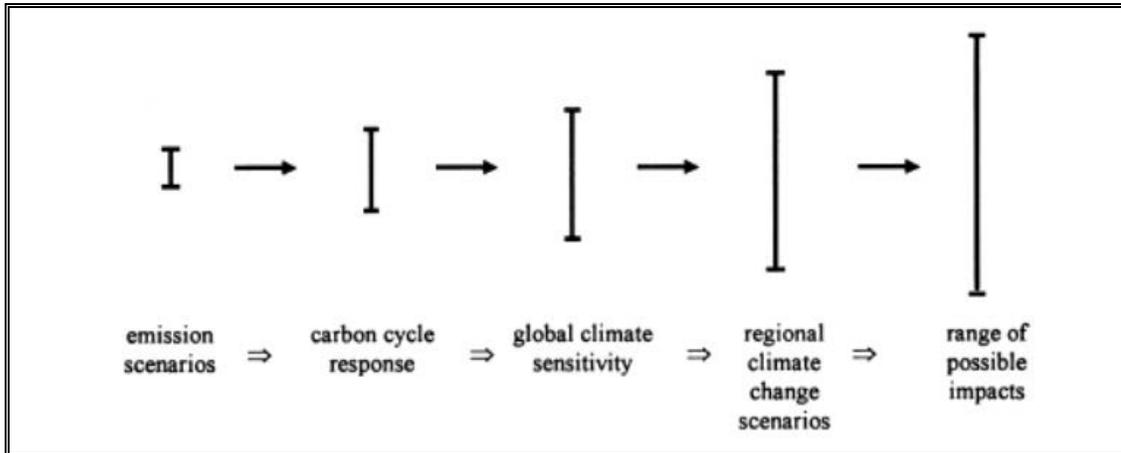


Figure 2.5-3 Cascade of Uncertainties

Much of the uncertainty in assessing an individual project’s impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in carbon dioxide emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of carbon dioxide equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by

9.7 up to 36.7 billion metric tons carbon dioxide from 2000 to 2030, which represents an increase of between 25 and 90 percent.⁹

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing “new” greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in carbon dioxide emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project level impact analysis are further borne out in the recently released Final Environmental Impact Statement completed by the National Highway Traffic Safety Administration CAFE standards, October 2008. As the text quoted below shows, even when dealing with greenhouse gas emission scenarios on a national scale for the entire passenger car and light truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

“In analyzing across the CAFE 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the model year 2011-2015 CAFE alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of CO₂, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of CO₂ emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions).” [NHTSA Draft EIS for New CAFE Standards, June 2008, pp.3-77 to 3-78]

⁹ Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. <http://www.ipcc.ch/SPM2feb07.pdf>.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Construction emissions potentially associated with this project have been identified in Table 2.2.6-4.

As described in Chapter 1, a traffic management plan would be prepared and approved by the City of Tulare and the Department before starting construction activities. On State Route 99, standard lane closures, directional lane closures, and construction staging would be required. Only one lane closure would be allowed at a time. In addition, implementation of Measures AQ-1 through AQ-4 in Section 2.2.6, *Air Quality*, would help to reduce construction emissions associated with project implementation.

CEQA Conclusion

As discussed above, both the future with-project and future no-build show increases in carbon dioxide emissions over the existing levels; the future build carbon dioxide emissions are higher than the future no-build emissions. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given carbon dioxide emissions increase means for climate change. Therefore, it is the Department's determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, the Department is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Assembly Bill 32 Compliance

The Department continues to be actively involved on the Governor’s Climate Action Team as the Air Resources Board works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Then-Governor Arnold Schwarzenegger’s Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state’s transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today’s level and a corresponding reduction in greenhouse gas emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion.

The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2.5-4: The Mobility Pyramid.



Figure 2.5-4 Mobility Pyramid

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. The Department is working closely with local jurisdictions on planning activities; however, the Department does not have local land use planning authority. The Department is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the U.S. EPA and the Air Resources Board. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the UC Davis.

Table 2.5-4 summarizes the Department and statewide efforts that the Department is implementing in order to reduce greenhouse gas emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 2.5-4 Climate Change/CO₂ Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix	1.2	4.2
				25% fly ash cement mix > 50% fly ash/slag mix	.36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce greenhouse gas emissions and potential climate change impacts from the project:

1. Standard erosion control and irrigation crossovers will be provided to accommodate future landscaping at the part of the interchange area where no construction would occur.
2. The project will incorporate the use of energy-efficient lighting, such as light-emitting diode traffic signals. Light-emitting diode bulbs — or balls, in the vernacular—cost \$60 to \$70 apiece but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The light-emitting diode balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects carbon dioxide emissions.
3. In addition, construction activities associated with implementation of the proposed project shall be required to comply with all San Joaquin Valley Air Pollution Control District rules and regulations.

Adaptation Strategies

Adaptation strategies refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts on habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency (now the Natural Resources Agency), through the interagency Climate Action Team, was directed to coordinate with local, regional, state, federal, public, and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts on California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, the Natural Resources Agency was directed to request the National Academy of Science to prepare a *Sea Level Rise Assessment Report* by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts on state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise for California.

Furthermore, Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance, and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final *Sea Level Rise Assessment Report*, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice

of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) The proposed project is not mandated to consider sea level rise because it is located near the eastern limits of the Central Valley, which would not be directly affected by sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted as part of the Executive Order on Sea Level Rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and public involvement. This chapter summarizes the results of efforts by the City of Tulare and Caltrans to fully identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Agency Coordination and Consultation

Lists containing federally endangered, threatened and proposed species that may occur in the project area were obtained from the U.S. Fish and Wildlife Service prior to field surveys and during preparation of environmental documents. The most updated species list is included in Appendix G. Coordination with the U.S. Fish and Wildlife Service has been underway to facilitate the habitat conservation plan process. Communications regarding this have been primarily between ICF staff and the U.S. Fish and Wildlife Service, as consultation is necessary under Section 10 of the federal Endangered Species Act because there is no federal nexus.

Coordination with the U.S. Fish and Wildlife Service is summarized below.

- November 2, 2007: ICF submitted a request to the U.S. Fish and Wildlife Service to conduct wet-season sampling of two seasonal pools in the project area. Email authorization to conduct wet-season sampling was granted by Rocky Montgomery of the Sacramento U.S. Fish and Wildlife Service office on November 7, 2007.
- May 27, 2008: ICF submitted a request to Rocky Montgomery at the U.S. Fish and Wildlife Service to conduct dry-season sampling of these two seasonal pools in the project area. Email authorization to conduct dry-season sampling was granted by Mr. Montgomery of the Sacramento U.S. Fish and Wildlife Service office on May 29, 2008.
- July 18, 2008: ICF submitted a 90-day report containing the results of wet season surveys to Rocky Montgomery at the U.S. Fish and Wildlife Service.

- July 21, 2008: ICF submitted a request to Rocky Montgomery at the U.S. Fish and Wildlife Service to transfer soil to Pete Balfour for processing and cyst analysis. Authorization to transfer soil was granted by Mr. Montgomery on July 22, 2008.
- August 7, 2008: ICF received a letter from Peter Cross of the U.S. Fish and Wildlife Service in response to the 90-day wet season report expressing their concern about the one immature fairy shrimp that was observed in pool 2 and encouraging ICF to make further efforts to confirm the species of Branchinecta that this individual represented. The letter stated that if the species could not be confirmed, they would likely assume it to be the federally-listed species.
- September 24, 2009: ICF submitted a 90-day report containing the results of dry season surveys to Mary Ann Owens, the new contact for the project at the U.S. Fish and Wildlife Service.
- March 8, 2011–June 27, 2011: ICF coordinated with Mike Thomas of the Sacramento U.S. Fish and Wildlife Service office regarding preparation of an Habitat Conservation Plan for the proposed project.)
- December 12, 2011: ICF sent an email to Mr. Thomas regarding who the Habitat Conservation Plan should be sent to at the U.S. Fish and Wildlife Service. Mr. Thomas replied the same day to send it to him.
- March 2, 2012: Low-Effect Habitat Conservation Plan submitted to Mr. Thomas at the U.S. Fish and Wildlife Service.
- May 2, 2012: ICF was copied on an email indicating that Nina Bicknese at the U.S. Fish and Wildlife Service had been assigned the Cartmill Avenue Low-Effect Habitat Conservation Plan.
- May 14, 2012: Phone conversation between ICF and Ms. Bicknese regarding the contents of the Low-Effect Habitat Conservation Plan.
- May 24, 2012: Ms. Bicknese asked for clarification on and sent questions about the Low-Effect Habitat Conservation Plan in electronic emails to ICF.
- May 29, 2012: Conference call between ICF and Ms. Bicknese about her comments on the Low-Effect Habitat Conservation Plan.
- May 30, 2012: Ms. Bicknese sent her comments in an electronic file to ICF via email.

- July 11, 2012: Revise Low-Effect HCP submitted to U.S. Fish and Wildlife Service.
- July 16, 2012: U.S. Fish and Wildlife Service comments on Revised Low-Effect Habitat Conservation Plan received.

No official coordination with the California Department of Fish and Game has taken place.

Coordination with the U.S. Army Corps of Engineers is summarized below.

- May 17, 2012: ICF submitted a Wetland Delineation to the U.S. Army Corps of Engineers.
- June 11, 2012: Erin Hanlon, U.S. Army Corps of Engineers, called ICF saying she had received the Wetland Delineation and had not yet reviewed it.
- June 14, 2012: ICF received an email from Ms. Hanlon indicating that the irrigation channels drain to the Tulare Lake Bed and requesting acreages for those features and changes to the map.
- June 14, 2012: ICF project manager, permitting staff, and botanist discussed the connection to the Tulare Lake Bed with Ms. Hanlon and got clarification on necessary changes to maps.
- July 19, 2012: ICF provided the U.S. Army Corps of Engineers with a revised wetland delineation.
- July 23, 2012: U.S. Army Corps of Engineers issued a Preliminary Jurisdictional Determination.

Native American coordination was conducted in support of the cultural resources study, and correspondence can be found in Appendix D of the Archaeological Survey Report. The Native American Heritage Commission was contacted in November 2008, and a search of its sacred lands database and list of Native American representative for the project area were requested. The sacred lands database search was negative, and a list of six Native American representatives or groups was received. Letters to Native American representatives were sent on December 8, 2008, and telephone calls followed. One return call was received from Mr. John Sartuche of

the Wukchumni Tribe. Mr. Sartuche did not have any specific concerns, but requested to be kept informed of the project's progress.

3.2 Public Involvement

Public involvement for the project included contacting local community-based organizations and other project stakeholders. The project would not affect residential properties; thus, no formal outreach to minority or low-income communities was deemed necessary. Similarly, because there are no known controversies associated with the proposed interchange alternatives, the process does not include a community participation plan beyond release of the environmental document for public circulation.

Public involvement efforts have resulted in identifying potential concerns related to project construction, including access, parking, and emergency service response times. These concerns and others that have been identified over the course of project development are addressed in project design, construction traffic management planning, and public project notifications.

3.2.1 Community-based Organizations

The Bethel Assembly of God/In Living Christ Church, in the southwest quadrant of the interchange, south of City Fire Station 63, would be directly affected by implementation of either build alternative. The City of Tulare and project design engineers engaged church representatives to discuss details of the project and identify possible concerns related to the church property and congregation.

Two representatives of the church attended the project development team meeting on May 14, 2009. At this meeting, the City of Tulare and design engineers provided information on the status of the project and discussed the closing of the overcrossing that would be required during construction. The church disclosed that as part of its growth plans, the church is designing a new church building and pursuing development approvals for a site east of State Route 99, south of Cartmill Avenue. The future church site is outside of the footprint of the proposed interchange improvements.

3.2.2 Stakeholders

Stakeholders include people, groups, organizations, agencies, and others who have an interest in and influence over the project. For this project, stakeholders include the City of Tulare, business and property owners next to the proposed project site, public

transportation providers (Tulare InterModal Express, Tulare County Area Transit, and Greyhound), the Tulare Joint Union High School District, the Tulare City School District, the Tulare County Office of Education, the City of Tulare Fire Resources Department, the County of Tulare Fire Department, and the Tulare Police Department.

3.2.3 Community Participation

Representatives for the former Cartmill Crossing North development project regularly attended project meetings. In addition, representatives for the ARCO AM/PM, the former Chevron/Stanley's Food Mart, and parties interested in future commercial developments next to the interchange attended the project development team meeting on May 14, 2009.

As part of consideration of the proposed full closure of the Cartmill Avenue overcrossing of State Route 99 during construction, the project design engineers and the City of Tulare met with the transportation director from both school districts to discuss the potential impacts of the project on transporting students to and from school. Neither district has routes that cross State Route 99 at Cartmill Avenue, nor any long-term plans to provide school bus service in this area.

The Tulare Office of Education provides transportation services for special education students from their homes to school and back each day on school buses provided under a contract with Student Transportation of America. Notification and coordination would be provided with the Tulare County Office of Education prior to closure of Cartmill Avenue over State Route 99.

Ongoing discussions with fire emergency response providers have indicated that the project may affect response times from the City of Tulare's Fire Station 63 in the southeast quadrant of the intersection of Cartmill Avenue and M Street. However, the City of Tulare Fire Department anticipates that response times can be maintained with the existing facilities. Ongoing coordination with City and County fire departments would continue over the course of project planning and implementation.

3.3 Public Comments on Draft Initial Study and Responses

A public notice announcing the availability of the draft environmental document was published in the Tulare Advance Register on April 18, 2012. The public notice featured the project location map, circulation dates, and other project information.

The public notice and Notice of Availability were mailed to residents, state, federal, and local officials, as well as other agencies and interested parties.

The draft environmental document was made available for comment for 30 days between April 18 and May 18, 2012. Eight comment letters have been received. Comment letters and responses are provided in Appendix H. Table 3.1 contains a list of individuals, organizations, and agencies that submitted comments on the draft environmental document.

Table 3.1 Organizations and Agencies on the Draft Environmental Document

Comment Number	Commenter	Date
Comment Letters		
1	Harvey May, Paloma Development	May 1, 2012
2	Delbert D. and Betty L. Lancaster- Strange	April 28, 2012
3	Nina Akin, Tulare Chamber of Commerce	May 16, 2012
4	Don Dorman, City of Tulare	May 16, 2012
5	Charles Clouse, TPG Consulting on behalf of Del Lago Development	May 16, 2012
6	Robert J. Keenan, Home Builders Association of Tulare/King Counties, Inc.	May 17, 2012
7	David Warner/Arnauld Marjollet, San Joaquin Air Quality Pollution Control District	May 17, 2012
8	Jeffery R. Single, California Department of Fish and Game	May 21, 2012

The following is a non-exhaustive list of topics addressed in public comments received during Commenting the circulation period:

- Support for Alternative 2
- Increased traffic on Cartmill Avenue
- Cumulative impacts
- Impacts from vibration
- Consider preparing Environmental Impact Report
- Air quality concerns
- Impacts to planned development
- Ensuring compliance with California Department of Fish and Game guidance for state listed species

Chapter 4 List of Preparers

4.1 Caltrans

This document was prepared by the following Caltrans Central Region staff:

Allam Alhabaly, Transportation Engineer. B.S., Engineering, California State University, Fresno, School of Engineering; 11 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Oversight review of the noise report and environmental document.

Abulrahim N. Chafi, Ph.D., P.E., Civil/Environmental Engineer. Registered Civil Engineer in the State of California. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry and M.S. Civil/Environmental Engineering, California State University, Fresno; 15 years of environmental technical studies experience. Contribution: Oversight review of the air quality report and environmental document.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 19 years of environmental technical studies experience. Contribution: Oversight review of the water quality report and environmental document.

Kay Goshgarian, Associate Environmental Planner. M.S., Environmental Management, University of San Francisco; B.S., Agricultural (Plant) Science, California State University, Fresno; 13 years of environmental, agricultural land and water use planning experience. Contribution: Oversight review of the community impact assessment and environmental document.

Kristen Helton, Senior Environmental Planner. B.A., Economics, California State University, Fresno; 19 years of environmental planning experience. Contribution: QA/QC review.

Jennifer Lugo, Associate Environmental Planner. M.A., History, California State University Fresno; B.A., History, Minor Political Science, California State University Fresno; 7 years of environmental planning experience; 1 year of architectural history experience. Contribution: Oversight review of the environmental document.

- G. William “Trais” Norris, III, Senior Environmental Planner. B.S., Urban Regional Planning, California State Polytechnic University, Pomona; 12 years of land use, housing, redevelopment, and environmental planning experience. Contribution: Senior oversight review of environmental document.
- Primavera Parker, Associate Environmental Planner. B.S., Biology/Ecology, California State University, Fresno; 11 years of biology experience. Contribution: Oversight review of the biology report and environmental document.
- Bill Ray, Associate Environmental Planner. M.A., Interdisciplinary Studies in Anthropology and English, California State University, Stanislaus; 22 years of archaeology, cultural resources management experience. Contribution: Technical edit of environmental document.
- Kimely Sawtell, Associate Environmental Planner. M.A., Geography, California State University, Fresno; B.S., Geography, California State University, Fresno; 11 years of environmental planning experience. Contribution: QA/QC review.
- Jane Sellers, Research Writer. B.A., Journalism, California State University, Fresno; more than 25 years of writing/editing experience, 11 years at Caltrans. Contribution: Oversight technical edit of environmental document.
- Lea Spann, Associate Environmental Planner. B.A., Environmental Studies, University of California, Santa Barbara; 12 years of hazardous waste/materials experience and 6 ½ years of environmental planning experience. Contribution: Oversight review of the initial site assessment for hazardous waste and environmental document.
- Matthew Voss, Associate Environmental Planner. B.S., Biological Sciences, California State University, Fresno; 10 years of environmental document writing experience. Contribution: QA/QC review.
- Dan Waterhouse, Associate Environmental Planner. B.S., Business Administration, California State University, Fresno; more than 20 years of environmental analysis experience. Contribution: QA/QC review.

4.2 ICF International

Shahira Ashkar, Project Manager/Archaeologist. M.A., Anthropology (Archaeology), University of Arizona; B.A., Anthropology (Archaeology) California State University, Sacramento; 19 years of environmental consulting experience. Contribution: General review; project description, archaeology review.

Claire Bromund, Project Manager. B.S., Biology, University of California, Davis; 14 years of environmental consulting experience. Contribution: Project description, purpose and need; paleontology for environmental document.

Dave Buehler, Senior Acoustical Engineer. B.S., Civil Engineering, California State University, Sacramento; 28 years of acoustical consulting experience. Contribution: Noise review.

Jennifer Greenman, Editor. M.A., English Composition, California State University, Sacramento; B.A., English Literature, California State University, Sacramento; 20 years experience in editing and document production. Contribution: Editing.

Jennifer Haire, Senior Wildlife Biologist. B.S., California State University, Fresno; 16 years of environmental consulting experience. Contribution: Wildlife resources review, U.S. Fish and Wildlife Service consultation.

Kathryn Haley, Historian. M.A., History (Public History), California State University, Sacramento; B.A., History, California State University, Sacramento; 8 years of environmental consulting experience. Contribution: Cultural resources, built environment.

Shannon Hatcher, Air Quality Specialist. B.S., Environmental Science and Environmental Health and Safety, Oregon State University, Corvallis; 9 years of air quality consulting experience. Contribution: Air quality and climate change review.

Christiaan Havelaar, Archaeologist. B.A., Anthropology (Archaeology, minor in history), California State University, Sacramento; 12 years of environmental consulting experience. Contribution: Cultural resources, archaeology.

Shannon Hill, Air Quality Specialist. B.A., Environmental Studies, California State University, Sacramento; 5 years of experience in environmental analysis. Contribution: Air quality and climate change.

Erin Hitchcock, Wildlife Biologist. B.S., Wildlife, Fish, and Conservation Biology, University of California, Davis; 7 years of environmental consulting experience. Contribution: Wildlife resources.

Julia Hooten, Project Coordinator, Generalist. B.A., Geography (Biology/Physical Environment), California State University, Sonoma; 3 years of environmental consulting experience. Contribution: Land use, community impacts, farmlands, utilities, general organization and review.

Jessica Hughes, Botanist. M.S., Botany and Plant Pathology, Michigan State University; B.S., Biology, Central Michigan University; 5 years of environmental consulting experience. Contribution: Vegetation and wetland resources.

Jody Job, Publication Specialist; 32 years of publication and document production experience. Contribution: Document format and coordination.

Eric Link, GIS Specialist. M.S. (in progress), Conservation Biology, California State University, Sacramento; B.S., Ecology, La Sierra University; GIS Certificate, University of California, Riverside; 8 years of environmental consulting experience. Contribution: Geographical Information Systems.

Nathan Martin, Senior Water Quality Specialist. M.A., Public Policy, University of Southern California; B.A., Environmental Studies (minor in biology), California State University, Sacramento; 10 years of experience in water quality impact assessment. Contribution: Water quality, hydrology, floodplain.

Christine McGeever, Editor. B.A., Journalism, California State University, San Jose; 15 years of technical editing experience. Contribution: Editing.

Tami Mihm, Editor. B.S., Environmental Policy Analysis and Planning, University of California, Davis; AICP; 18 years environmental consulting experience; 1 year editing and document production experience. Contribution: Editor.

Tina Sorvari, Project Coordinator/Generalist. B.A., Anthropology, California State University, Sacramento; 11 years of environmental consulting experience. Contribution: Hazards and hazardous materials, geology.

Jennifer Stock, Senior Landscape Architect. B.L.A., Landscape Architecture, Pennsylvania State University, University Park; 11 years of visual impact assessment experience. Contribution: Visual impacts.

Jason Volk, Noise Specialist. B.S., Mechanical Engineering (with honors), North Carolina State University, Raleigh; 10 years of noise impact assessment experience. Contribution: Noise.

Lisa Webber, Senior Botanist. M.S., Botany, University of Massachusetts, Amherst; B.A., Biology, University of California, Santa Cruz; 18 years of environmental consulting experience. Contribution: Vegetation and wetland resources review.

4.3 Omni-Means

Joseph W. Weiland, Principal/Project Manager. B.S., Civil Engineering, California State University, Chico; 22 years of experience. Contribution: Project description, purpose and need, traffic and transportation analysis.

4.4 The Twining Laboratories/Moore Twining Associates

Philip Marquez, Supervisor. B.S., Biology, California State University, Fresno; 10 years of experience. Contribution: Environmental Site Assessment, Initial Site Assessment, review of hazardous materials section.

4.5 BSK Associates

Mark Pomaville, Project Manager. B.S., Natural Resources Management, Cal Poly, San Luis Obispo, CA; 22 years of experience. Contribution: Initial Site Assessment, Preliminary Site Assessment.

Chapter 5 Distribution List

State Agencies

Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

Dr. Jeffrey R. Shingle
Department of Fish & Game District 4
1234 East Shaw Avenue
Fresno, CA 93710

Jennifer H. Taylor
Caltrans, District 6
855 M Street, Suite 200
Fresno, CA 93721

Jennifer Lugo
Caltrans, District 6
855 M Street, Suite 200
Fresno, CA 93721

Regional Water Quality Control Board
District 5
1685 "E" Street, Suite 100
Fresno, CA 93706-2007

San Joaquin Valley Air Pollution
Control District
Southern Region
34946 Flyover Court
Bakersfield, CA 93308

State Clearinghouse
1400 10th Street
Sacramento, CA 95814

William "Trais" Norris
Caltrans, District 6
855 M Street, Suite 200
Fresno, CA 93721

Local Agencies and Elected Officials

Craig Vegvoda, City Council Member
Tulare City Hall
411 East Kern Avenue
Tulare, CA 93274

David Macedo, City Council Member
Tulare City Hall
411 East Kern Avenue
Tulare, CA 93274

Mark Watte, City Council Member
Tulare City Hall
411 East Kern Avenue
Tulare, CA 93274

Melvin "Skip" Barwick, Vice Mayor
Tulare City Hall
411 East Kern Avenue
Tulare, CA 93274

Tulare City Hall
411 East Kern Avenue
Tulare, CA 93274

Tulare County Association of Governments/
LAFCO
210 N. Church Street, Suite B
Visalia, CA 93291

Tulare County Resource Management Agency
Planning Department
5961 S. Mooney Boulevard
Visalia, CA 93277

Tulare County Resource Management Agency
Engineering Department
5961 S. Mooney Boulevard
Visalia, CA 93277

Tulare Irrigation District
6826 Avenue 240
Tulare, CA 93274

J & M Thomas Ranch, Inc.
715 E. Oakdale Avenue
Tulare, CA 93274

Tulare Public Library
475 North M Street
Tulare, CA 93274

Albers Rentals
14470 Euclid Avenue
Chino, CA 91710

Wayne Ross, Mayor
Tulare City Hall
411 East Kern Avenue
Tulare, CA 93274

Albers Central Valley LLC
6241 Joaquin Street
Chino, CA 91710

Federal Agencies

Del Lago Development Company
222 N. Garden Street, Suite 400
Visalia, CA 93291

U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

JGSS Food Service
2702 Vinyard Place
Fowler, CA 93625

Organizations and Property Owners

Flyers/Nella
Attention: Robert Foster
2360 Lindbergh Street
Auburn, CA 95602

Pre & Tulare Holdings LLC
Attention: Patty Rocha
1407 N. Retherford Street
Tulare, CA 93274

Living Christ Church of Tulare
2516 N. M Street
Tulare, CA 93274

Chopra Living Trust
858 N. Cherry Street, Suite E
Tulare, CA 93274

The Nichols 2005 Family Trust
13672 1st Avenue
Hanford, CA 93230

Citizen's Business Bank
701 N. Haven Avenue
Ontario, CA 91764

Duane & Sharon Nichols
21202 Avenue 296
Exeter, CA 93221

N & M Troiani Trust
1600 Ben Franklin Avenue
Tulare, CA 93274

Cary & Connie Stanley
14385 Avenue 232
Tulare, CA 93274

Bethel Assembly of God
2516 N. M Street
Tulare, CA 93274

The Lanting Family Trust
Attn: Robert Wagner
200 N. Midland Street
Visalia, CA 93291

Moranbah Farms, Inc.
3740 W. Caldwell Avenue
Visalia, CA 93277

Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

Appendix A. • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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I. AESTHETICS: Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Appendix A. • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

IV. 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 Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Appendix A. • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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V. CULTURAL RESOURCES: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VI. GEOLOGY AND SOILS: Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Expose people or structures to 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VII. GREENHOUSE GAS EMISSIONS: Would the project:

Appendix A. • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. 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?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix A. • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix A. • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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XI. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XII. NOISE: Would the project result in:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| (f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XIII. POPULATION AND HOUSING: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XIV. 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: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|

Appendix A. • California Environmental Quality Act Checklist

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XV. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix A. • California Environmental Quality Act Checklist

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix B Natural Resource Conservation Service AD 1006 Form

U.S. Department of Agriculture FARMLAND CONVERSION IMPACT RATING							
PART I (To be completed by Federal Agency)				Date Of Land Evaluation Request 12/7/10			
Name of Project <i>Cartmill Avenue State Route 99 Interchange Project</i>				Federal Agency Involved NA			
Proposed Land Use <i>Transportation</i>				County and State <i>Tulare, CA</i>			
PART II (To be completed by NRCS)				Date Request Received By NRCS <i>12-10-10</i>		Person Completing Form: <i>Luzana Storie</i>	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>			YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated <i>550,347</i>	Average Farm Size <i>223</i>	
Major Crop(s) <i>Cotton, Alfalfa, Citrus</i>		Farmable Land In Govt. Jurisdiction Acres: <i>638,789</i> % <i>20.7</i>		Amount of Farmland As Defined in FPPA Acres: <i>867,965</i> % <i>28.1</i>			
Name of Land Evaluation System Used <i>California Storie System</i>		Name of State or Local Site Assessment System NA <i>None</i>		Date Land Evaluation Returned by NRCS <i>12-15-10</i>			
PART III (To be completed by Federal Agency)				Alternative Site Rating			
A. Total Acres To Be Converted Directly				Site A	Site B	Site C	Site D
B. Total Acres To Be Converted Indirectly				63.5	56		
C. Total Acres In Corridor				18.4	17.3		
PART IV (To be completed by NRCS) Land Evaluation Information				81.9	73.3		
A. Total Acres Prime And Unique Farmland							
B. Total Acres Statewide Important or Local Important Farmland							
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				<i>.00009</i>	<i>.00008</i>		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				<i>N/A</i>	<i>N/A</i>		
PART V (To be completed by NRCS) Land Evaluation Criterion							
Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				<i>90</i>	<i>90</i>		
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>				Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use				(15)	12	12	
2. Perimeter In Non-urban Use				(10)	6	6	
3. Percent Of Site Being Farmed				(20)	15	15	
4. Protection Provided By State and Local Government				(20)	0	0	
5. Size Of Present Farm Unit Compared To Average				(10)	7	7	
6. Creation Of Non-farmable Farmland				(10)	4	4	
7. Availability Of Farm Support Services				(5)	5	5	
8. On-Farm Investments				(20)	17	17	
9. Effects Of Conversion On Farm Support Services				(10)	0	0	
10. Compatibility With Existing Agricultural Use				(10)	2	2	
TOTAL SITE ASSESSMENT POINTS				160	68	68	
PART VII (To be completed by Federal Agency)							
Relative Value Of Farmland (From Part V)				100	<i>90</i>	<i>90</i>	
Total Site Assessment (From Part VI above or local site assessment)				160	<i>68</i>	<i>68</i>	
TOTAL POINTS (Total of above 2 lines)			260	<i>158</i>	<i>158</i>		
Site Selected:		Date Of Selection		Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:							
Name of Federal agency representative completing this form: <i>(See Instructions on reverse side)</i>				Date: <i>12-20-10</i>			

Form AD-1006 (03-02)

Appendix C Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. Box 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711



*Flex your power!
Be energy efficient!*

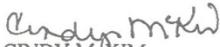
July 20, 2010

TITLE VI POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page:
http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.


CINDY MCKIM
Director

"Caltrans improves mobility across California"

Appendix D Summary of Relocation Benefits

California Dept. of Transportation Relocation Assistance Program

Relocation Assistance Advisory Services

The California Department of Transportation (Caltrans) would provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of Caltrans' acquisition of real property for public use. Caltrans would assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales prices and rental rates of available housing. Non-residential displacees would receive information on comparable properties for lease or purchase.

Residential replacement dwellings would be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displacees would be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex, or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area.

Residential Relocation Payments Program

For more information or a brochure on the residential relocation program, please contact Mike Whitlock, City of Tulare Engineer, at mwhitlock@ci.tulare.ca.us, (559) 684-4207, or 411 East Kern Avenue, Tulare, CA 93274.

The brochure on the residential relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/residential_english.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/residential_spanish.pdf.

If you own or rent a mobile home that may be moved or acquired by Caltrans, a relocation brochure is available in English at http://www.dot.ca.gov/hq/row/pubs/mobile_eng.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf.

Business and Farm Relocation Assistance Program

For more information or a brochure on the relocation of a business or farm, please contact Mike Whitlock, City of Tulare Engineer, at mwhitlock@ci.tulare.ca.us (559) 684-4207, or 411 East Kern Avenue, Tulare, CA 93274.

The brochure on the business relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/business_sp.pdf.

Additional Information

No relocation payment received would be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project would not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments would not be required to move unless at least one comparable “decent, safe, and sanitary” replacement residence, open to all persons regardless of race, color, religion, sex, or national origin, is available or has been made available to them by the state.

Any person, business, farm, or non-profit organization, which has been refused a relocation payment by Caltrans, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or the Caltrans’ Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal counsel at his/her expense. Information about the appeal procedure is available from Caltrans Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans’ laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of Caltrans’ relocation programs.

Important Notice

To avoid loss of possible benefits, no individual, family, business, farm, or non-profit organization should commit to purchase or rent a replacement property without first contacting the City of Tulare at:

City of Tulare
411 East Kern Avenue
Tulare, CA 93274

Appendix E Minimization and/or Mitigation Summary

Relocation and Property Acquisitions

All property acquisitions would be done in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the California Relocation Act. In accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 United States Code 4601–4655), relocation assistance is required to be provided to any person, business, farm, or nonprofit operation displaced because of the acquisition of real property by a public entity for public use. It provides for fair and equitable treatment of persons whose property will be acquired. The programs and assistance provided under the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 would be available to all eligible recipients without discrimination. See Appendices C and D for a copy of Caltrans' Title VI Policy Statement and information on the Caltrans Relocation Assistance Program.

Traffic

Prepare and Implement Traffic Control Plan

The City of Tulare, in coordination with Caltrans, would prepare and implement a traffic control plan as part of the overall construction management plan. Contractor compliance with the traffic control plan would be required as a provision of the construction contracts and implemented throughout the course of project construction.

The traffic control plan would include the following elements:

- A plan for communicating construction activities with transit operators, emergency service providers, businesses, and residences in the project vicinity—Advance notice would be provided regarding construction work and any anticipated delays and temporary road closures.
- An access and circulation plan for use by emergency vehicles when traffic control measures are in effect—When traffic control measures are in place, advance notice would be provided to local fire and police departments to ensure that alternative evacuation and emergency routes are designed to maintain response times.

- A plan to maintain existing or provide temporary vehicular access to driveways or private roads affected by construction activities—Advance notice would be provided to property owners notifying them if their access will be temporarily closed and the estimated duration of the closure. Closures can extend only during the hours of 8 a.m. to 5 p.m. unless alternative access is provided.
- A plan to maintain existing non-motorized access or provide detour and warning signs in construction areas.
- A plan to provide adequate parking for construction-related vehicles throughout the construction period—Construction-related vehicles would not be parked in such a manner that disrupts automobile, bicycle, or pedestrian traffic.
- Limit delivery of construction materials (including rock and concrete) between the hours of 7 a.m. and 10 a.m. and 3 p.m. to 6 p.m. to State Route 99 only, to avoid more congested morning and evening hours on local roads.
- A plan to implement traffic controls in the construction area in accordance with standards set forth in the *California Manual on Uniform Traffic Control Devices* if the normal traffic flow is affected by construction activities.
- A plan to implement traffic controls at haul route crossings within the construction area in accordance with standards set forth in the *California Manual on Uniform Traffic Control Devices*.
- A signage plan—Signs giving advance notice of upcoming construction activities, roadway closures and detour routes would be posted at least one week in advance so that motorists will be able to avoid traveling through the project area during these times if they choose.
 - Construction warning signs would be posted in accordance with standards set forth in the *California Manual on Uniform Traffic Control Devices* in advance of the construction area and at any intersection that provides access to the construction area.
 - Signs would be posted at all active construction areas giving the name and telephone number or e-mail address of the City and/or County staff person who is both designated to receive complaints regarding construction traffic and has the contractual authority to enforce provisions related to each complaint.

- A requirement that written notification would be provided to contractors regarding appropriate routes to and from the construction site, and the weight and speed limits on local roads used to access the construction site.

Aesthetics/Visual Resources

Place New Utilities Underground

New utilities would be placed underground. Where feasible and consistent with applicable regulations, the project sponsor would place new utilities underground to minimize their visual intrusion on the landscape.

Implement Project Landscaping Plan

Consistent with the Land Use and Conservation and Open Space Elements of the City of Tulare’s general plan, the landscape architect or landscape contractor and the interchange contractor would refer to Policy LU-13.9, Gateway/Streetscape Improvements: “The City shall visually enhance key gateways (e.g., city limit entries on Highways 99/137) and major thoroughfares using the following: street trees, welcome signs, decorative lighting, archways, and other streetscape design techniques”; and Policy COS-2.5, Planting of Native Vegetation: “The City shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.” This would help to maintain the local character, improve aesthetics, and reduce the visual scale of proposed project.

The project landscape architect or landscape contractor and the interchange contractor would adhere to the following practices in implementing the project landscaping plan:

- The species composition of open-space areas will reflect species that are native to the project area, or other climatically adapted species.
- Under no circumstances will any invasive plant species be used at any location.
- Vegetation will be planted within 2 years following project completion.
- Design of the landscaping plan would try to maximize the use of planting zones that do not need irrigation, such as seeding with a native grassland and wildflower meadow mix, and incorporate aesthetic features, such as a cobbling swales or shallow detention areas, that reduce or eliminate the need for an irrigation system.

- If an irrigation system is required, an irrigation and maintenance program will be implemented during the plant establishment period and carried on, as needed, to ensure plant survival.
- If an irrigation system is required, areas that are irrigated will use a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. To avoid undue water flows, the irrigation system will be managed in such a manner that any broken spray heads, pipes, or other components are fixed within 1–2 days, or the zone or system will be shut down until it can be repaired.

Water Quality and Storm Water Runoff

Caltrans Standard Specifications Section 7-1.01G requires the construction contractor to implement pollution control practices related to construction projects via a Stormwater Pollution Prevention Plan. Implementation of best management practices included in the Caltrans's 2003 *Storm Water Management Plan* would help reduce runoff related impacts from the construction site. In addition, implementation of the Caltrans Statewide Permit along with the *Storm Water Management Plan* would help avoid stormwater quality-related impacts. Such impacts are reduced by implementation of best management practices, which include erosion control, pollution prevention, treatment, construction and maintenance best management practices.

Geology/Soils

Implement Recommendations in the Revised Preliminary Geotechnical Design and Materials Report

The Revised Preliminary Geotechnical Design and Materials Report provides recommendations regarding earthwork and grading, foundation construction, structural wall backfill, lateral earth pressures and frictional resistance, earthwork factors, embankment stability and settlement, corrosion potential, trench excavation and backfill, excavation stability, and surface drainage controls. The recommendations would be included in the construction contract and implemented as necessary to reduce potential impacts.

Paleontology

The following avoidance and minimization measures for the build alternatives would further reduce the potential for impacts to sensitive paleontological resources in the project area:

- There will be no major excavation deeper than 6 feet (deeper excavation for traffic signal poles would disturb only a small amount of material and is not considered major). If project construction plans change to include major deep excavation, or if paleontological resources are discovered at the job site, the Caltrans Paleontology Coordinator would be notified immediately and the project plans would be reevaluated by the Paleontology Coordinator and a Principal Paleontologist if necessary. Appropriate mitigation measures following Caltrans Standard Environmental Reference Chapter 8 – Paleontology would be implemented.
- Project construction personnel would comply with Caltrans Standard Specifications 14-7 Paleontological Resources.
- If paleontological resources are discovered at the job site, workers would not disturb the material and immediately stop all construction within a 60-foot radius of the discovery and protect the area.
- Workers would not take paleontological resources from the job site. Caltrans would investigate and modify the dimensions of the protected area if necessary. Work would not resume within the specified radius of the discovery until authorized

Hazards and Hazardous Materials

Lead-based Paint and Aerially Deposited Lead

Roadway striping within the project limits contains lead-based paint. If striping is removed by itself, separate from roadway pavement grindings, soluble lead testing for better hazardous waste characterization will be completed. Aerially-deposited lead is present in surface soils in nonhazardous levels. Special provisions would be included in the construction contract. Contractors would be required to prepare and work under a site-specific health and safety plan (and/or a Lead Compliance Plan) that would address worker and public safety when working with lead and other construction-related materials within the project right-of-way. Any abatement work will need appropriate licensing and training for proper handling and disposing of asbestos- and lead-containing materials.

Potential Hazardous Waste Sites

Further mitigation is not expected to be necessary at Moore Aviation because contamination has been reduced to near or below regulatory levels as a result of

remediation. The Health and Safety Plan would address worker and public safety to minimize any potential exposure.

Mitigation is not expected at the gas stations. However, due to right-of-way acquisition, a site check may be required, specifically at the ARCO AM/PM, to determine if any contamination has occurred in areas to be impacted. If contamination is found, the responsible party(ies) will be required to define the lateral and vertical extent and perform the clean-up to regulatory standards. Any remedial activity would occur before acquiring the parcels. If necessary, tanks would be taken out of service, which includes removal of underground storage tanks, aboveground storage tanks, product lines and fuel pump islands.

Air Quality

If Detour Option 2 is Chosen, an All-Way Stop Control will be Installed

Operations at the Avenue 264/State Route 99 southbound ramps intersection would be improved to level of service C or better with implementation of this measure.

Implement Dust Control Plan to Comply with San Joaquin Valley Air Pollution Control District's Regulation VIII

Implementation of a dust control plan under the San Joaquin Air Pollution Control District's Regulation VIII is considered sufficient to reduce construction emissions of fugitive dust by 45 percent or more.

Reduce Construction Exhaust Emissions of NO_x to Comply with San Joaquin Valley Air Pollution Control District's Rule 9510

Feasible reduction of construction exhaust emissions of NO_x to comply with Rule 9510 includes the use of construction equipment powered by engines that meet, at a minimum, Tier II emission standards as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.

The San Joaquin Air Pollution Control District recommends incorporating, as a condition of project approval, a requirement that off-road construction equipment used on the site achieves fleet average emissions equal to or less than the Tier II emissions standard of 4.8 grams of NO_x/horsepower-hour. This can be achieved through any combination of uncontrolled engines and engines complying with the minimum of Tier II emission standards.

Another option for construction emission exhaust reduction is entering into a voluntary emission reduction agreement between the project applicant and the San Joaquin Air Pollution Control District. The San Joaquin Air Pollution Control District recommends as a condition of approval that applicants demonstrate having successfully entered into an emission reduction agreement with the district before the issuance of the first building permit. San Joaquin Air Pollution Control District staff members are available to meet with project applicants to discuss voluntary emission reduction agreements for specific projects.

Implement California Department of Transportation Standard Specifications, Sections 14-9.01 and 14.02

To control the generation of construction-related emissions, the project applicant will follow Caltrans' Standard Specifications, Sections 14-9.01 and 14.02. A description of Caltrans' Standard Specifications is provided below:

- Section 14-9.01, Air Pollution Control:
 - Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in California Government Code, Section 11017.
 - Do not burn material to be disposed of.
- Section 14.02, Dust Control:
 - Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01.
 - Apply water under Section 17, Watering.
 - Apply dust palliative under Section 18, Dust Palliative.
 - If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work will be paid for as extra work as specified in Section 4-1.03D, Extra Work.

Noise

With regard to traffic noise, no avoidance, minimization, and/or noise abatement measures are required. With regard to construction noise, measures indicated in Section 14-8.02 Noise Control in the Caltrans Standards Specifications would be implemented:

- Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- 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.

No additional avoidance, minimization, and/or noise abatement measures are required for traffic or construction noise.

Wetlands

Indirect effects on SP-2 would be avoided by implementing erosion control measures in the adjacent areas to prevent soil or other materials from entering SP-2 (both build alternatives). The erosion control measures would be placed in areas that are upslope of the seasonal pool and/or when work is within 50 feet of the seasonal pool.

Locations of erosion control features would be reviewed by a qualified biologist and identified on the final grading plans and construction specifications.

Natural/biodegradable erosion control measures (i.e., coir rolls, straw wattles, straw placement over disturbed areas) would be used. Plastic monofilament netting (erosion control matting) would not be allowed because small wildlife can become entangled in this type of erosion control material. Previously disturbed areas would be hydroseeded with native plant species upon project completion.

As part of the permitting process, the City of Tulare would compensate for permanent impacts on waters of the state to ensure there is no net loss of habitat functions and values. Compensation ratios would be a minimum of 1:1 (1 acre of mitigation for every 1 acre of impact); they would be based on site-specific information and determined through coordination with the Central Valley Regional Water Quality Control Board as part of the state permitting process and may be a combination of offsite restoration/creation and mitigation credits.

Animal Species

Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys

If necessary, vegetation removal would occur during the non-breeding season for most migratory birds (generally between September 15 and January 31) to the extent feasible.

If possible, construction activities would start before the nesting season for most birds (generally, February 1 through September 14). Starting construction before the

breeding season would establish a level of noise disturbance that would dissuade noise-sensitive raptors and other birds from attempting to nest within or near the study area.

If starting construction activities (including vegetation removal) before the breeding season is not possible, a qualified wildlife biologist with knowledge of the relevant species would do nesting surveys before the start of construction.

A minimum of three separate surveys would be done for migratory birds and raptors. Surveys would include a search of all trees and shrubs, plus grassland/ruderal areas that provide suitable nesting habitat, in the project area. In addition, a 500-foot area around the project area would be surveyed for nesting raptors. Surveys should occur during the height of the breeding season (March 1 to June 1), with one survey occurring in each of two consecutive months within this peak period and the final survey occurring within 1 week of the start of construction. If no active nests are found during these surveys, no additional measures are required.

If an active nest is found in the survey area, construction would stop in the area until consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service has been initiated and appropriate avoidance measures have been determined and implemented. A no-disturbance buffer would be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers would be determined by the biologist in coordination with U.S. Fish and Wildlife Service and California Department of Fish and Game; they would depend on the level of noise or construction disturbance, 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. No-disturbance buffers for fully protected species may be as large as 0.50 mile. If an active nest of a listed species is found after construction begins, construction would stop in the area until consultation with California Department of Fish and Game and U.S. Fish and Wildlife Service has been initiated and appropriate avoidance measures have been determined and implemented.

Conduct Surveys for Western Burrowing Owls and Implement the Mitigation Methods in California Department of Fish and Game Guidelines, if necessary

The information in the draft environmental document followed the 1995 California Department of Fish and Game mitigation guidance for burrowing owls. On March 7, 2012 the California Department of Fish and Game updated their mitigation guidance. The following is taken from the California Department of Fish and Game's 2012 *Staff Report on Burrowing Owl Mitigation*. Burrowing owls surveys and take avoidance survey will be conducted prior to project construction. Burrowing owl surveys are recommended whenever burrowing owl habitat is present on or within 500 feet of a project site. Breeding season and non-breeding season surveys will be conducted in accordance with California Department of Fish and Game's 2012 *Staff Report on Burrowing Owl Mitigation*. Breeding season surveys will consist of four surveys: 1) one survey between February 15 and April 15, and 2) a minimum of three surveys, at least three weeks apart, between April 15 and July 15, with at least one survey after June 15. Non-breeding season surveys will consist of four surveys spread evenly throughout the non-breeding season (September 1 to January 31).

A survey report will be prepared at the conclusion of surveys for submission to California Department of Fish and Game. The report will include, but is not limited to, a description of the proposed project or proposed activity, proposed project start and end dates, and a description of disturbances or other activities occurring on-site or nearby (see Appendix D, California Department of Fish and Game Staff Report).

If burrowing owls are found during any of the surveys, compensatory mitigation best practices as described below will be implemented. Because ample lead time is necessary for implementing compensation, these efforts should begin as soon as possible after presence of burrowing owls is determined.

Regardless of results from the surveys described above, an initial take avoidance (preconstruction) survey will be conducted no less than 14 days prior to initiating ground disturbing activities. The City of Tulare will retain a qualified biologist to conduct preconstruction surveys for active burrows according to methodology in the 2012 California Department of Fish and Game Staff Report. Burrowing owls may re-colonize a site after only a few days. As such, subsequent take avoidance surveys including, but not limited to, a final survey 24 hours prior to ground disturbance will be conducted if there are time lapses of a few days between project activities. If no burrowing owls are found, no further mitigation is required. If burrowing owls are found, the City of Tulare will implement avoidance and minimization measures, and

monitoring and reporting of such measures, as described in the “Mitigation Methods” section of the 2012 California Department of Fish and Game Staff Report, and summarized below.

- Do not disturb occupied burrows during the breeding season (February 1–August 31).
- Establish a 250-foot buffer where no construction will occur around occupied burrows unless a qualified biologist determines through non-invasive methods that egg laying and incubation have not begun or that juveniles are foraging independently and are capable of independent survival.
- Avoid impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid destruction of unoccupied burrows and place visible markers near burrows to ensure that they are not collapsed.
- Develop and implement a worker awareness program to increase the on-site worker’s recognition of and commitment to burrowing owl protection.
- Conduct additional take avoidance surveys as needed, as described above.
- Conduct on-going surveillance of the project site for burrowing owls during project activities.
- Minimize impacts to burrowing owls and their habitat by using buffer zones, visual screens, and other measures during project activities. Recommended buffer distances in the 2012 California Department of Fish and Game’s Staff Report will be implemented or site-specific buffers and visual screens will be determined through information collected during site-specific monitoring and consultation with California Department of Fish and Game.

Compensate for Loss of Western Burrowing Owl Foraging and Burrow Habitat in Accordance with California Department of Fish and Game Guidelines

The information in the draft environmental document followed the 1995 California Department of Fish and Game mitigation guidance for burrowing owls. On March 7, 2012 the California Department of Fish and Game updated their mitigation guidance. The following is taken from the California Department of Fish and Game’s 2012 *Staff Report on Burrowing Owl Mitigation*. If burrowing owls have been documented to occupy burrows at the project site in recent years (3 years), the current scientific literature supports the conclusion that the site should be considered occupied and

mitigation is required. The current scientific literature indicates the following to be best practices. If these best practices cannot be implemented, the lead agency or lead investigator may consult with the California Department of Fish and Game to develop effective mitigation alternatives.

1. Where habitat will be temporarily disturbed, restore the disturbed area to pre-project conditions, including soil decompaction and revegetation. Permanent habitat protection may be warranted if there is potential that temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable, depending on the time frame, resulting in reduced survival or abandonment. For the latter potential impact, see the permanent impact measures below.
2. Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of affected burrows, and burrowing owls are replaced based on site-specific conditions and an analysis of the factors influencing burrowing owls and burrowing owl population persistence in a particular area.
3. Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal during breeding and non-breeding seasons comparable to or better than that of the impact area, and (b) sufficiently large acreage and presence of fossorial (digging) mammals. The mitigation habitat lands may require enhanced or expanded burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. If the mitigation lands are adjacent to the affected burrow site, ensure the nearest neighbor artificial or natural burrow clusters are at least within 690 feet.
4. Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission for conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is within the service area of a California Department of Fish and Game-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.

5. Develop and use a mitigation land management plan to address long-term ecological sustainability and maintenance of the burrowing-owl site (see Appendix D, 2012 California Department of Fish and Game Staff Report). The plan will include a monitor and reporting on the mitigation site.
6. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
7. Do not altered or destroy habitat until mitigation lands have been legally secured, and the endowment or other long-term funding mechanism is in place or security is provided.
8. Mitigation lands should be on, adjacent, or near the affected site, if possible, and habitat should support an existing burrowing owl population.
9. When insufficient habitat is on, adjacent, or near project sites where burrowing owls will be excluded, mitigation lands with burrowing owl habitat should be away from the project site. The selection of mitigation lands should then focus on consolidating and enlarging conservation areas outside of urban and planned growth areas within foraging distance of other conserved lands. If mitigation lands are not available adjacent to other conserved lands, increase the mitigation land acreage requirement to ensure a selected site is of sufficient size. Off-site mitigation may not adequately offset the biological and habitat values affected on a one to one basis. Consult with the California Department of Fish and Game when determining off-site mitigation acreages.
10. Evaluate and select suitable mitigation lands based on a comparison of the habitat attributes of the affected and conserved lands, including but not limited to type and structure of habitat being affected impacted or conserved; burrowing owl density in affected and conserved habitat; and significance of affected or conserved habitat to the species range wide. Mitigate for the highest quality affected burrowing owl habitat first and foremost when identifying mitigation lands, even if a mitigation site is outside of a lead agency's jurisdictional boundary, particularly if the lead agency is a city or special district.
11. Select mitigation lands while taking into account potential human and wildlife conflicts or incompatibility, including human foot and vehicle traffic,

predation by cats, loose dogs, urban-adapted wildlife, and incompatible species management.

12. When a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may help sustain of the on-site burrowing owl population. Maintenance includes the following: reduce vegetation height by grazing or hand mowing, remove trees and shrubs, and prevent excessive human disturbance such as walking, jogging, off-road activities, dog-walking, unleashed pets, and feral animals that chase and prey upon owls (4, 5 and 6 above apply to this mitigation approach).
13. If no other feasible mitigation options are available and a lead agency is willing to establish and oversee a Burrowing Owl Mitigation and Conservation Fund that funds, on a competitive basis, acquisition and permanent habitat conservation, the project proponent may participate in the lead agency's program.

Conduct Preconstruction Survey for Swallow Nests and Implement Measures to Deter Nesting

To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the Migratory Bird Treaty Act and California Fish and Game Code, the City of Tulare would implement the following measures:

- The City of Tulare would hire a qualified wildlife biologist to inspect the Cartmill Avenue overcrossing during the swallows' non-breeding season (September 1 to February 28). If abandoned nests are found, they may be removed. To avoid damaging active nests, removal of nests would occur before the breeding season begins (March 1).
- If possible, demolition of the Cartmill Avenue overcrossing should occur during the non-breeding season (September 1 to February 28). If this is not possible, after nests are removed, the undersides of the overcrossing would be covered with 0.5- to 0.75-inch mesh net by a qualified contractor. All net installation would occur before March 1 and would be monitored by a qualified biologist throughout the breeding season (typically several times a week). The netting would be anchored so that swallows cannot attach their nests to the bridge through gaps in the net.

- If netting of the bridges does not occur by March 1 and swallows colonize the bridge, demolition of the structure would not begin before August 31 of that year or until a qualified biologist has determined that the young have fledged and all nest use has been completed.
- If appropriate steps are taken to prevent swallows from building new nests, work can proceed at any time of the year.

Threatened and Endangered Species

Vernal Pool Fairy Shrimp

Compensate for Impacts to Habitat for Vernal Pool Fairy Shrimp

Compensation for the permanent loss of 0.071 acre and temporary impacts on 0.11 acre of habitat (SP-1 and SP-2, respectively) for vernal pool fairy shrimp will be determined during the Section 10 consultation with U.S. Fish and Wildlife Service. Typically, direct effects are mitigated at a 2:1 or 3:1 ratio (acres preserved:acres affected). Currently, the Low-Effect Habitat Conservation Plan indicates that the City of Tulare will purchase preservation credits equal to 0.43 acre of vernal pool habitat for vernal pool fairy shrimp at the Deadman Creek Conservation Bank. The acreage or location of this compensatory mitigation may change based on final revisions to the project design and/or further coordination with the U.S. Fish and Wildlife Service.

Swainson's Hawk

Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys

This measure was discussed above under Northern Harrier, White-tailed Kite, and Non-sensitive Migratory Birds in the Environmental Consequences section.

Conduct Preconstruction Surveys for Swainson's Hawk Nests

If starting construction activities (including vegetation removal) before the breeding season is not possible, a qualified wildlife biologist with knowledge of Swainson's hawk biology and behavior would do nesting surveys in accordance with the Swainson's Hawk Technical Advisory Committee's 2000 *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* before the start of construction. Surveys would include a search of all trees within a 0.50-mile radius of the project area. If no active nests are found during these surveys, no additional avoidance or minimization measures are required.

Mitigate for Loss of Swainson's Hawk Foraging Habitat in Accordance with California Department of Fish and Game Requirements

To mitigate for the loss of foraging habitat within the project area, the City of Tulare would provide habitat management lands consistent with California Department of Fish and Game foraging habitat mitigation requirements for projects within 10 miles of an active nest. An active nest is defined as one that has been active within the previous 5 years.

To determine appropriate mitigation, the City of Tulare would contact the California Department of Fish and Game for recent records of nesting Swainson's hawks within 10 miles of the project area, do a records search of the current version of the California Natural Diversity Database, and use the results of the preconstruction surveys for the project and surrounding area (if done), to determine if an active nest is within 10 miles of the project area. If an active nest is found within 10 miles of the project area, the City of Tulare would provide habitat management lands for each 1 acre of urban development at ratios defined in the California Department of Fish and Game's 1994 *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California*. All habitat management lands protected under this requirement may be preserved by fee title or conservation easement on agricultural lands, or other suitable habitats (as approved by the California Department of Fish and Game) that provide foraging habitat for Swainson's hawk.

San Joaquin Kit Fox

Minimize and Avoid Temporary Construction Disturbances to San Joaquin Kit Fox

The City of Tulare or its contractor(s) would implement the following construction and operational requirements identified in the U.S. Fish and Wildlife Services' 1999 *Standardized Recommendations for the Protection of San Joaquin kit fox Prior To or During Ground Disturbance* (Standardized Recommendations):

- Mandatory contractor/worker awareness training would be done for all construction personnel. The awareness training would include a description of the San Joaquin kit fox and representative photographs of the species, the species' legal status and protection under the federal and California Endangered Species Acts, and the penalties for not complying with biological mitigation requirements.
- The contractor must clearly delineate the project boundaries and prohibit any off-road traffic outside these boundaries.

- At the end of each working day, the contractor would ensure that all excavated, steep-walled holes or trenches more than 2 feet deep be covered by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they would be thoroughly inspected by the biological monitor for trapped animals.
- The contractor would provide closed garbage containers for the disposal of all food-related trash items such as wrappers, cans, bottles, and food scraps. All garbage must be removed daily from the project site.
- No pets would be allowed on the project site.
- The contractor would immediately notify the City of Tulare if a dead, injured, or entrapped kit fox is found in the construction area. All work would be temporarily stopped until the California Department of Fish and Game and/or U.S. Fish and Wildlife Service are contacted to determine the appropriate course of action.

Avoid San Joaquin Kit Fox Dens by Conducting Preconstruction Den Searches and Implementing Protection Measures, if Necessary

The City of Tulare would retain a qualified biologist (as determined by U.S. Fish and Wildlife Service) to do a preconstruction survey no fewer than 14 days and no more than 30 days before the start of ground disturbance or any activity likely to affect the San Joaquin kit fox. The biologist would survey the proposed construction work area and a 200-foot area outside of the construction work area to identify suitable burrow sites. The biologist would conduct den searches by systematically walking 30-foot-wide transects through the survey area. If a den is found during the survey, the biologist would measure the size; evaluate the shape of the den entrances; and note tracks, scat, prey remains, and recent excavations at the den site. The biologist would also determine the status of the dens and map the features. Dens would be classified in one of the following four den status categories defined by the U.S. Fish and Wildlife Service:

- **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 kit fox. Potential dens shall include the following: (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 have appropriate characteristics for kit fox use.

- **Known den:** Any existing natural den or manmade 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 radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox.
- **Natal or pupping den:** Any den used by kit foxes 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 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 1 or more entrances. A natal den, defined as a den in which 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 human-made 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.

Qualified biologists would monitor potential dens within the construction area for 3 days with tracking media or remote-sensor cameras. If determined to be vacant, these vacant dens would be removed by careful hand excavation or under the supervision of qualified biologists.

Written results of the surveys must be received by U.S. Fish and Wildlife Service within 5 days after the completion and before the start of ground disturbance and/or construction activities likely to affect the San Joaquin kit fox. The California Department of Fish and Game will also be notified if any dens or other evidence of San Joaquin kit fox are noted as a result of the survey. The City of Tulare would implement the mitigation specified below, for each habitat feature that is found within the 200-foot buffer area during the preconstruction survey.

Avoid San Joaquin Kit Fox Dens by Establishing and Observing Exclusion Zones

After preconstruction den searches have been done and before the construction activities begin, a qualified biologist/monitor would establish and maintain the following exclusion zones measured in a radius outward from the entrance or cluster of entrances of each den within the 200-foot buffer:

- **Potential and Atypical dens:** A total of 4–5 flagged stakes would be placed 50 feet from the den entrance(s) to identify the den location.
- **Known den:** Orange construction barrier fencing would be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing must be maintained until all construction-related disturbances have ended. At that time, all fencing must be removed to avoid attracting subsequent attention to the den.
- **Natal/pupping den:** The U.S. Fish and Wildlife Service must be contacted immediately if a natal or pupping den is discovered at or within 200 feet of the boundary of the construction area.

Construction and other project activities would be prohibited or greatly restricted within these exclusion zones. Only essential vehicular operation on existing roads and foot traffic should be permitted. If these exclusion zones cannot be followed, the U.S. Fish and Wildlife Service and California Department of Fish and Game must be contacted.

If a known den or potential den that is later determined to be used by kit fox and cannot be avoided, a “take” authorization/permit from the U.S. Fish and Wildlife Service would be required.

Compensate for the Loss of Foraging Habitat for San Joaquin Kit Fox

The City of Tulare would compensate for permanent and temporary losses of San Joaquin kit fox foraging habitat resulting from construction of the project. Currently, the Low-Effect Habitat Conservation Plan indicates that the City of Tulare will purchase preservation credits equal to 76.41 acres of suitable habitat at the Sand Creek or Kreyenhagen Hills Conservation Bank. The acreages or location of compensatory mitigation may change based on final project design and/or further negotiation with the U.S. Fish and Wildlife Service.

Invasive Species

Avoid and Minimize Introduction of New Invasive Species

Implementation of one or more of the following measures would avoid and minimize the introduction of new invasive species into the project area and the spread of invasive plant species to uninfested areas:

- Educate construction supervisors and managers on the importance of controlling and preventing the spread of noxious weed infestations.

- Coordinate with the Tulare County Agricultural Commissioner and/or the Tulare Weed Management Area to ensure that the appropriate best management practices are implemented for the duration of project construction.
- Treat small, isolated infestations with eradication methods that have been approved by or developed in conjunction with the Tulare County Agricultural Commissioner and/or Tulare Weed Management Area to prevent and/or destroy viable plant parts or seed.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use native, noninvasive species or non-persistent hybrids in erosion-control plantings to stabilize site conditions and prevent invasive species from colonizing.
- Use certified, weed-free, imported erosion-control materials (or rice straw in upland areas).

Appendix F Air Quality

Compliance with 40 CFR 1502.22

This text is taken from the Federal Highway Administration's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents*, Appendix C (Federal Highway Administration 2009).

Sec. 1502.22 INCOMPLETE OR UNAVAILABLE INFORMATION FOR PROJECT-SPECIFIC MSAT HEALTH IMPACTS ANALYSIS

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <https://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's *Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model

Compliance with 40 CFR 1502.22

are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country – three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Appendix G U.S. Fish and Wildlife Species List

Sacramento Fish & Wildlife Office Species List

Page 1 of 2



United States Department of the Interior

FISH AND WILDLIFE SERVICE



Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

March 9, 2012

Document Number: 120309091718

Jennifer Haire
ICF International
630 K Street, Suite 400
Sacramento, CA 95814

Subject: Species List for Cartmill Avenue/State Route 99 Interchange Project

Dear: Ms. Haire

We are sending this official species list in response to your March 9, 2012 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 07, 2012.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found [here](#).

Endangered Species Division

http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists_auto-letter.cfm

3/9/2012

These buttons will not appear on your list.

Revise Selection

Print this page

Print species list before going on to letter.

Make Official Letter

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 120309091718

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
 - Conservancy fairy shrimp (E)
- Branchinecta lynchi
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
 - valley elderberry longhorn beetle (T)
- Lepidurus packardi
 - vernal pool tadpole shrimp (E)

Fish

- Hypomesus transpacificus
 - delta smelt (T)

Amphibians

- Ambystoma californiense
 - California tiger salamander, central population (T)

- *Rana draytonii*
 - California red-legged frog (T)

Reptiles

- *Gambelia (=Crotaphytus) sila*
 - blunt-nosed leopard lizard (E)
- *Thamnophis gigas*
 - giant garter snake (T)

Mammals

- *Dipodomys nitratooides exilis*
 - Fresno kangaroo rat (E)
- *Dipodomys nitratooides nitratooides*
 - Tipton kangaroo rat (E)
- *Vulpes macrotis mutica*
 - San Joaquin kit fox (E)

Plants

- *Caulanthus californicus*
 - California jewelflower (E)
- *Pseudobahia peirsonii*
 - San Joaquin adobe sunburst (T)

Quads Containing Listed, Proposed or Candidate Species:

CAIRNS CORNER (310B)

WOODVILLE (310C)

TULARE (311A)

PAIGE (311B)

TAYLOR WEIR (311C)

TIPTON (311D)

EXETER (333C)

GOSHEN (334C)

VISALIA (334D)

County Lists

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information

for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 07, 2012.

Appendix H Response to Comments

This appendix contains the documentation of public availability and circulation as well as comments received during the public circulation (April 18, 2012 to May 18, 2012) and responses to those comments from Caltrans. Responses follow each comment presented. Comments and dates are listed below in the same order they appear in this appendix.

- Governor's Office of Planning and Research, State Clearinghouse, May 18, 2012
- Jeffrey R. Single, Ph.D California Department of Fish and Game, May 21, 2012
- Dave Warner/Arnaud Marjollet, San Joaquin Valley Air Pollution Control District, May 17, 2012
- Don Dorman, City of Tulare, May 16, 2012
- Harvey May, Paloma Development, May 1, 2012
- Nina Akin, Tulare Chamber of Commerce, May 16, 2012
- Charles Clouse, TPG Consulting on behalf of Del Lago Development, May 16, 2012
- Robert J. Keenan, Home Builders Association of Tulare/Kings County, May 17, 2012
- Delbert and Betty Strange, April 28, 2012

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EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

May 18, 2012

G. William Trais Norris, III
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, CA 93721

Subject: State Route 99/Cartmill Avenue Interchange Improvement Project
SCH#: 2012041050

Dear G. William Trais Norris, III:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on May 17, 2012, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

**Document Details Report
State Clearinghouse Data Base**

SCH# 2012041050
Project Title State Route 99/Cartmill Avenue Interchange Improvement Project
Lead Agency Caltrans #6

Type MND Mitigated Negative Declaration
Description Caltrans, in conjunction with the City of Tulare, proposes to modify the existing SR 99/Cartmill Avenue/M Street interchange on SR 99 between post miles 31.3 and 32.6 in the City of Tulare in Tulare County. The project would enhance safety, provide additional capacity on Cartmill Avenue by constructing.

Lead Agency Contact

Name G. William Trais Norris, III
Agency California Department of Transportation, District 6
Phone 559 445 6447 **Fax**
email
Address 855 M Street, Suite 200
City Fresno **State** CA **Zip** 93721

Project Location

County Tulare
City Tulare
Region
Lat / Long
Cross Streets Cartmill Avenue and SR 99
Parcel No. various
Township 19S **Range** 24E **Section** 26 **Base** MDB&M

Proximity to:

Highways Hwy 99
Airports
Railways UPRR
Waterways
Schools
Land Use State Hwy; Zoned Retail Commercial; Single-Family Residential; within Urban Development Boundary

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Fresno); Department of Toxic Substances Control; Native American Heritage Commission

Date Received 04/18/2012 **Start of Review** 04/18/2012 **End of Review** 05/17/2012

Note: Blanks in data fields result from insufficient information provided by lead agency.

Response to Comments from State Clearinghouse

The State Clearinghouse letter acknowledges that Caltrans have completed the review requirements for draft environmental documents pursuant to the California Environmental Quality Act.

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Comment from Jeffrey R. Single, California Department of Fish and Game



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
<http://www.dfg.ca.gov>

EDMUND G. BROWN JR, Governor
CHARLTON H. BONHAM, Director



May 21, 2012

William Trais Norris
Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Initial Study with Proposed Mitigated Negative Declaration for the
State Route 99 / Cartmill Avenue Interchange Improvements
06-0000-0368 06-332200 06-TUL-99 PM 31.3-32.6
SCH No. 2012041050

Dear Mr. Norris:

On April 20, 2012, the California Department of Fish and Game (DFG) received a Mitigated Negative Declaration (MND) for the above Project. As DFG understands the Project, the California Department of Transportation (Caltrans), in conjunction with the City of Tulare, proposes to modify the existing State Route (SR) 99 / Cartmill / M Street Interchange on SR 99 between Post Miles 31.3 to 32.6 at the northern edge of the City of Tulare in Tulare County. Two alternatives are still under consideration. Alternative 1 includes loop on-ramps from Cartmill Avenue to northbound and southbound SR 99 and intersections at the off-ramps. Retention basins would be built within the northbound off-ramp and within the southbound off-ramp, which would intersect with M Street. Alternative 2 includes a loop on-ramp to northbound SR 99 and a four-way intersection east of M Street for the on- and off-ramps to southbound SR 99. Under both build alternatives, Akers Street (Road 100) would be realigned. The Project would enhance safety, provide additional capacity on Cartmill Avenue by constructing interchange ramps to improve east-west circulation, and enhance local access to and from SR 99 at Cartmill Avenue.

In compliance with the provisions of the California Environmental Quality Act (CEQA), Caltrans has prepared a MND for the Project. After review of the document, DFG staff has identified areas where biological resources could potentially be impacted by the Project without additional biological resource analysis and associated mitigation measures. DFG is particularly concerned regarding potential Project-related impacts to the State threatened Swainson's hawk (*Buteo swainsoni*) which could nest in one or more of the scattered oak trees in the fields adjacent to SR 99 or in the eucalyptus trees along SR 99, all of which provide potential nesting habitat. On page 178, Caltrans acknowledges that there is a "moderate potential for Swainson's hawks to nest in or adjacent to the project area". Approval of the Project and the resulting construction work could cause disturbance to

Conserving California's Wildlife Since 1870

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nesting Swainson's hawks and without implementation of additional avoidance and minimization measures could cause "take" (as defined in FGC§ 86) of Swainson's hawk. Therefore, we are recommending that additional avoidance and minimization measures be added to the CEQA document and made as conditions of Project approval. Our specific comments follow.

Department Jurisdiction

Trustee Agency Authority: DFG is a Trustee Agency with responsibility under CEQA for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, DFG has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, DFG is responsible for providing, as available, biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used under CEQA (Division 13 [commencing with Section 21000] of the Public Resources Code).

Responsible Agency Authority: DFG also has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If activities at the site could result in the "take" of any species listed as threatened or endangered under the California Endangered Species Act (CESA), DFG may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (sections 21001(c), 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080. The Project has the potential to reduce the number or restrict the range of endangered, rare, or threatened species (as defined in Section 15380 of CEQA), including federally endangered vernal pool fairy shrimp (*Branchinecta lynchi*), federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*), State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*) and State threatened Swainson's hawk.

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15380), it should be fully considered in the environmental analysis for the Project. The State Species of Special Concern Northern harrier (*Circus cyaneus*), and western

1

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burrowing owl (*Athene cunicularia hypugea*) have the potential to occur on or adjacent to the Project site.

Fully Protected Species: DFG has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code Sections 3511, 4700, 5050, and 5515. "Take" of any fully protected species is prohibited and DFG cannot authorize their "take" for development. Fully protected species that are known to occur in the Study vicinity include the white-tailed kite (*Elanus leucurus*).

1
Cont.

Bird Protection: DFG has jurisdiction over actions which may result in the disturbance or destruction of active nest sites or the unauthorized "take" of birds. Sections of the Fish and Game Code that protect birds, their eggs and nests include sections 3503 (regarding unlawful "take," possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the "take," possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful "take" of any migratory nongame bird).

Potential Project Impacts and Recommendations

San Joaquin Kit Fox (SJKF): Pages 178 to 179 of the MND state, "There are 10 California Natural Diversity DataBase (CNDDDB) occurrences records for the SJKF within a 10-mile radius of the project site. Nine of these records are from 1975 or earlier." SJKF populations are known to fluctuate over years and absence even over an extended period of time does not necessarily exclude the potential for kit fox to occur on a site at a future time. Further, it is important to note that occurrences are only in the CNDDDB if the site has been previously surveyed during the appropriate season, a detection was made, and the observation was reported to the CNDDDB. As a result, absence of a CNDDDB occurrence in a specific area should under no circumstance be used as a means to infer absence of a given species from an area. Caltrans acknowledges the potential for SJKF occurring in the Project area by indicating on Page 187 that consultation with the United States Fish and Wildlife Service (USFWS) will occur and that the City of Tulare would compensate for permanent and temporary losses of SJKF foraging habitat resulting from construction of the Project. Pages 184-185 of the MND identify measures from the USFWS's "Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance" (2011) that will be implemented by the City of Tulare or its contractor(s). In the event that SJKF, SJKF dens, or other SJKF sign are detected during surveys, consultation with DFG is also warranted to discuss how to implement the Project and avoid "take," since this species is also listed under CESA. If "take" cannot be avoided, acquisition of a State ITP would be warranted prior to Project implementation.

2

3

Bird Species: Scattered oak trees and eucalyptus trees provide potential nesting, roosting, and/or foraging habitat for songbirds and raptors. Project site disturbances

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(including vegetation removal, increased noise from construction equipment, and increased human activity) should occur during the non-breeding season (mid-September through January). If construction activities or vegetation removal must occur during the breeding season (February through mid-September); then surveys for active nests should be conducted by a qualified biologist no more than 15 days prior to the start of construction. A minimum no-disturbance buffer of 250 feet should be delineated around active nests of migratory birds and 500 feet around active nests of non-listed raptors until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival. If the active nest of a listed species is discovered, no construction activities should commence until after consultation with DFG and implementation of appropriate avoidance measures on the ground including installation of a delineated buffer marked with either Environmentally Sensitive Area (ESA) fencing or other means which is highly visible and clear as to the purpose of the boundary.

4
Cont.

Swainson's Hawk (SWHA): As indicated above, Caltrans has identified a moderate potential for SWHA to nest in or adjacent to the Project area. Page 178 states that there are six SWHA nest occurrences within a 10-mile radius of the Project according to the CNDDDB. While the CNDDDB is useful for identifying where a species is (or has been in the past) it is not a tool for determining absence for the reasons stated above. There could be SWHA closer to the Project than have been documented and there is also the possibility that a new pair could move into the area since there are potential nest trees and suitable foraging habitat.

5

If ground-disturbing activities are to occur at the Project site during the nesting season (February 1 through August 31), DFG recommends that a qualified biologist conduct surveys for nesting SWHA following the survey method developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC, 2000) prior to commencing Project-related activities. Additional pre-construction surveys for active nests should be conducted by a qualified biologist no more than 10 days prior to the start of construction and during the appropriate timing to maximize detectability. Should an active nest be found, a minimum no-disturbance buffer of ½ mile should be observed until the nesting season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Page 184 of the MND indicates that surveys would search all trees within a ¼-mile radius of the Project. This survey radius may be insufficient to detect all potential nests within DFG's recommended avoidance buffer and which could be impacted by construction activities. Therefore, the survey radius of suitable trees should extend out to a ½ mile. Please see the enclosed map with some of the obvious potential nest trees within ½ mile of the Project delineated by green polygons.

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Page 5.

In addition, DFG considers removal of known raptor nest trees, even outside of the nesting season, to be a significant impact under CEQA, and in the case of SWHA could also result in "take" under CESA since the species exhibits high site fidelity to their nest and nest trees year after year. Impacts to known nest trees should be avoided at all times of year. If either complete avoidance of known nest trees or implementation of the recommended buffer zones for work occurring during the nesting season is infeasible, the acquisition of an ITP, pursuant to Section 2081(b) of the Fish and Game Code, would be warranted and consultation with DFG should occur well in advance of ground-disturbing activities.

7

White-tailed Kite (WTKI): Page 167 of the MND states that no WTKI were observed in or near the Biological Study Area (BSA) during the 2007 and 2008 field surveys. Also there are no CNDDB records for WTKI in the Project vicinity, but the Project is within the range of this species. Page 170 states that avoidance, minimization, and mitigation measures would be implemented to avoid or reduce impacts to northern harrier, white-tailed kite, western burrowing owl, and other migratory birds and states in part:

"If possible, construction activities would start before the nesting season for most birds (generally, February 1 through August 31). Starting construction before the breeding season would establish a level of noise disturbance that would dissuade noise-sensitive raptors or other birds from attempting to nest... A minimum of three separate surveys would be done for migratory birds and raptors... If an active nest is found in the survey area, a no-disturbance buffer would be established around the site to avoid disturbance... The extent of these buffers would be determined by the biologist in coordination with the U.S. Fish and Wildlife Service and DFG; they would depend on the level of noise or construction disturbance, 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."

8

The MND does not identify the WTKI as a fully protected bird species. Since DFG cannot authorize "take" for any fully protected species, appropriate avoidance measures should be identified. To reduce any probability of potential impacts to WTKI and to ensure total avoidance of impacts DFG recommends a buffer of at least ½ mile for fully protected bird species. If a fully protected bird species nests within a ½ mile of the Project, then activities that could potentially cause "take" would need to be scheduled outside the nesting season. In addition, if the nest of a fully protected species such as WTKI should be discovered, all work within ½ mile should be postponed until a qualified biologist has determined that the young have fledged and are no longer dependent upon parental care.

William Trais Norris
May 21, 2012
Page 6

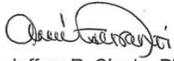
Burrowing Owl (BUOW): Page 168 of the MND states that the nearest CNDDDB record for BUOW is about 11 miles southwest of the Project site. However the Project Area supports potential breeding or wintering sites for BUOW, therefore BUOW could occur on or adjacent to the Project site. DFG recommends following the survey methodology developed by the California Burrowing Owl Consortium (CBOC, 1993) if the site contains burrows that could be used by burrowing owls. If nesting burrowing owls are found on or adjacent to the Project site, DFG's Staff Report on Burrowing Owl Mitigation (DFG, 2012) recommends that impacts to occupied burrows be avoided by implementation of a no-construction buffer zone of a minimum distance of 250 feet, unless a qualified biologist approved by DFG verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Failure to implement this buffer zone could cause adult BUOW to abandon the nest, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure. Impacts of this nature are violations of Fish and Game Code Sections 3503, 3503.5, 3513, and the Federal Migratory Bird Treaty Act.

9

In the unlikely event that the Project will need to evict burrowing owls present in the Project impact area, DFG recommends passive relocation during the nonbreeding season. The MND should describe methods that would be used to evict owls from burrows, including a monitoring program to ensure that evicted individuals are using a relocation site. An appropriate amount of foraging habitat per pair or unpaired resident BUOW should be acquired and permanently protected to offset the loss of foraging and burrow habitat.

We recommend that an analysis of these potential impacts which could occur as a result of Project implementation be considered in the CEQA document, and that appropriate avoidance, minimization, and mitigation measures be included as conditions of approval, and built into permits which would authorize ground-disturbing activities. We appreciate the opportunity to provide guidance on this Project. If you have any questions on these issues, please contact Laura Peterson-Diaz, Environmental Scientist, at the address provided on this letterhead or by telephone at (559) 243-4014, extension 225.

Sincerely,


Jeffrey R. Single, Ph.D.
Regional Manager

Enclosure

cc: See Page Seven

William Trais Norris
May 21, 2012
Page 7

cc: United States Fish and
Wildlife Service
Sacramento Office
2800 Cottage Way, W-2605
Sacramento, California 95825

William Trais Norris
May 21, 2012
Page 8

Literature Cited

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<http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>

SR 99-Cartmill Ave and potential SWHA nest trees



By: LPD on 5-15-12

0 0.1 0.2 0.4 0.6 0.8 1 Miles



**Response to Comments from Jeffrey R. Single,
California Department of Fish and Game**

Thank you for your comments.

Response to Comment #1: Caltrans acknowledges California Department of Fish and Game jurisdiction and thank them for the comments.

Response to Comment #2: Caltrans agrees that absence of California Natural Diversity Database occurrences of San Joaquin kit fox should not be used as a means to infer absence. Therefore, construction and operational requirements such as contractor and worker training, preconstruction surveys, and avoidance and minimization measures will be used as stated in Section 2.3.3 of the draft and final environmental document.

Response to Comment #3: The “Avoid San Joaquin Kit Fox Dens by Conducting Preconstruction Den Searches and Implementing Protection Measures, if Necessary” measure has been revised to include submitting preconstruction survey results to the California Department of Fish and Game. The “Avoid San Joaquin Kit Fox Dens by Establishing and Observing Exclusion Zones” measure on page 187 of the final environmental document has been updated to include consultation with the California Department of Fish and Game. Also, a take permit would be obtained from the California Department of Fish and Game should it be impossible to avoid an occupied den.

Response to Comment #4: This comment pertains primarily to the “Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys” measure on pages 170 and 171 of the draft environmental document. Breeding season dates have been revised in this measure in the final environmental document (page 170) to February 1 through September 14; construction dates have been revised to September 15 through January 31. Additionally, text has been added to clarify that construction will stop if an active nest of a listed or fully protected bird species is found. The timing of preconstruction surveys proposed in the draft environmental document (within 1 week of construction) is more conservative than the 15 days proposed by the California Department of Fish and Game and therefore no changes were made to the environmental document.

The draft environmental document states on pages 170 and 171 that the extent of no-disturbance buffers will be determined in coordination with U.S. Fish and Wildlife

Service and the California Department of Fish and Game and that the buffers will vary by species and conditions.

Caltrans believes this addresses comments regarding the extent of buffers for various species and has added a sentence in the final environmental document stating that this buffer, to clarify, could be as large as 0.50 mile. No further changes were made to the draft environmental document regarding this issue.

Response to Comment #5: Caltrans agrees that the California Natural Diversity Database occurrences cannot be used to infer absence and that there is a potential for Swainson's hawk to nest in the project area. For that reason, preconstruction surveys and avoidance and minimization measures will be used as discussed in Section 2.3.3 of the draft and final environmental document.

Response to Comment #6: The "Conduct Preconstruction Surveys for Swainson's Hawk Nests" measure has been revised in the final environmental document (page 184) to include the 0.5-mile survey radius. The timing of preconstruction surveys and extent of no-disturbance buffers are adequately addressed in the "Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys" measure on pages 170 and 171 of the draft environmental document. Surveys and buffers are also addressed on page 183 of the environmental document when it discusses to Swainson's hawks.

Please see response to comment #4.

Response to Comment #7: Caltrans agrees that there is site fidelity for several raptor species; however, according to California Department of Fish and Game staff, raptors have been known to relocate to adjacent trees when nesting trees have been removed during the non-breeding season on other highway projects. Because there are more than 10 potential nest trees within 0.5 mile of the study area, Caltrans does not consider removal of a known nest tree outside of the nesting season to be considered a significant impact under the California Environmental Quality Act. In addition, biological surveys prepared for this project did not identify nests within the project area, eliminating the possibility of a potentially significant impact. The measures identified on pages 170 and 184 of the draft environmental document (pages 268 and 275 of this final environmental document) describe surveys that will be conducted prior to construction to identify any raptor nests in the study area and vicinity. Measures have also been included that describe the establishment of no-disturbance buffers around active nests until the end of the breeding season. The extent of these

buffers would be determined by a biologist in coordination with the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Caltrans believes that these measures are sufficient to avoid significant impacts to nesting raptors, including Swainson's hawks. Although Swainson's hawks may use the same nesting territory year after year, they do not always use the same nest tree. However, biological surveys performed as part of the documentation for the environmental document indicated that the closest Swainson's hawk nest was approximately two miles south of project area, making it unlikely that a nest will be impacted by the project. Caltrans will make every effort to avoid removing a known Swainson's hawk nest tree at any time, but it does not consider removal of a nest tree during the non-breeding season as take as defined in Section 86 of the California Fish and Game Code.

Response to Comment #8: The Mitigated Negative Declaration is a short summary supported by the Initial Study and does not discuss any species in detail. The first sentence of the second paragraph on page 167 of the draft environmental document in the “Affected Environment” section states, “The white-tailed kite is fully protected under the California Fish and Game Code Section 3511.” The “Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys” measure on pages 170 and 171 of the draft environmental document addresses the timing of surveys and the extent of no-disturbance buffers.

Please see response to comment number 4.

A sentence has been added to the “Remove Trees and Shrubs during the Non-breeding Season or Conduct Preconstruction Nest Surveys” measure on page 170 of the final environmental document to indicate that surveys for white-tailed kite nests would be done within a 0.5-mile radius of the project area concurrently with Swainson’s hawk surveys.

Response to Comment #9: Caltrans agrees that the area may support western burrowing owls. The environmental document references not the 1993 methodology, but survey methodology in California Department of Fish and Game’s 2012 *Staff Report on Burrowing Owl Mitigation* in the “Conduct Preconstruction Surveys for Western Burrowing Owls” measure on page 171 of the draft and final environmental document. The date of the staff report has been added to the final environmental document for clarity. This measure also addresses passive relocation of owls should any be found. It has been revised to reflect the California Department of Fish and

Game's recommendations regarding the specifics of the no-construction buffer around occupied nests.

Comment from Dave Warner and Arnaud Marjollet, San Joaquin Valley Air Pollution Control District



May 17, 2012

G. William "Trais" Norris, III
Sierra Pacific Environmental Analysis Branch
CA Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Project: State Route 99/Cartmill Avenue Interchange Improvements
District Reference No: 20120244

Dear Mr. Norris:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the subject project and offers the following comments:

1. The Proposed Mitigated Negative Declaration (document) concludes that the proposed project would have no significant effect on air quality. The District disagrees with this conclusion. The District's thresholds of significance are 10 tons per year for ROG and NOx and 15 tons per year for PM10. The document demonstrates that several of the estimated emissions during construction and operational are above the thresholds of significance. Therefore, the District concludes the impacts to air quality would be significant. 1
2. The document concludes that short-term (construction) air impacts will be reduced through compliance with the District's Indirect Source Review Rule 9510. The District appreciates the City's and Caltrans' effort in ensuring project's impact on air quality would be reduced through compliance with District's Regulation VIII (Fugitive PM10 Prohibition) and Rule 9510 (Indirect Source Review). However, it should be noted compliance with Regulation VIII and Rule 9510 will not reduce project specific emissions of NOx and PM₁₀ to less than significant levels. 2
3. The document presents the recommendations the District has made to reduce air quality impacts, but does not require the recommended mitigation options as a condition of approval. Based on the estimated emissions and the level of air quality impact, the District encourages that the recommendations be pursued if 3

Sayed Sadredin
Executive Director/Air Pollution Control Officer

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Modesto, CA 95356-8718
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Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

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deemed feasible. If it is to be concluded that the proposed project would have a less than significant impact, mitigation measures such as the use of construction equipment powered by engines meeting, at a minimum, Tier II emission standards and a Voluntary Emission Reduction Agreement must be included as conditions of project approval.

3
Cont.

4. The District recommends that you contact Jessi Fierro, Supervising Air Quality Specialist, at 559-230-6000 to discuss conformity. The District would like clarifications on the determination made for conformity requirements.

4

5. Toxic Air Contaminants (TACs) – If the project is located near residential/sensitive receptors, the proposed project should be evaluated to determine the health impact of TACs to the near-by receptors. If the analysis indicates that TACs are a concern, the District recommends that a Health Risk Assessment (HRA) be performed. If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. Please contact the District at hramodeler@valleyair.org. Additional information on TACs can be found online by visiting the District's website at http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm

5

6. Individual development projects may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

6

The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance Office at (559) 230-5888. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm.

7. Referral documents for new development projects should include a project summary detailing, at a minimum, the land use designation, project size, and proximity to sensitive receptors and existing emission sources.

7

District Reference No. 20120244

Page 3

If you have any questions or require further information, please call Patia Siong at (559) 230-5930.

Sincerely,

Dave Warner
Director of Permit Services


Arnaud Marjollet
Permit Services Manager

DW:ps

**Response to Comments from Dave Warner and Arnaud Marjollet,
San Joaquin Valley Air Pollution Control District**

Thank you for your comments.

Response to Comment #1: Guidance related to Caltrans' use of local thresholds to evaluate impacts is found in Chapter 36 from Caltrans' Standard Environmental Reference. The reference is an on-line resource to help state and local agency staff plan, prepare, submit, and evaluate environmental documents for transportation projects. The following quote is from Chapter 36 of the Standard Environmental Reference:

Some public agencies have established threshold of significance for CEQA. Because the Department has statewide jurisdiction and the setting for projects varies so extensively across the state, the Department has not and has no intention to develop thresholds of significance for CEQA. The determination of significance under CEQA is left to the internal project development team, with particular deference paid to the expertise of environmental staff and other specialists.

Therefore, project construction and operational emissions are not compared to the San Joaquin Valley Air Pollution Control District's thresholds of significance. As shown in the draft environmental document (beginning on page 140 of the draft and final), avoidance, minimization, and or mitigation measures are sufficient to minimize increases in construction emissions while the minor increases in operational emissions would not cause or contribute to violations of state or national ambient air quality standards.

Table 2.2.5-3, *Operational Emissions*, indicates that the net increase in emissions from 2033 No Project to 2033 With Project for NO_x, PM₁₀ and PM_{2.5} is 0.1 ton/year. The project development team (which includes environmental staff with expertise in air quality studies) determined that the project will have no significant effect on air quality due to the minimal amount of increase in NO_x and PM₁₀ as shown in the table.

Response to Comment #2: As seen in Response #1 above, Caltrans has not developed thresholds of significance for the California Environmental Quality Act, and project emissions are not compared to the San Joaquin Valley Air Pollution Control District's thresholds of significance. The internal project development team that found avoidance, minimization, and mitigation measures are sufficient to

minimize increases in construction emissions made the determination of significance under the California Environmental Quality Act.

In addition, the San Joaquin Air Pollution District's Rule 9510 fulfills the District's emission reduction commitments in the PM10 and Ozone Attainment Plans. Rule 9510 also achieves emissions reductions from the construction and use of development projects through design features and on-site measures and provides a mechanism for reducing emissions from construction of and use of development projects through off-site measures. The project applicant would be required to reduce NO_x by 20 percent and PM 10 emissions by 45 percent in accordance with Rule 9510.

The project development determined that through the implementation of the San Joaquin Valley Unified Air Pollution Control District's rules and regulations and Caltrans Standard Specifications (Sections 14-9.01 and 14.02 found on page 142 of the final environmental document), air quality impacts associated with project construction will be less than significant.

Response to Comment #3: The environmental document (beginning on page 140 in the draft and final) identifies avoidance, minimization, and mitigation measures that are sufficient to minimize increases in project emissions. Because project emissions are considered less than significant, a Voluntary Emission Reduction Agreement is not required. As a state agency, Caltrans may not require the San Joaquin Valley Air Pollution Control District's recommended mitigation as a condition of approval, as this may preclude disadvantaged businesses from bidding on the project.

Response to Comment #4: ICF staff consulted with Jessi Fierro at the San Joaquin Valley Air Pollution Control District on May 24, 2012 to discuss transportation conformity as it relates to the proposed project. It was discussed that the project is subject to and satisfies transportation conformity, as documented in the *State Route 99/Cartmill Avenue Interchange Improvements Project Draft Air Quality Technical Report* (May 2009) and *Revised Supplement to Air Quality Technical Report for the State Route 99/Cartmill Avenue Interchange Improvements Project* (December 2011).

Response to Comment #5: Air toxic emissions are presented in the analysis of mobile source air toxics (beginning on page 136 of the draft and final environmental document) that qualitatively evaluated mobile source air toxics impacts using Federal Highway Administration and Caltrans' methodology and found that mobile source air

toxics emissions would likely be lower in the project study area under the build alternatives than they would under the No-Build Alternative.

Response to Comment #6: This is not a development project and therefore the rules discussed do not apply.

Response to Comment #7: This project is not a development project and therefore the requirements for the contents of referral documents do not apply.

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Comment from Don Dorman, City of Tulare



City Manager's Office

May 16, 2012

G. William "Trais" Norris, III, Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Subject: State Route 99 / Cartmill Avenue Interchange Initial Study With Proposed Mitigated Negative Declaration

Dear Mr. Norris:

On April 21, 2009, the Tulare City Council reviewed the two project alternatives identified in the Project Study Report (PSR) for the State Route 99 / Cartmill Avenue Interchange Project. Alternative No. 2 as identified in the PSR was unanimously selected, as the City's preferred alternative based on the following criteria:

1

Right-of-way Impacts

- Alternative No. 1 would require the taking of the existing ARCO AM/PM mini-mart on the northeast corner of Cartmill Avenue and M Street. Alternative No. 2 would allow the business to remain.
- Alternative No. 1 would result in a large, undevelopable area being acquired north and east of the ARCO AM/PM mini-mart. The area acquired would be substantially in excess of what is needed for the interchange facilities. The property is currently zoned as Regional Retail Commercial, which is a very high use to lose to excess right-of-way.

2

Project Cost

- As discussed above, Alternative No. 1 would require the acquisition of the ARCO AM/PM mini-mart, and regional retail commercial zoned property north and east of the mini-mart. It is expected that these additional right-of-way requirements could add in excess of \$5 million to the project cost.

3

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Consistency with proposed development

- A large, regional retail commercial development is planned at the northwest corner of Cartmill Avenue and M Street. The development has an approved site plan, with an access point located on M Street north of Cartmill Avenue. Alternative No. 1 would result in access restrictions along the entire length of M Street north of Cartmill Avenue, thereby eliminating the project's access via M Street. The Developer has stated repeatedly that any such access restriction would jeopardize his ability to develop the planned project.

4

Alternative No. 2 as carried over into the subject Initial Study is substantially unchanged from what was identified in the PSR. It has been determined to meet the required minimum design life criteria. As such, both the current Tulare City Council and City staff concur with the previous findings of Alternative No. 2 being the City's preferred alternative. We urge the Project Development Team to consider our findings, and concur with our determination.

5

I would like to thank you for the opportunity to provide our comments on this crucial project for the City of Tulare. We look forward to continuing our work with Caltrans staff to bring it to fruition.

Sincerely,



Don Dorman
City Manager

Response to Comment from Don Dorman, City of Tulare

Thank you for your comments.

Response to Comment #1: Caltrans notes the selection of Alternative 2 as the City of Tulare’s locally preferred alternative on April 29, 2009. It should be noted that after the City of Tulare identified Alternative 2 as their preferred alternative, both build alternatives were analyzed at an equal level of detail, and the draft environmental document was circulated for public review from April 18, 2012 to May 18, 2012. Eight public comments were received and considered in the public selection process.

On May 30, 2012, the project development team (which included the City of Tulare and Caltrans, as well as other responsible agencies) formally identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need. The final determination is made by the District Director.

Response to Comment #2: Caltrans agrees that Alternative 1 would have more right-of-way impacts than Alternative 2. The parcel between M Street and State Route 99 would be used for retention basins.

Response to Comment #3: Caltrans notes potential additional costs under Alternative 1. The capital costs presented in Table 1-5 on page 22 of the draft and final environmental document show that Alternative 1 would cost more than Alternative 2. The difference is primarily due to right-of-way acquisition. Caltrans also acknowledges that there may be further costs based on potential devaluation of property (see comment letter from TPG Consulting on page 324).

Response to Comment #4: Caltrans agrees that building Alternative 1 would restrict access to the Tulare Towne Center parcel proposed for development by Del Lago Development.

Response to Comment #5: Caltrans notes the City of Tulare’s support of Alternative 2. On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

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Comment from Harvey May, Paloma Development



May 1, 2012

G. William "Trais" Norris, III
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

RE: State 99/Cartmill Ave. Interchange Improvements

Dear Mr. Norris:

I have reviewed the Initial Study and Proposed Mitigated Negative Declaration for the aforementioned project. I'd like to make the following comments regarding the overall project and the environmental document.

First, from a comprehensive perspective: let me express my full support for the interchange upgrade project.

The overall project is necessary for the community as it 1) relieves traffic congestion, 2) enhances safety on and around the interchange, and 3) provides sufficient clearance for the expansion of the freeway in the future. Additionally, the interchange project is an important 'gateway' for the northerly entrance into Tulare which will enhance economic development opportunities.

1

The interchange project is an important component of the Measure R funding plan and is consistent with the TCAG Transportation Plan. Over \$25 million would stay in the community of Tulare thru the project construction.

Secondly, from an environmental perspective: the project considers two alternatives/plan lines. I would like to go on record in strong support of Alternative #2. Importantly, Alternative #2 is also the community's 'preferred alternative'. For a myriad of reasons, encompassing both economic and environmental impacts, this alternative should be selected - and Alternative #1 rejected:

2

Alt #2 is the most economically feasible plan...Alt #1 requires the full acquisition of one business (the AM/PM) and almost 25% more land by the City of Tulare. Neither of these Alt #1

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559 713 0202 • Fax 559 713 0784

Mr. G. William "Trais" Norris, III
May 1, 2012
Page 2

economic impacts has been quantified but it is abundantly clear that Alt #1 will cost the City of Tulare millions of dollars more than the preferred alternative.

Alt #2 creates the least impact on farmland and habitat – less land is required for Alt #2.

Alt #2 meets the policies and goals of the Tulare General Plan, as well as a number of surrounding approved project plans.

Alt #2 allows for an important pending economic development project to proceed immediately with over 30 new jobs to the community. Alt #1 will have the opposite effect and will eliminate the project.

For these reasons and the fact that the Tulare City Council is on record in support of Alternative #2 as the preferred alternative, Alternative #1 should be rejected.

In summary: we support the interchange upgrade and strongly urge the selection of Alternative #2.

Thank you for the opportunity to comment on the project and the environmental documents. We look forward to a timely review and approval of the project to allow for the future development of this important interchange.

Sincerely,



Harvey May
President
CA DBE #00938595

cc: Don Dorman – City Manager, City of Tulare
Mike Whitlock – City Engineer, City of Tulare
Wayne Ross – Mayor, City of Tulare
Ted Smalley - TCAG

2
Cont.

Response to Comment from Harvey May, Paloma Development

Thank you for your comments.

Response to Comment #1: Caltrans thanks the commenter for supporting the project.

Response to Comment #2: Caltrans notes the commenter's support of Alternative 2. On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

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Comment from Nina Akin, Tulare Chamber of Commerce



May 16, 2012

G. William "Travis" Norris III
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

RE: State 99/Cartmill Ave Interchange Improvemnets

Dear Mr. Norris:

On behalf of the Board of Directors and the Tulare Chamber of Commerce. We would like to thank you for your dedication to the welfare of California and our roads. After reviewing the Cartmill/99 Interchange options we would like to respectfully request and encourage the selection of the Alternative #2.

We feel this option best fits the needs of our community, while allowing for a proposed plan for economic growth. Alt#1 would negatively affect our community. I thank you for this consideration.

Sincerely,

A handwritten signature in black ink that reads "Nina Akin".

Nina Akin
President/CEO
Tulare Chamber of Commerce

CC: Don Dorman – City Manager, City Manager of Tulare
Mike Whitlock – City Engineer, City of Tulare
Wayne Ross – Mayor, City of Tulare
Ted Smalley - TCAG

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1

Response to Comment from Nina Akin, Tulare Chamber of Commerce

Thank you for your comments.

Response to Comment #1: Caltrans notes the commenter's support of Alternative 2. On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

Comment from Charles Clouse, TPG Consulting



May 16, 2012

G. William Norris, Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 "M" Street, Suite 200
Fresno, Ca. 93721

Dear Mr. Norris,

On behalf of Del Lago Development we would like to thank you for the opportunity to review the Initial Study with Proposed Mitigated Negative Declaration for the State Route 99/Cartmill Avenue interchange Improvements. The upgrading of the Cartmill interchange has been a high priority project in the City of Tulare and Tulare County for a number of years. As you know, the proposed project will greatly assist both local and statewide traffic traveling this segment of SR 99. The additional economic benefits that the project will support have resulted in significant local funding being committed to advance this upgrade to the state system. Therefore, we lend our whole hearted support for the timely completion of this critical state highway improvement.

1

We have reviewed the document and do believe that the proposed Mitigated Negative Declaration is the appropriate CEQA document for this project. We do, however, have the following comments for your consideration. These comments are provided to address several shortfalls in the information provided for Alternative 1.

2

However, our review reveals that Alternative 1 has a number of significant consequences associated with land access and the resulting change in land use. As proposed, Alternative 1 will continue the southbound off ramp along its current alignment to Cartmill Avenue. As part of that reconstruction, Caltrans proposes to purchase all property lying between the southbound off ramp and SR 99. Caltrans also proposes to purchase access rights along the western right-of-way of the off ramp to its intersection with Cartmill Avenue. This proposal will have serious impacts to Del Lago's Tulare Towne Centre project (see attached).

3

The proposed access restrictions for Alternative 1, that is, no access along the upgraded southbound off ramp and the elimination of access to the Towne Centre site via the "M" Street intersection at Cartmill Avenue, will seriously limit the overall access to the Towne Centre. The nearly completed Cartmill Avenue Overcrossing of the UP/SP railroad mainline altered the access pattern to the site. Both the City of Tulare and the Towne Centre project accounted for this change in the review process of the Overcrossing project and the Cartmill Interchange upgrade project. The conclusion of those reviews led the City of

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Tulare to select Alternative No. 2 as proper option. This selection was made because the resulting damage to the overall access to the Tulare Towne Centre as a result of the restricted access of Alternative 1 is so great as to make the commercial project infeasible. The City found that result to be inconsistent with the land use designation of its General Plan.

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Cont.

As part of the assessment of the Cartmill Interchange MND, a careful review of the approved access to the Tulare Towne Centre site is in order. The City of Tulare, when they approved the entitlements for the Towne Centre project, limited access to the site to accommodate the UP/SP Overcrossing, the upgrading of Cartmill Avenue to a full arterial and the Cartmill interchange project. The approved Towne Centre plan shows only two major access points to the site. The first is to be located at the extension of "M" Street and the second is to be located at what is called the "J" Street connector. All other driveways along the frontage of the Centre site will be minor access points with right-in and right-outs restrictions. As proposed, Alternative 1 will seriously change the carrying capacity of the designated commercial land. That is to say, the remnant parcel of the Tulare Towne Centre would be rendered unusable as a commercial center because of the elimination of most of its practical access.

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This unusable commercial designation would force the Del Lago property to be converted to a lesser intensive use, such as residential or office. These lesser uses would be required since the loss of access due to the upgraded southbound off ramp, the loss of property east of the updated ramp and the loss of access at "M" and Cartmill, would not accommodate the projected traffic from the approved commercial development on the site. This would result in a substantial devaluation of the Towne Centre property. Our estimation of the change in value shows a loss of \$11,818,000 in property value, a loss of \$2,364,000 in property taxes and a loss of \$8,984,000 in retail sales taxes to the community. All total, the economic impact associated with Alternative 1 should include at a minimum an additional \$23,166,000 in costs.

On page VI of the Summary of Major Potential Impacts from Alternatives under the Growth section, the MND states that the "project would accommodate local and regional growth, but is not expected to influence the overall amount, type, location or timing of regional growth". We would direct Caltrans' attention to the changes the Alternative 1 would make. The Tulare Towne Centre would not be able to be completed because the loss of site access and as proposed, Caltrans' Alternative 1 would render the site practically and financially infeasible for commercial development. The resulting loss of retail sales would be substantial to the Tulare community. And finally, Alternative 1 would result in a significant relocation of regional retail uses, residential uses and office uses within the community, which are contrary to the adopted City of Tulare General Plan.

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As proposed in Alternative 1, the introduction of the southbound hook-ramp will provide significant excessive capacity in the state highway system. The MND provides no clear indication why the addition capacity is necessary. With Alternative 1 and the elimination of the property east of the proposed upgraded southbound off ramp will reduce the land uses and the overall size of the Tulare Towne Centre project. The loss of this property, coupled with the forced reduction of the Tulare Towne Centre from approved commercial to a down zoned mixed-use office/residential project will further reduce the cumulative traffic using this interchange and further suggests that Alternative 1 has significant excess capacity.

7

In fact, the analysis provided in the MND documentation suggests that the excess capacity is a convenience and not required given the projected traffic volumes over the design life of the interchange. Therefore, we would suggest that Alternative 1 is inconsistent with FHWA Design Guidelines, Caltrans Policies, Smart Growth Principals and the San Joaquin Valley Blueprint, all of which call for and in several cases require the "right sizing" of road way facilities to provide for a balance of modal choices in the future. Caltrans has over the past several years played a critical role in leading the Valley toward this future and the selection of Alternative No. 2 for the Cartmill Interchange project can be another example of that leadership.

8

Again thank you for the opportunity to comment on the document. We wish to reiterate Del Lago Development's support for Alternative 2 and the timely completion of this much needed project. Should you need any additional information or wish to discuss these comments, please feel free to contact me.

9

Sincerely,

Charles Clouse, AICP, PTP
Principal

Attachment

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Cc: City Council, City of Tulare
Don Dorman, City of Tulare
Mike Whitlock, City of Tulare
Board of Directors, Tulare County Association of Governments
Board of Supervisors, County of Tulare

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Response to Comment from Charles Clouse, TPG Consulting

Thank you for your comments.

Response to Comment #1: Caltrans thanks the commenter for his support.

Response to Comment #2: Caltrans agrees that a Mitigated Negative Declaration is the appropriate California Environmental Quality Act document for this process.

Response to Comment #3: Caltrans acknowledges that Alternative 1 would result in changes in access and development of the Tulare Towne Center project.

Response to Comment #4: The City of Tulare identified Alternative 2 as their locally preferred option, based on the issues of access and planned development that the commenter raises, as well as cost and right-of-way issues. Both alternatives were analyzed at an equal level of detail, and the draft environmental document was circulated for public review from April 18, 2012 to May 18, 2012. Eight public comments were received and considered in the process to select an alternative.

On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

Response to Comment #5: Caltrans acknowledges the commenter's concerns and the potential for financial loss. However, the environmental document addresses impacts to the human, physical, and natural environment only. Individual financial losses and losses in tax revenues are not considered.

Landowners would be compensated for any property acquired by the City of Tulare. The fair market price would be provided, and potential value would not be considered.

On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

Response to Comment #6: The growth topic in the environmental document (beginning on page 37 of the draft and final) is intended to address potential impacts that would result from unplanned growth over the long term. This category is usually used to address issues like blight and sprawl. Though Caltrans acknowledges that the planned development may not be feasible with the implementation of Alternative 1, it would not result in a change in the overall growth of the area.

Implementation of Alternative 1 would result in the displacement of one existing business and the partial acquisition of three business parcels. This would not be considered a significant relocation of regional retail uses that would be inconsistent with the City of Tulare General Plan.

Response to Comment #7: The proposed project is not designed to increase highway capacity but would increase the capacity of Cartmill Avenue, improve access, and enhance safety. The need for improvements is discussed in Section 1.2, “Purpose and Need” of the environmental document. Currently, intersection levels of service are poor at the northbound off-ramp in the morning and at the northbound and southbound off-ramps in the evenings. Conditions are projected to deteriorate without improvements to a situation in which all on- and off-ramps operate at level of service F (the lowest level of service) at both morning and evening peak hours. Highway operations are not addressed in the Purpose and Need of the environmental document because they are not the focus of this project. Table 2.1.6-2 (page 73) in the traffic section of the environmental document shows the project will not affect mainline operations.

Response to Comment #8: Caltrans has thoroughly evaluated both Alternative 1 and Alternative 2 and has concluded that each alternative satisfies the project’s Purpose and meets the project’s Need to relieve traffic congestion, enhance safety, and provide sufficient clearances. As indicated in the 2008 *Traffic Operations Report* and the 2010 *Supplemental Memo*, and as summarized in the environmental document, both alternatives relieve traffic congestion along Cartmill Avenue (as indicated in Table 1.2 in the draft and final environmental document) and improve access to State Route 99 (as shown in Tables 2.1.6-1 and 2.1.6-3 in the draft and final environmental document), but neither alternative provides additional capacity to the freeway mainline (as shown in Table 2.1.6-2 in the draft and final environmental document). Both alternatives also enhance pedestrian and bicycle mobility within the project area, as discussed on page 76 of the draft and final environmental document.

On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

Please see the response to comment #7 above.

Response to Comment #9: Caltrans acknowledges the commenter's support for Alternative 2. On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

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Comment from Robert J. Keenan, Home Builders Association of Tulare/Kings Counties



Home Builders Association
of Tulare/Kings Counties, Inc.

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May 17, 2012

G. William "Trais" Norris, III, Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Subject: State Route 99/Cartmill Avenue Interchange Study

Dear Mr. Norris:

The Home Builders Association of Tulare/Kings Counties has reviewed the two project alternatives identified in the Project Study Report (PSR) for the State Route 99/Cartmill Avenue Interchange Project. The HBATK's Board of Directors selected Alternative No. 2 as identified in the PSR as the preferred alternative based on the following comparisons of Alternatives 1 and 2.

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1) We are concerned that the consistency of the existing and proposed development remains intact. A large, regional retail commercial development is planned at the northwest corner of Cartmill Avenue and M Street. The development has an approved site plan, with an access point located on M Street north of Cartmill Avenue. Alternative No. 1 would result in access restrictions along the entire length of M Street north of Cartmill Avenue, thereby eliminating the project's access via M Street. The planned development project would be severely jeopardized by such an access restriction. Alternative 2 causes no such impediment to development.

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2) Right-of-way impacts are of concern because Alternative No. 1 would require the taking of the existing ARCO AM/PM mini-mart on the northeast corner of Cartmill Avenue and M Street. Alternative No. 2 would allow the business to remain.

3

Alternative No. 1 would result in a large, undevelopable area being acquired north and east of the ARCO AM/PM mini-mart. The area acquired would be substantially in excess of what is needed for the interchange facilities. The property is currently zoned as Regional Retail Commercial, which is a very high use to lose to excess right-of-way.

3) Project Costs are also of major concern. As discussed above, Alternative No. 1 would require the acquisition of the ARCO AM/PM mini-mart, and regional retail commercial zoned property north and east of the mini-mart. It is expected that these additional right-of-way requirements could add in excess of \$5 million to the project

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California Building Industry Association (CBIA)
National Association of Home Builders (NAHB)

Affiliated with...



cost. Alternative 2 avoids these costly acquisitions and subsequent loss of property and sales taxes to the City of Tulare.

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Cont.

Alternative No. 2, as carried over into the subject Initial Study, is substantially unchanged from what was identified in the PSR. It has been determined to meet the required minimum design life criteria. As such, the Home Builders Association's Board of Directors concurs with the previous findings of Alternative No. 2 being the preferred alternative. We urge the Project Development Team to take our recommendation into consideration and concur with our position.

5

We appreciate the opportunity to provide our comments on this crucial project for the City of Tulare. We look forward to the Caltrans staff bringing Alternative 2 to fruition.

Sincerely,



Robert J. Keenan
President/CEO

Response to Comment from Robert J. Keenan, Home Builders Association of Tulare/Kings Counties, Inc.

Thank you for your comments.

Response to Comment #1: Caltrans acknowledges the commenter's support for Alternative 2. On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

Response to Comment #2: Caltrans acknowledges that Alternative 1 presents access issues that Alternative 2 does not.

Response to Comment #3: Caltrans acknowledges these impacts related to land use and development. The parcel between M Street and State Route 99 would be used for storm water runoff retention basins.

Response to Comment #4: Caltrans notes potential additional costs under Alternative 1. These capital costs presented in Table 1-5 on page 22 of the draft and final environmental document shows that Alternative 1 would cost more than Alternative 2. The construction costs for Alternative 1 are actually less than those of Alternative 2, but right-of-way acquisition, which includes the cost of buying the AM/PM minimart, makes Alternative 1 more expensive than Alternative 2.

Response to Comment #5: Caltrans notes the Home Builders Association of Tulare/Kings Counties, Inc.'s preference for Alternative 2. Both build alternatives were analyzed at an equal level of detail, and the draft environmental document was circulated for public review from April 18, 2012 to May 18, 2012. Eight public comments were received and considered in the process to select an alternative.

On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

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Comment from Delbert and Betty Strange

Delbert D. Strange
Betty L. Lancaster-Strange
464 E. Jackson Avenue
Tulare, CA 93274
April 28, 2012

G. William "Trais" Norris, III
Senior Environmental Planner
Sierra Pacific Environmental Analysis Branch
CALIFORNIA DEPARTMENT OF TRANSPORTATION
Caltrans, District 6
855 M Street, Suite 200
Fresno, CA 93721

RE: Comments on the Initial Study and the Draft Proposed Mitigated Negative Declaration for the State Route 99/Cartmill Avenue Interchange Improvements Project, April 2012; 06-TUL-99-31.3/-32.6; Project ID #06-0000-0368/06-332200.

Dear Mr. Norris:

We are writing to you regarding the above-referenced proposed project. We disagree with the "Determination" that "The proposed project would have no significant effect on: ...land use and planning, community impacts, noise, ...visual resources, air quality, geology and soils, hazards and hazardous materials, [and] traffic and transportation..."

Cartmill Avenue has the distinct potential of becoming a major east-west corridor and highway for future traffic to and from the cities of Tulare, Visalia and East Tulare County. Should this project be completed as proposed, the only other significant east-west traffic corridor in the region would be State Route 198 through Visalia.

The other existing east-west avenues or corridors, such as Caldwell Avenue, Tulare Avenue/SR 137, and Bardsley Avenue, are significantly limited in traffic flow and volume due to major development intrusion within the cities that will limit their ability to be widened to meet future traffic volume needs. Consequently, with these east-west arteries being choked off, the proposed project will significantly alter local and regional growth in a negative way, greatly influencing the overall amount, type, location, and/or timing of regional growth.

"Community Character and Cohesion" will not see improved connectivity; but rather, division and separation as a result of this new major east-west corridor and highway central to the major urban developments within Tulare County!

Significant adverse air quality impacts will result long-term due to the cumulative environmental impacts associated therewith which have not been adequately addressed. No mention has been made of, nor analysis performed on, increased volume of emissions of ozone precursors, CO, hydrocarbons, particulate matter, etc., after project completion.

Regarding "Noise and Vibration," the project does have a substantial potential to increase noise levels near sensitive receptors long-term in a cumulative impact way, contrary to what the Initial Study implies. Besides a large residential community within the zone of influence, there also exist a school and several churches.

The long-term potentially significant impacts due to vibration from vehicular traffic, especially heavy trucks, can be of major concern. Not only damages to structures and foundations, but of even greater concern

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Comments on SR 99/Cartmill Project
PID #06-0000-0368/06-332200

Delbert D. Strange
April 28, 2012
Page 2

are the potential geotechnical and geologic impacts related to the significant potential of a major land subsidence due to increased ground-shaking, liquefaction, and/or potential shrink-swell activity. Seismic activity due to heavy traffic vibrations, seismic earth movements, and the continued overdraft of the groundwater table beneath the City of Tulare north and east toward Visalia could easily trigger a major settling of the land in and around Tulare, permanently damaging building structures, foundations, and the City's infrastructure of streets, sidewalks, buried utilities, etc. None of these issues have been adequately addressed, if addressed at all!

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Cont.

The long-term "Visual and Aesthetics" changes due to the ever-widened roads and overpasses with increasing numbers of signals and street lights could be significant, further dividing the community and adversely changing its character, contrary to the Initial Study's limited analysis.

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The Cumulative Impacts of each of these issues must be adequately addressed under the California Environmental Quality Act of 1970, as revised (CEQA). The CEQA Checklist found on pages 233-241 fails to adequately address many of these issues, as noted above, especially under Section XVIII. Mandatory Findings of Significance, subsection b) which asks: "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)?"

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The "No impact" box is incorrectly marked. The "Potentially significant impact" box should have been marked!

If properly evaluated and analyzed as noted above, each of these very important and significant impacts will have "Cumulatively Considerable" adverse impacts upon the environment and the people of Tulare County.

We urge you to carefully re-evaluate and re-consider each of the above environmental and social issues in the best interests of the people, and their environment and well-being long-term.

As to the two project alternatives proposed, once the above issues have been fully resolved, the better one is clearly Alternative 2 which takes the least acres of farmland out of production, costs the least in taxpayers dollars, and keeps a major gas station business alive! Alternative 2 is best for the economy and best all around; that is, once proper modifications are made to the project to adequately address each of the issues raised above.

8

Please carefully review the Initial Study and seriously consider preparing an Environmental Impact Report for this project.

9

Thank you for the opportunity to comment.

Respectfully yours,



Response to Comments from Delbert and Betty Strange

Thank you for your comments.

Response to Comment #1: The Tulare County Association of Governments 2011 *Regional Transportation Plan* addresses overarching transportation planning and lists specific projects planned for the region. A number of road widening projects are planned for the Tulare area. Figure 3-19 of the *Regional Transportation Plan* illustrates the Tulare County Association of Governments' intended east-west regional corridors: Route 198, Route 137 (Tulare Avenue), and Route 190. Figure 3-14 of the *Regional Transportation Plan* illustrates road widening projects in the city of Tulare funded by local agencies and developers. The plan shows widening projects crossing State Route 99 at Cartmill Avenue, Paige Avenue, Prosperity Avenue, and Bardsley Avenue. The *Regional Transportation Plan* also addresses improvements to interchanges at Avenue 280 (Caldwell Avenue) Paige Avenue, and K Street, as well as widening projects on Route 137 (Tulare Avenue), Caldwell Avenue, and Bardsley Avenue.

One of the primary needs for the project (discussed in Section 1.2 on page 2 of the draft and final environmental document) is to relieve congestion specifically at the northbound and southbound intersections of State Route 99 and Cartmill Avenue, and handle forecasted traffic to 2033. Traffic analyses completed for this project (2008 *Traffic Operation Analysis* and the 2011 *Memorandum*) and summarized in the environmental document concluded that Cartmill Avenue currently operates at acceptable levels of service but without improvements will not operate at acceptable levels of service in the future (see Table 1-2 on page 12 of the environmental document). The traffic analysis also indicates that the Cartmill Avenue/M Street/State Route 99 southbound off-ramp and the Cartmill Avenue/Drive 103/State Route 99 northbound off-ramp intersections currently do not operate at acceptable levels of service (see Table 1-1 on page 11 of the environmental document). Without improvements, Cartmill Avenue will experience significant delays in the future. The traffic analysis indicates that the Road 100/Drive 103/State Route 99 northbound hook ramps and the Cartmill Avenue/State Route 99 southbound on-ramp intersections will not operate at acceptable levels of service in the future (see Table 1-1 on page 11 of the environmental document).

Based on information provided in the *Regional Transportation Plan*, there are other projects planned for the area. Cartmill Avenue is not intended or expected to become a major thoroughfare to the exclusion of other east-west routes. The purpose of the project focuses on handling local traffic and making State Route 99 more accessible.

Additionally, growth in the Cartmill area is planned. The areas around the interchange are within the City of Tulare's Urban Development Boundary and are zoned for retail commercial development.

Response to Comment #2: A *Community Impact Assessment* was prepared in March 2012 for the project and is summarized in Section 2.1 of the environmental document. The project will not add any new roads and therefore will not divide the community. Akers Road is a realignment of Road 100 and will not separate any residences or businesses from the community. As noted above, Cartmill Avenue is not expected to become a major east-west thoroughfare and therefore will not divide the community.

Response to Comment #3: Table 2.2.5-3 on page 136 of the environmental document quantifies operational emissions such as reactive organic gases (ROG), oxides of nitrogen (NO_x), carbon monoxide (CO), carbon dioxide (CO₂), and particulate matter for 2033 with and without the project, an estimated 20 years after project completion. Because air quality modeling is based on traffic studies and those studies are based on planning information to calculate future traffic forecasts, air quality analysis is inherently cumulative and includes planned development and transportation improvements.

The draft environmental document determined that increases in emissions would be minor compared with the future no-build scenario. The *Air Quality Study Report* (May 2009) and the supplemental *Memorandum* (December 2011) documented this analysis in detail and summarized the results of the draft environmental document.

Response to Comment #4: The Noise Study Report modeling indicated that predicted traffic noise increases for Alternative 2 would be less than 5 dB at the identified receptors in 2033. Under the No Build Alternative, predicted traffic noise increases were almost identical to either of the build alternatives. Sensitive receptors in the vicinity of the project area are noted in Table 2.2.6-3 (page 149 in the environmental document) and shown in Figure 2.2.6-1 (page 147 of the environmental document). These include residential, park, lodging, and church land uses. The nearest school is more than one mile east of the interchange. Sound dissipates at a rate of about 4.5 decibels for every doubling of the distance. Generally,

noise studies are about 500 feet from the roadway but can be 1,000 feet. At a distance of one mile, road noise would be well below acceptable thresholds.

Noise analysis is inherently cumulative because it relies on traffic forecasts that account for future planned projects and conditions. The analysis presented in the *Noise Study Report* (December 2011) and summarized in the environmental document (Table 2.2.6-3 on page 149) indicates that noise levels in 2033 with either build alternative would be increased by 1 decibel in less than one-third of the monitoring locations and would reduce noise levels at two locations under Alternative 2. As stated on page 145 of the environmental document, changes in noise of 1 to 2 decibels are generally not detectable. Therefore, neither alternative would result in a considerable contribution to a cumulative impact.

Response to Comment #5: Impacts from vibration are not expected to occur. Trucks are supported on pneumatic tires and spring suspension systems. As such trucks typically generate little if any perceptible groundborne vibration adjacent to the highway. Trucks can induce perceptible vibration if they roll over discontinuities in the roadway surface such as potholes. This however can be readily remedied by repairing the road. Roadway surfaces associated with the proposed project will be smooth and will not be the source of substantial groundborne vibration. Vibration levels generated will be well below thresholds for potential damage.

As discussed in the Revised Geotechnical Report (December 2011) and in Section 2.2.2 of the environmental document, the potential for seismic hazards, such as fault rupture and landslides are low. Liquefaction and/or seismically induced settlement is not possible at the project site due to the depth of the groundwater table and relatively stiff soil profile. Groundborne vibration from trucks would not contribute to any seismic activity, as they are surface vibrations by geotechnical standards. Therefore, vibration from trucks will not trigger land subsidence or settling, regardless of the level of the groundwater table.

Response to Comment #6: As discussed on page 194 of the environmental document, while a cumulative impact to visual resources does exist based on the proposed development of agricultural land in the area, the proposed project will not contribute to visual impacts. The project is an improvement to an existing interchange and will not change the visual character of the area. The proposed project will not result in the widening of Cartmill Avenue past the immediate vicinity of the interchange. The analysis of cumulative effects for visual resources includes the

project and reasonably foreseeable projects in the vicinity that roughly corresponds to the area illustrated in Figure 2.1.7-1 on page 83 of the environmental document.

Response to Comment #7: Cumulative impacts are discussed in Section 2.4 of the environmental document. As noted in Response to Comment #3 and #4 above, the air quality and noise analyses are inherently cumulative; the project is not expected to contribute to a cumulative air quality or noise impact. As noted in the Response to Comment #6, there will be no contribution to a cumulative visual impact. As noted in Response to Comment #1, there are capacity increasing projects planned for other east-west roadways and Cartmill Avenue is not expected to become a major thoroughfare. Based on this, cumulative community impacts are not expected (Response to Comment #2). Therefore, no cumulative impacts are anticipated.

Response to Comment #8: Caltrans notes the commenters' support of Alternative 2. On May 30, 2012, the project development team identified Alternative 2 as the preferred alternative because it results in fewer acres of impacts to biological resources and farmland, displaces fewer businesses, requires less right-of-way acquisition, and results in fewer impacts to surrounding land uses while meeting the project purpose and need.

Response to Comment #9: An environmental impact report is required when a project may result in significant environmental impacts that cannot be mitigated to a less-than-significant level (California Environmental Quality Act Guidelines, Section 15064) or where required by statute (California Environmental Quality Act Guidelines, Section 15081.5). Based on the analysis provided in the technical studies prepared for this project and the summary of that analysis in the draft environmental document, Caltrans determined that a Mitigated Negative Declaration, supported by an Initial Study, is the appropriate environmental document for this project. All impacts under the California Environmental Quality Act that would result from the project are either less than significant or can be reduced to less-than-significant levels with the use of mitigation measures.

List of Technical Studies Bound Separately

Human Environment

SR 99/Cartmill Avenue Interchange Improvement Project Community Impact Assessment. March 2012.

Traffic Operations Analysis. April 2008.

Supplemental Traffic Forecasts and Traffic Operations for the State Route 99/Cartmill Avenue Interchange Modification Memorandum. April 2011.

State Route 99/Cartmill Avenue Interchange Improvements Visual Resources Report. December 2011.

Historical Resources Compliance Report. December 2011. Including:

Cartmill Avenue Interchange Project Historic Resources Evaluation Report. December 2011.

Archaeological Survey Report, Cartmill Avenue Interchange Project, City of Tulare, Tulare County, California. December 2011.

Physical Environment

State Route 99/Cartmill Avenue Interchange Improvements Location Hydraulic Study. December 2011.

Water Quality Assessment for the State Route 99/Cartmill Avenue Interchange Improvement Project. Memorandum, January 2012.

Revised Preliminary Geotechnical Design and Materials Report, Proposed Cartmill Avenue and State Route 99 Interchange Project, Tulare, Tulare County, California, January 2012.

Cartmill Avenue/Route 99 Interchange Improvements (Tulare County, California) Assessment Report on Paleontological Sensitivity. July 2008.

State Route 99/Cartmill Avenue Interchange Improvements Paleontological Evaluation Report. December 2011.

Phase I Environmental Site Assessment, Proposed Right-of-Way/Interchange, State Route 99 and Cartmill Avenue, Tulare County, California. July 2006.

Phase I Environmental Site Assessment Update, Proposed Right-of-Way/Interchange, State Route 99 and Cartmill Avenue, Tulare County, California. January 2012.

Preliminary Site Investigation State Route 99/Cartmill Avenue Proposed Interchange Improvement Project, Tulare County, California. August 2012.

State Route 99/Cartmill Avenue Interchange Improvements Project Air Quality Technical Report. May 2009.

Revised Supplement to Air Quality Technical Report for the State Route 99/Cartmill Avenue Interchange Improvements Project. December 2011.

State Route 99/Cartmill Avenue Interchange Improvements Noise Study Report. December 2011.

Biological Environment

State Route 99/Cartmill Avenue Interchange Improvements Natural Environment Study. December 2011.

Revised State Route 99/Cartmill Avenue Interchange Improvements Natural Environment Study. July 2012.

Delineation of Wetlands and other Waters for the State Route 99/Cartmill Avenue Interchange Improvements Project. July 2012.