

# **Hosking Avenue / State Route 99 Interchange – New Connection Project**

Approximately 0.5 mile south to 0.7 mile north of Hosking Avenue

06-KER-99-18.0/19.2

EA 06-0C9300

## **Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment**



Prepared by the

State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 U.S. Code 327.

**June 2009**





## **General Information About This Document**

### ***What's in this document?***

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Kern County, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, and potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

### ***What should you do?***

- Please read this Initial Study/Environmental Assessment. Additional copies of this document as well as the technical studies are available for review at the Caltrans district office at 2015 E. Shields Avenue, Suite 100, Fresno, CA, 93726 and at the following locations:
  - Beale Memorial Library located at 701 Truxtun Avenue in Bakersfield, CA, 93301
  - TRIP Office at 900 Truxtun Avenue, Suite 201, Bakersfield, CA 93301
  - City of Bakersfield Planning Department at 1715 Chester Avenue, Bakersfield, CA 93301
  - Kern Council of Governments at 1401 19th Street, Suite 300, Bakersfield, CA, 93301
  - City of Bakersfield Public Works Department at 1501 Truxtun Avenue, Bakersfield, CA 93301
- We welcome your comments. If you have any concerns regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

Sarah Gassner, Branch Chief  
Southern Sierra Environmental Analysis Branch  
California Department of Transportation  
2015 E. Shields Avenue, Suite 100  
Fresno, CA 93726

Submit comments via email to: [Sarah\\_Gassner@dot.ca.gov](mailto:Sarah_Gassner@dot.ca.gov).

Submit comments by the deadline: September 17, 2009.

### ***What happens next?***

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

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Sarah Gassner, Southern Sierra Environmental Analysis Branch, 2015 E. Shields Avenue, Suite 100, Fresno, CA, 93726; (559) 243-8243 Voice, or use the California Relay Service TTY number, 1-800-735-2929.



SCH# \_\_\_\_\_  
06-KER-99-18.0/19.2  
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Hosking Avenue / State Route 99 Interchange – New Connection Project  
Approximately 0.5 mile south to 0.7 mile north of Hosking Avenue, PM 18.0 / 19.2

**INITIAL STUDY  
with Proposed Mitigated Negative Declaration  
/ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to: (State) Division 13, California Public Resources Code  
(Federal) 42 U.S. Code 4332(2)(C) and 23 U.S. Code 327

THE STATE OF CALIFORNIA  
Department of Transportation

6/18/09  
Date of Approval

  
Christine Cox-Kovacevich  
Office Chief, Central Region  
Environmental, North  
California Department of Transportation



# Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

## ***Project Description***

The California Department of Transportation, District 6 (Caltrans), in conjunction with the City of Bakersfield, is proposing a new public road connection via an interchange on State Route 99 at Hosking Avenue (Post Mile 18.5). Figure 1-1 shows the project vicinity. The proposed interchange would replace the existing Hosking Road Overcrossing with a new structure that would carry three lanes in each direction with sidewalks and shoulders on both sides. The connection to State Route 99 would be accomplished with a partial cloverleaf interchange. Loop on-ramps would provide access to State Route 99 for eastbound-to-northbound and westbound-to-southbound directions of travel, while spread diamond off-ramps and direct on-ramps would serve traffic in the northbound and southbound directions. Figure 1-2 shows the project location. The project also includes widening of Hosking Avenue east and west of the overcrossing within the interchange area. Once the interchange is in place, the City of Bakersfield would require other projects on each side of the interchange to widen Hosking Avenue to meet the city's six-lane major arterial standard as demand requires.

## ***Determination***

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision regarding the project is final. This Mitigated Negative Declaration is subject to modification based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on: Coastal Zones, Cultural Resources, Farmlands and Timberlands, Geology, Soils, Seismic, and Topography, Hydrology and Floodplain, Parks and Recreation, Public Services, Visual/Aesthetics, Wetlands and Other Waters, and Wild or Scenic Rivers.

In addition, the proposed project would have no significant effect on: Hazards and Hazardous Materials, Noise, Land Use and Planning, Population and Housing, Transportation and Traffic, and Utilities and Service Systems.

In addition, the proposed project would have no significantly adverse effect on Air Quality, Biological Resources, and Paleontological Resources because the following mitigation measures would reduce potential effects to insignificance:

- Air quality resources would be mitigated by: (1) operating newer, well-maintained equipment and retrofitting existing equipment with control devices; (2) using cleaner fuels; (3) prohibiting truck idling in excess of 10 minutes; (4) utilizing proper planning to reduce rework and multiple handling of earth materials; (5) paying a mitigation fee to the air quality management district; (6) complying with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999); (7) controlling fugitive dust emissions; (8) locating equipment and material storage sites as far away from residential and park uses as practical; (9) establishing Environmentally Sensitive Areas for sensitive air receptors; and (10) routing and scheduling construction traffic to reduce congestion and related air quality impacts.
- Biological resources would be mitigated by: (1) ground preparation would be scheduled after the breeding season (the breeding season is generally March through August), when all burrowing owl chicks in the region have fledged and are fully independent; (2) ground preparation would be scheduled between September and the end of November when kit fox pups are not likely to be present in dens; (3) prior to clearing and grubbing, the construction footprint would be surveyed to determine whether habitation by burrowing owls or kit foxes has occurred; (4) if habitation by burrowing owls or kit foxes has occurred, burrows would be excavated by a qualified biologist. Any owls or kit foxes present would be removed from the burrow. The burrow, and any others found nearby, would be collapsed to preclude burrowing owls or kit foxes from returning back to them; (5) an authorized biologist would monitor the early stages of mechanized site preparations to verify no unnoticed burrowing owl or kit fox burrows remain in the construction footprint; (6) monetary payment into the general Metropolitan Bakersfield Habitat Conservation Plan operating fund in accordance with the requirements of the Metropolitan Bakersfield Habitat Conservation Plan would suffice for all unavoidable incidental takes as may be required to evict kit foxes from dens within the construction area; (7) a Section 2080.1 Permit for Threatened and Endangered Species will be required; and (8) a Biological Opinion will be required.
- Paleontological resources would be mitigated by (1) developing a Paleontological Mitigation Plan by a qualified principal paleontologist prior to the start of construction that is in compliance with Caltrans paleontological mitigation guidelines; and (2) in the event paleontological resources are encountered during earthwork, the construction contractor shall cease activity in the immediate area (i.e., redirect activities into another area) until a

qualified paleontologist can evaluate the discovery and implement appropriate treatment measures.

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Christine Cox-Kovacevich  
Office Chief, Central Region  
Environmental North  
California Department of Transportation

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Date



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## **List of Abbreviated Terms**

Caltrans	California Department of Transportation
CO	carbon monoxide
dBA	A-weighted decibels
NOx	nitrogen oxides
O <sub>3</sub>	ozone
PM <sub>10</sub>	inhalable particulate matter
PM <sub>2.5</sub>	fine particulate matter
ppm	parts per million

# **Chapter 1**      **Proposed Project**

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## **1.1 Introduction**

The Department of Transportation, District 6 (Caltrans), in conjunction with the City of Bakersfield, is proposing a new public road connection by constructing a new interchange on State Route 99 at Hosking Avenue (Post Mile 18.5). Hosking Avenue currently is a two-lane, east-west road that crosses over State Route 99. Currently, there is a sidewalk on the north side of the Hosking Avenue Overcrossing that is a little more than 5 feet wide. There are no on- or off-ramps from Hosking Avenue to State Route 99. The northeast and southeast quadrants of the project area are currently undeveloped. The Trailer Mart, a retail trailer sales outlet, and a horse track facility are located in the northwest quadrant of the project area. Residential construction is underway in the southwest quadrant.

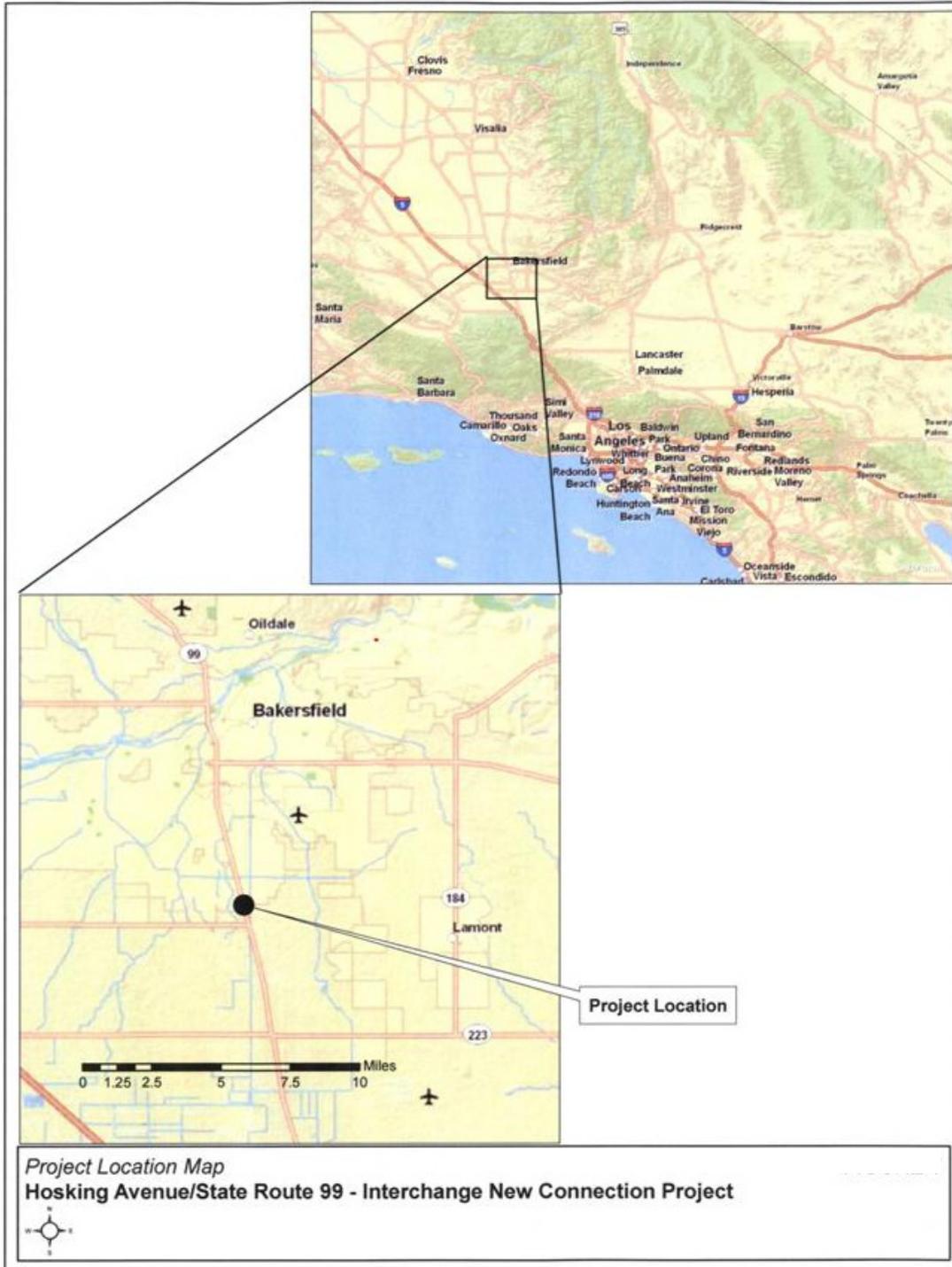
The proposed interchange would replace the existing Hosking Avenue overcrossing with a road that would have three lanes for traffic in each direction (eastbound and westbound) with sidewalks and shoulders on both the north and south sides. These improvements would provide better circulation for vehicles, pedestrians, and bicycles. The connection to State Route 99 would be accomplished by constructing a partial cloverleaf interchange. The project would also include widening Hosking Avenue on the east and west sides of the overcrossing. Figures 1-1 and 1-2 show project vicinity and location maps.

The proposed project is fully funded and is included in the Kern Council of Governments Final 2007 Destination 2030 Regional Transportation Plan. The proposed project is included in Table 4.1 – Constrained Program of Projects; and in the Metropolitan Bakersfield major Highway Network Improvement Projects (2007-2010) of the Final 2007 Regional Transportation Plan. The project is also included in Amendment 2 to the Federal Transportation Improvement Program, which is currently being processed; approval is expected in September 2009.



Source: Parsons 2009

Figure 1-1 Project Vicinity Map



Source: Parsons, 2008

**Figure 1-2 Project Location Map**

## **1.2 Purpose and Need**

### **1.2.1 Purpose**

The purpose of the proposed project is:

- To relieve congestion on Panama Lane, State Route 119, Wible Road and H Street, in order to improve traffic flow in the project area; and
- To relieve congestion at the existing interchanges at Panama Lane in order to improve traffic flow in the project area.

### **1.2.2 Need**

The project site is in a historically agricultural area that has experienced rapid growth and development in the last decade, with agricultural uses making way for residential, commercial, and some light-industrial uses. The southwest area of Bakersfield, surrounding the Hosking Avenue/State Route 99 overcrossing, has not only experienced significant development, but more residential, commercial, and industrial developments are proposed. This development has already begun to have an impact on the effectiveness of streets and highways in the project area. By the planning horizon year for this project, 2035, substantial portions of the area's transportation system will experience congestion if no improvements are made.

The Kern Council of Governments maintains and runs a travel-demand forecast model for the Kern County region. The model is used to forecast future transportation infrastructure needs by predicting future traffic patterns based on a variety of factors. The latest model (2007) incorporates growth consistent with the general plan. The traffic analysis in this document is based on future year traffic forecasts from this model. The Kern Council of Governments estimates the population in Kern County will increase from 765,190 persons in 2005 to 1,726,200 persons in 2050; a corresponding increase in traffic volumes is anticipated.

#### **1.2.2.1 Capacity**

Traffic volume is defined through the use of the Levels of Service rating. Levels of Service describe the operating conditions a motorist would experience while traveling on a highway or surface streets. This rating system ranges from "A" to "F" with "A" being free-flowing traffic and "F" being traffic with heavy congestion and considerable delays (see Figures 1-3 and 1-4 for an illustration of level of service).

# LEVELS OF SERVICE

## Unsignalized Intersections

Four-Way Stop

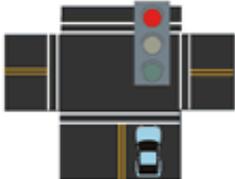
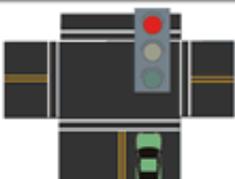
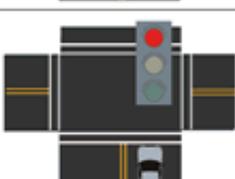
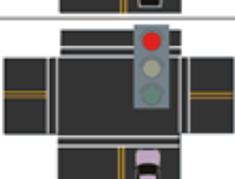
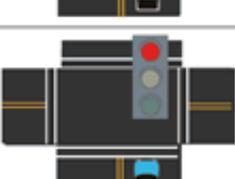
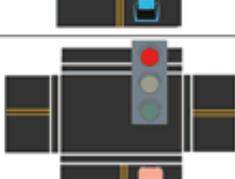
Level of Service	Flow Conditions	Delay per Vehicle (seconds)	Technical Descriptions
<b>A</b>		<10	Very short delays
<b>B</b>		10-15	Short delays
<b>C</b>		16-25	Minimal delays
<b>D</b>		26-35	Minimal delays
<b>E</b>		36-50	Significant delays
<b>F</b>		>50	Considerable delays

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

Figure 1-3 Level of Service – Intersections without Signal Lights

# LEVELS OF SERVICE

for Intersections with Traffic Signals

Level of Service	Delay per Vehicle (seconds)
<b>A</b>	 $\leq 10$
<b>B</b>	 11-20
<b>C</b>	 21-35
<b>D</b>	 36-55
<b>E</b>	 56-80
<b>F</b>	 >80

**Factors Affecting LOS of Signalized Intersections**

**Traffic Signal Conditions:**

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

**Geometric Conditions:**

- Left- and right-turn lanes
- Number of lanes
- Etc.

**Traffic Conditions:**

- Percent of truck traffic
- Number of pedestrians
- Etc.

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

**Figure 1-4 Level of Service – Intersections with Signal Lights**

Table 1.1 displays the existing ramp conditions in terms of level of service maintained. Table 1.2 displays existing intersection conditions in terms of level of service and delay in seconds at the intersections. As the data on Tables 1.1 and 1.2 shows, the ramps and intersections are currently operating at desired levels (level of service C or better) at all but two locations. The southbound off-ramp at Panama Lane is operating at a level of service D during the afternoon peak hours. The intersection at State Route 119 and Wible Road is operating at a level of service F, the worst possible level, during the afternoon peak hours.

**Table 1.1 Existing Ramp Level of Service Data**

Freeway Segment	Existing Conditions	
	Morning Peak	Afternoon Peak
	LOS	LOS
<b>Northbound Direction</b>		
State Route 119 off-ramp	B	C
State Route 119 on-ramp (loop)	B	B
State Route 119 on-ramp (direct)	B	C
Panama Lane off-ramp	B	C
Panama Lane on-ramp (loop)	C	C
Panama Lane on-ramp (direct)	C	C
<b>Southbound Direction</b>		
Panama Lane off-ramp	C	D
Panama Lane on-ramp (loop)	B	B
Panama Lane on-ramp (direct)	B	C
State Route 119 off-ramp	C	C
State Route 119 on-ramp (loop)	B	B
State Route 119 on-ramp (direct)	B	B

Source: Parsons 2008

**Table 1.2 Existing Intersection Traffic Flow Data**

Intersection	Existing Conditions			
	Morning Peak		Afternoon Peak	
	LOS	Delay (seconds)	LOS	Delay (seconds)
Panama Lane and Wible Road	C	23.3	C	25.1
Panama Lane and State Route 99 southbound off-/on-ramps	B	14.8	B	19.9
Panama Lane and State Route 99 northbound off-/on-ramps	B	12.5	B	10.6
Panama Lane and Colony Street	B	17.8	B	18.0
Panama Lane and H Street	C	25.4	C	25.7
Berkshire Road and Wible Road	C	15.9	B	14.3
Berkshire Road and H Street	A	9.4	B	11.1
Hosking Avenue and Wible Road	A	9.8	B	14.3
Hosking Avenue and H Street	A	8.6	B	11.4
McKee Road and Wible Road	A	8.1	A	9.0
McKee Road and H Street	A	8.3	A	9.2
State Route 119 and Wible Road	C	19.4	F	63.6
State Route 119 and Hughes Street	B	14.7	C	17.9
State Route 119 and State Route 99 southbound off-ramp/Champagnoni Street	C	24.8	C	34.5
State Route 119 and H Street	C	26.7	C	20.2
H Street and State Route 99 northbound off-ramp	B	11.8	A	9.5

Source: Parsons 2008

Table 1.3 displays the No-Build ramp conditions in terms of level of service and traffic speed maintained. Table 1.4 displays the No-Build intersection conditions in terms of level of service and delay in seconds at the intersections.

As the data on Table 1.3 show, the southbound off-ramp at Panama Lane would deteriorate under the No-Build alternative from level of service C to level of service D during the morning peak hours and from level of service D to level of service F during the afternoon peak hours. Two other ramps also would have diminished levels of service. The northbound off-ramp at Panama Lane would diminish from a level of service C during the peak afternoon hours to a level of service D.

**Table 1.3 No-Build Ramp Traffic Flow Data**

Freeway Segment	No-Build Alternative (Year 2035)	
	Morning Peak	Afternoon Peak
	LOS	LOS
Northbound Direction		
State Route 119 off-ramp	C	C
State Route 119 on-ramp (loop)	B	B
State Route 119 on-ramp (direct)	B	<b>B</b>
Panama Lane off-ramp	C	D
Panama Lane on-ramp (loop)	C	C
Panama Lane on-ramp (direct)	C	B
Hosking Avenue off-ramp	---	---
Hosking Avenue on-ramp (loop)	---	---
Hosking Avenue on-ramp (direct)	---	---
Southbound Direction		
Panama Lane off-ramp	D	F
Panama Lane on-ramp (loop)	B	B
Panama Lane on-ramp (direct)	B	B
Hosking Avenue off-ramp	---	---
Hosking Avenue on-ramp (loop)	---	---
Hosking Avenue on-ramp (direct)	---	---
State Route 119 off-ramp	C	D
State Route 119 on-ramp (loop)	B	B
State Route 119 on-ramp (direct)	B	B

Source: Parsons 2008

As the data on Table 1.4 show, under the No-Build Alternative 9 of the 20 intersections analyzed would offer degraded levels of service during both the morning and afternoon peak hours. These intersections are:

- Panama Lane and Wible Road
- Panama Lane and State Route 99 southbound on- and off-ramps
- Panama Lane and H Street
- Berkshire Road and Wible Road
- Berkshire Road and H Street
- Hosking Avenue and Wible Road
- Hosking Avenue and H Street
- State Route 119 and Wible Road
- State Route 119 and Hughes Lane

Two intersections, State Route 119 and H Street and H Street and State Route 99 northbound off-ramp, would offer degraded levels of service during only the afternoon peak hours.

**Table 1.4 No-Build Intersection Traffic Flow Data**

Intersections	No-Build Alternative (Year 2035)			
	Morning Peak		Afternoon Peak	
	LOS	Delay (seconds)	LOS	Delay (seconds)
Panama Lane and Wible Road	F	109.0	E	69.7
Panama Lane and State Route 99 southbound off-/on-ramps	E	45.2	F	85.9
Panama Lane and State Route 99 northbound off-/on-ramps	B	17.6	B	18.1
Panama Lane and Colony Street	B	18.3	C	20.4
Panama Lane and H Street	E	79.6	F	130.6
Berkshire Road and Wible Road	F	127.3	F	86.4
Berkshire Road and H Street	F	65.9	F	235.1
Hosking Avenue and Wible Road	D	33.1	E	41.6
Hosking Avenue and Hughes Road	B	18.3	B	14.3
Hosking Avenue and State Route 99 southbound off-/on-ramps	---	---	---	---
Hosking Avenue and H Street	E	41.2	F	95.0
McKee Road and Wible Road	B	10.5	B	12.8
McKee Road and Hughes Road	A	9.0	A	9.8
McKee Road and H Street	B	11.2	C	17.9
State Route 119 and Wible Road	F	156.5	F	2449.3
State Route 119 and Hughes Street	F	241.6	F	2154.4
State Route 119 and State Route 99 southbound off-ramp/Champagnoni Street	C	23.9	C	29.0
State Route 119 and H Street	C	34.8	D	43.1
H Street and State Route 99 northbound off-ramp	C	19.3	F	192.8

Source: Parsons 2008

## **1.3 Alternatives**

The proposed action would involve constructing a new interchange at Hosking Avenue and State Route 99 and would involve widening Hosking Avenue from a two-lane road to a six-lane road. The following section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding and minimizing environmental impacts.

### **1.3.1 Build Alternative**

The Build Alternative consists of constructing a new partial cloverleaf interchange and widening Hosking Avenue from a two-lane to a six-lane road for approximately a quarter-mile on the east and west sides of the Hosking Avenue Overcrossing. A new six-lane bridge with sidewalks on Hosking Avenue would be constructed over State Route 99. A curbed median and left-turn lane would be constructed at Hughes Lane and Hosking Avenue on the west side of State Route 99 and at H Street and Hosking Avenue east of State Route 99. Both of the off-ramp intersections on Hosking Avenue would be signalized. The geometry of the northbound on-ramps would be designed to accommodate ramp metering. Approximately 1,300 feet of auxiliary lane would be constructed north of the southbound off-ramps along southbound State Route 99. Drainage infiltration basins would be constructed within the footprint of the proposed action. Figure 1-1 shows the proposed action build features. Project cross-sections can be found on Figures 1-5a and b.

### **1.3.2 No-Build Alternative**

Under the No-Build Alternative, the proposed interchange would not be constructed and the proposed improvements to Hosking Avenue would not be implemented. Traffic operations at the existing interchanges at Panama Lane and State Route 119 would continue to deteriorate and the local roads would become overburdened by the expected increase in traffic associated with the anticipated growth in the project area.

### **1.3.3 Comparison of Alternatives**

After the public circulation period, all comments would be considered, and Caltrans would select a preferred alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, if no unmitigable significant adverse impacts are identified, Caltrans would

prepare a Negative Declaration or Mitigated Negative Declaration. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as assigned by the Federal Highway Administration, would issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act. Table 1.5 shows a comparison of environmental impacts between the No-Build and Build Alternatives.

**Table 1.5 Comparison of Alternatives**

<b>Criteria</b>	<b>Build Alternative</b>	<b>No-Build Alternative</b>
Partial Acquisitions	5	0
Full Acquisitions	4	0
Improves Traffic Flow	Yes	No
Accommodate Anticipated Growth	Yes	No
Tree Removal	Removal of 6 gum trees ( <i>Eucalyptus</i> species)	No Tree Removal Required
Affected Threatened/Endangered Species	Yes	No
Costs	\$29.5 million (in 2008 dollars)	Maintenance and repair costs only

**1.3.4 Alternatives Considered and Withdrawn from Further Discussion**

Three alternatives were considered and withdrawn during the project development process.

Alternative 2 proposed a Partial Cloverleaf configuration on the east side and a Spread Diamond configuration on the west side of State Route 99. This Alternative would have affected twelve properties and would have needed approximately thirty-eight acres of new right-of-way. Alternative 2 was eliminated from further discussion because of costs and impacts to existing development (including more right-of-way takes in the southwest quadrant).

Alternative 3 proposed no changes to improve infrastructure beyond the 2030 Regional Improvements. The 2030 Regional Improvements are anticipated future infrastructure improvements with and without the proposed interchange at Hosking Avenue. Alternative 3 was eliminated from further discussion because the levels of service at the interchanges of Panama Lane range from B to F and State Route 119 with State Route 99 range from A to F. Levels of service below D are considered unacceptable. The level of service at the intersection of Panama Lane and Wible Road would be F, which is unacceptable.

Alternative 4 proposed additional changes beyond the 2030 Regional Improvements including (1) at the State Route 99 southbound off-ramp at Panama Lane add one new

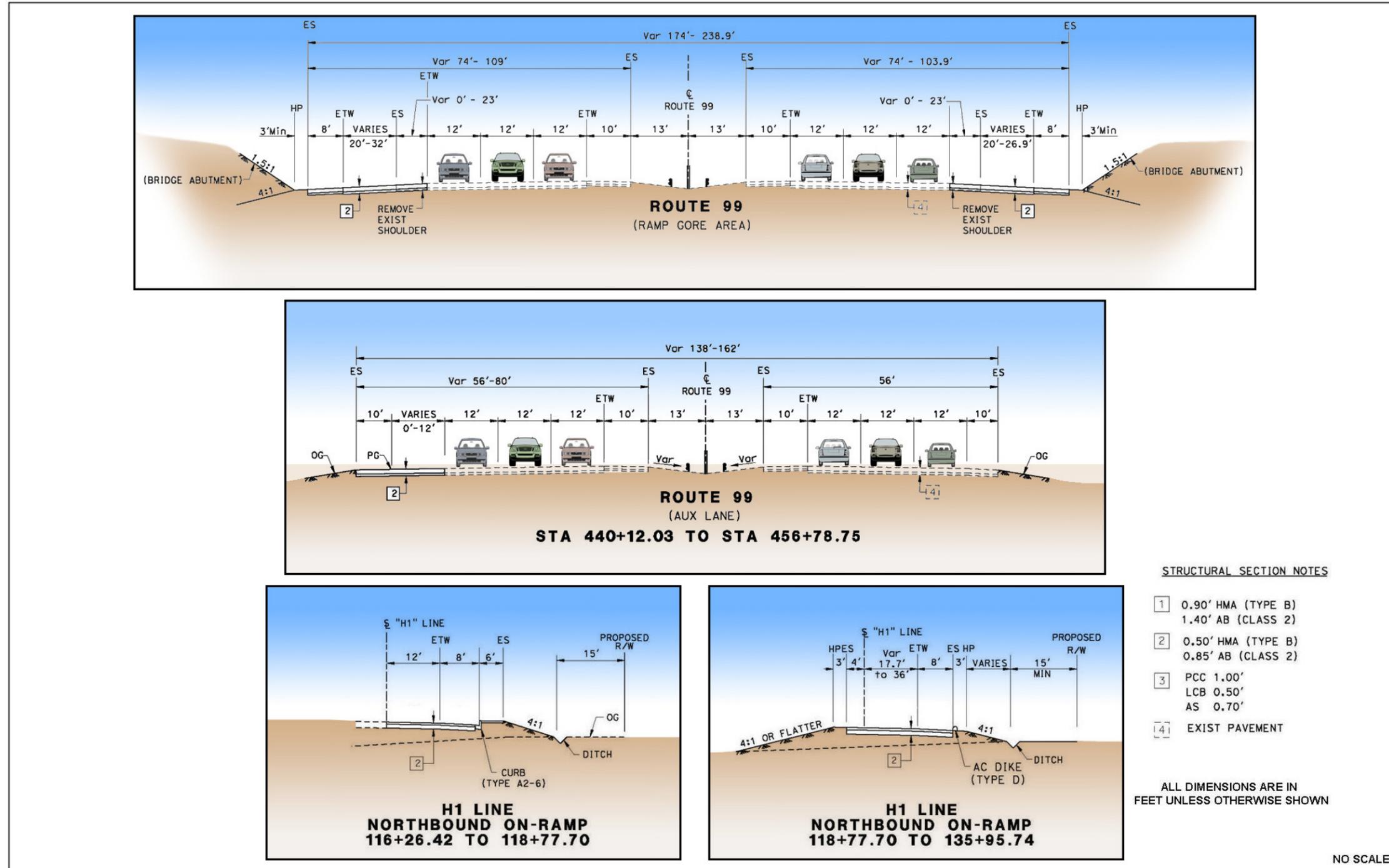
southbound right-turn lane, one new eastbound through lane, one new westbound through lane, and one 1,200 foot auxiliary lane on southbound State Route 99; (2) at the State Route 99 northbound off-ramp at Panama Lane, add one new shared northbound left/right lane; (3) at Panama Lane and Wible Road, add one new eastbound through lane and one new westbound through lane; (4) at the State Route 119 southbound off-ramp at State Route 99, add one new southbound left-turn lane and convert the eastbound right-turn lane to a shared right-turn/through lane; and (5) at the Hosking Avenue Overcrossing, add two new eastbound through lanes and two new westbound through lanes. Alternative 4 was eliminated from further discussion for several reasons; first because its cost was estimated to be over \$10 million more than the proposed alternative. In addition, Alternative 4 required that several existing infrastructure elements be removed or relocated including multiple soundwalls, utility structures, fencing, and irrigation canals, and called for several right-of-way acquisitions including homes, gasoline stations, strip malls, and a drug store. Also, a cemetery lies approximately six feet below an on-ramp near Panama Lane and Wible Road.

#### 1.4 Permits and Approvals Needed

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

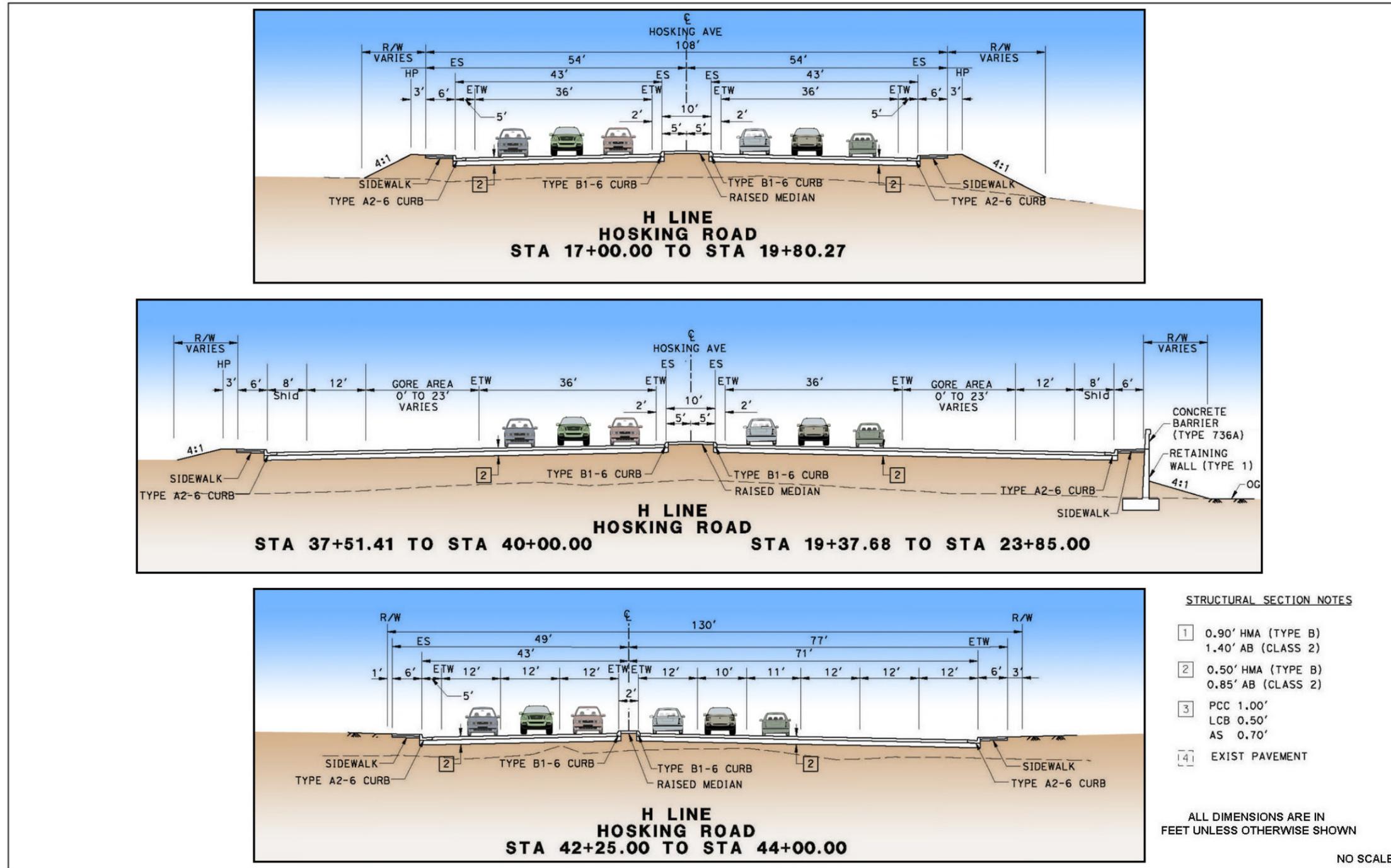
<b>Agency</b>	<b>Permit/Approval</b>	<b>Status</b>
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review	A Biological Assessment was submitted to the United States Fish and Wildlife Service on May 29, 2009. A Biological Opinion would be rendered before the Final Environmental Document is approved.
California Department of Fish and Game	Section 2080.1 Agreement for Threatened and Endangered Species	Section 2080.1 permit is anticipated before construction.
San Joaquin Valley Air Pollution Control District	Construction emission reductions approval	To be obtain prior to the start of construction.

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TYPICAL CROSS SECTIONS

Figure 1-5a Typical Cross Sections



TYPICAL CROSS SECTIONS

Figure 1-5b Typical Cross Sections

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

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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. Related regulatory information—the laws, regulations, and governmental and regulatory agencies involved for each impact area—is provided in Appendix G.

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

***Coastal Zones.*** Based on the Community Impact Assessment completed in January 2009, the project is not located within a designated coastal zone.

***Wild/Scenic Rivers.*** Based on the Community Impact Assessment completed in January 2009, the project is not located near a wild or scenic river.

***Parks and Recreation.*** Based on the Community Impact Assessment completed in January 2009, the project is not located near a park or recreational facility.

***Farmlands/Timberlands.*** Based on the Parsons memorandum to Caltrans concerning farmlands in January 2009, there are no farmlands or timberlands within the project location.

***Cultural Resources.*** Based on the Historic Property Survey Report completed in January 2009, there are no historic properties or historical resources located within or adjacent to the project area.

***Hydrology and Floodplain.*** Based on the Water Resources and Water Quality Technical Report and the Location Hydraulics Study Memorandum completed in

February 2009, the project is not in a 100-year flood hazard area. The groundwater table is more than 100 feet below ground surface within the project area. The project would have no impact on local hydrology.

***Geology/Soils/Seismic/Topography.*** According to the Preliminary Materials/Geotechnical Design Report completed in April 2008, there are no geological, soils, or seismic concerns within the project limits as they relate to public safety and project design.

***Wetlands and other Waters.*** Based on the Natural Environment Study completed in January 2009, the project is not located within a wetlands area or near other waters of significance.

## **2.1 Human Environment**

### **2.1.1 Land Use**

#### **2.1.1.1 Existing and Future Land Use**

##### ***Affected Environment***

This section discusses impacts to land use as a result of implementation of the proposed project. The analysis is based upon the results of the Community Impact Assessment prepared in January 2009 for this project.

##### **Regional Context**

As the principal north/south freeway in the Central Valley, State Route 99 is a major connector to all east/west routes that link to the San Francisco Bay Area, the Central Coast, and the Sierra Nevada Mountains. State Route 99 is also a major route in the most productive agricultural region in the world, critical to the economic vitality of the state. Since State Route 99 is a Caltrans state high emphasis focus route on the interregional road system, there are many capacity improvements noted in the 1998 Interregional Transportation Strategic Plan and the 2000 Supplement to the plan. State Route 99 is classified as a highway on the national highway system as part of the strategic highway corridor network, under the Federal-Aid Surface Transportation Program. State Route 99 is also part of the national network under the Surface Transportation Assistance Act for large trucks. Finally, State Route 99 has been classified as a Caltrans “Priority Global Gateway” for goods movement in the Global Gateways Development Program. The State Route 99/Hosking Avenue interchange would be one of nine interchanges on State Route 99 that serve Bakersfield.

### **Local Context**

The project site is in a historically agricultural area that has experienced rapid growth and development in the last decade, with agricultural uses making way for residential, commercial, and some light-industrial uses. There is no active agricultural land within the project study area; active agricultural land nearest the project study area includes a maize-sorghum crop located at the southwest corner of State Route 119 and Wible Road, approximately 1 mile from the project area. Commercial uses are concentrated near State Route 99 interchanges at Panama Lane and State Route 119. Panama Lane's commercial uses include newly developed strip-malls, fast-food establishments, restaurants, gas stations, and big-box retail outlets. State Route 119's commercial uses are generally older, less well-maintained, and include small neighborhood-serving commercial uses. Commercial and light-industrial uses are also present along Union Avenue; the commercial uses are generally small and include Latino ethnic stores. The majority of land use in the project study area is residential. Generally, the residential developments comprise new single-family homes with soundwalls surrounding their respective developments. The residential uses are in various stages of development; most of them are completed, while some are currently under construction and others are in the preliminary stages of development including land grading and clearing. Also found throughout the project study area are vacant or abandoned parcels in various conditions.

### **Environmental Consequences**

Land use impacts, if they occur, would include project effects that would either conflict with General Plan designation or zoning or with applicable environmental plans and policies. The proposed project does not require any zoning changes.

No temporary impacts on land use would occur because no change in land use or zoning along the project corridor would be required, nor would there be unacceptable intrusive impacts on adjacent land uses during the construction period.

The proposed project would not encourage land use changes that would be in conflict with long-term plans and policies; therefore, it would not have an adverse cumulative impact on land use and planning.

The project therefore does not conflict with the land use goals and policies of the Kern County General Plan, the Metropolitan Bakersfield General Plan or the State Route 99 Corridor Enhancement Master Plan.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Since the project does not require any zoning changes, the project does not conflict with the land use goals and policies of the General Plan or other applicable environmental plans and policies. No mitigation would be required.

#### **2.1.1.2 Consistency with State, Regional, and Local Plans**

##### ***Affected Environment***

Adopted plans that guide development within the study area include the Kern County General Plan, the Metropolitan Bakersfield General Plan, the State Route 99 Corridor Enhancement Master Plan, the Metropolitan Bakersfield Habitat Conservation Plan, Final 2007 Destination 2030 Regional Transportation Plan and of the 2009 Federal Transportation Improvement Program. The analysis of the proposed project's consistency with these existing plans is based upon the results of the Community Impact Assessment prepared in January 2009 and the Natural Environment Study prepared in March 2009 for this project.

##### Metropolitan Bakersfield General Plan

The Metropolitan Bakersfield General Plan land use map indicates that the area surrounding the proposed action is planned for residential and commercial uses. In the Circulation Element, streets designated as arterials with bike lanes are required to be six lanes, with a 110-foot right-of-way width, and a 96-foot pavement width. The Circulation Element also requires that overcrossings be designed to be compatible with bicycle travel.

##### Metropolitan Bakersfield Habitat Conservation Plan

The Metropolitan Bakersfield Habitat Conservation Plan is a mitigation program designed to offset the loss of habitat caused by an authorized activity. This document outlines the steps required for acquisition of habitat of threatened or endangered species within the plan's area of influence.

##### Regional Transportation Plan and Federal Transportation Improvement Program

The proposed project is included in the Kern Council of Governments Final 2007 Destination 2030 Regional Transportation Plan. The project is also included in Amendment 2 to the Federal Transportation Improvement Program, which is currently being processed; approval is expected in September 2009. This project has undergone a regional level air quality conformity analysis to ensure that this project contributes to the region's compliance with state and federal air quality regulations.

**Environmental Consequences**

Since the proposed project does not conflict with any of the local or regional plans, there are no environmental consequences.

**Avoidance, Minimization, and/or Mitigation Measures**

No mitigation is required.

**2.1.2 Growth**

**Affected Environment**

Refer to Section 2.1.1 Land Use for information on local plans and policies that control growth in the project area. Kern County’s population has grown at a moderate, steady pace in recent years. According to the United States Census Bureau, the county’s population was about 543,477 in 1990 and grew to 661,645 in 2000, an annual growth rate of almost 2 percent. In contrast, statewide population growth averaged 1.5 percent over the same period. In 2007, the California Department of Finance projected a population of 1,086,113 by 2020 for Kern County.

Much of Kern County’s recent growth has occurred in Bakersfield. The city’s population increased from 174,820 in 1990 to 247,057 in 2000, an average annual growth rate of 6 percent. Like the countywide growth rate, Bakersfield’s average annual growth rate is expected to increase between 2000 and 2020. As shown in Table 2.1, if the population grows at the historically supportable rate of 6 percent during the coming decade, Bakersfield will be home to 795,323 people by 2020.

**Table 2.1 Historic, Existing, and Projected Population Growth in California, Kern County and Bakersfield**

Area of Concern	1990	2000	2010	2020	Average Annual Growth Rate 1990 - 2020
<b>California</b>	29,760,021	33,871,648	39,958,000	45,449,000	1.4%
<b>Kern County</b>	543,477	661,645	871,728	1,086,113	2.3%
<b>Bakersfield</b>	174,820	247,057	444,104	795,323	6.0%

Source: United States Census Website

Growth patterns are affected by a range of economic forces from local to national in scope. Ultimately, population growth and economic development in a specific area is controlled, to some extent, by local and county governments through zoning, land use plans and policies, and decisions regarding development applications.

### ***Environmental Consequences***

The urban development boundaries in Bakersfield’s general plan are linked to population growth projections and development levels in the city and are anticipated to provide adequate quantities of land for development through 2020.

The proposed project conforms to the circulation element of the city and county general plans. The project does not open any new areas to development by removing barriers to access. The proposed project would not encourage unplanned development in the area or shift growth southward along the State Route 99 corridor. Planned development of vacant and agricultural parcels along State Route 99 will likely occur within the Bakersfield urban development boundaries. The proposed project is designed to accommodate growth and circulation based on local plans and growth projections. The project would not induce unplanned development and is consistent with local and regional land use and transportation planning.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No impacts are expected; therefore, no mitigation is required.

## **2.1.3 Community Impacts**

### **2.1.3.1 Community Character and Cohesion**

#### ***Affected Environment***

This section discusses impacts to the community caused by the proposed project. The analysis is based upon the results of the Community Impact Assessment prepared in January 2009 for this project.

Community cohesion is the degree to which residents have a “sense of belonging” to their neighborhood, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually because of continued association over time. The project study area is located in a mostly rural part of Bakersfield. However, both residential and commercial development is changing the character of the area. The east side of State Route 99 is vacant land that is ultimately planned for commercial uses. The northwest quadrant consists of commercial uses, with single-family residential further north and west. In the southwest quadrant, development of single-family homes is planned for the future. Because of the lack of existing development in the project area, community cohesion is considered to be low.

### ***Schools***

There are four schools located within the study area: Ollivier Middle School, the Horizon Elementary School, the Golden Valley High School, and the Stonecreek Junior High School. All the schools are a mile or a little less from the project location.

### ***Senior Public Services***

There is an aging and adult services center located at 1751 McKee Road. The Greenfield Senior Center provides meals and other activities for seniors in the community.

### ***Park and Recreational Facilities***

The only park located within the study area is Kern Delta Park, which is about a half mile from the proposed project interchange. Two other parks are located just outside of the study area: Greenfield Park, a mile and a quarter away and Stonecreek Park, roughly a mile and a half from the site.

### ***Places of Worship***

Several places of worship located within the study area, New Life in Christ Church, a Kingdom Hall of Jehovah's Witnesses, the Guru Nanak Mission, and the Liberty Christian Center. The closest places of worship are about three-quarters of a mile from the proposed project site. The Korean Methodist Church is planned for construction on a site just a bit less than a mile from the project location in the southwest quadrant.

### ***Cemeteries***

There is one cemetery located within the study area, Greenlawn Mortuary and Cemetery. The facility is located a bit under a mile from the project location.

None of these community services would be substantially affected by the proposed project.

### ***Environmental Consequences***

Once construction is complete, the proposed project would not change the character of the existing residential communities within the project area and its vicinity. The proposed project would not cause any permanent roadway closures. The proposed project would not subdivide any established communities either locally or regionally. Thus, the proposed project would not create a barrier to interaction between parts of a community. No impact to community character and cohesion would occur. The proposed project would add sidewalks and shoulders on both the north and south

sides of Hosking Avenue, providing for better connectivity for pedestrians and bicyclists.

**Avoidance, Minimization, and/or Mitigation Measures**

No impacts are expected; therefore, no mitigation is required.

**2.1.3.2 Relocations and Real Property Acquisition**

**Affected Environment**

The analysis of potential project-related relocations of either residents or businesses is based upon the results of the Relocation Impact Memorandum prepared in January 2009 for this project.

The project site is situated in a mostly rural area of Bakersfield. Existing land uses within the immediate vicinity are comprised of residential and commercial uses and vacant land. The land on the east side of State Route 99 is vacant and planned for eventual commercial uses. The northwest quadrant consists of commercial uses, with single-family residential further north and west. In the southwest quadrant, development of single-family homes is planned for the future.

**Environmental Consequences**

*Acquisitions*

The proposed project would require the full acquisition of four properties and the partial acquisition of five properties. Table 2.2 describes the potential displacements. Figure 2-1 displays the proposed project acquisitions. The four properties required to have full acquisition are nonresidential and consists of commercial properties totaling approximately 23.15 acres of land. The five partial acquisitions are properties consisting of commercial, vacant, and in-progress residential development properties.

**Table 2.2 Potential Displacements**

Type of Land Use	Number of Displacements	Full/Partial Acquisition
Commercial	4	Full
Commercial	2	Partial
In-Progress Residential	1	Partial
Vacant	2	Partial

## **Sales and Property Tax**

### Property Tax

The proposed project would require a permanent acquisition of approximately 23 acres of privately owned land, resulting in the removal of that area from the City of Bakersfield's property tax base. The four parcels that make up that acreage pay property taxes totaling about \$31,000 annually. The City of Bakersfield 2007 property tax revenue was approximately \$62.3 million. The property taxes collected on the affected parcels are less than one percent of the total property tax revenues collected for the City of Bakersfield. This reduction in property taxes is considered negligible.

### Sales Tax

The proposed project would affect retail sales from The Trailer Mart if The Trailer Mart were to move outside of the City of Bakersfield limits. It is unknown at this time if The Trailer Mart would move outside of the city limits. If The Trailer Mart does move outside of the city limits, the loss of this one retailer would be considered negligible to the overall sales tax collected by the City of Bakersfield.

## **Avoidance, Minimization, and/or Mitigation Measures**

The affected property owners/businesses would be able to find suitable replacement sites in the area. Adequate replacement properties are available both in the general vicinity and in immediate proximity to the proposed project.

Any person (individual, family, corporation, partnership, or association) who moves from real property or moves personal property from real property because of the acquisition of the real property, or is required to relocate as a result of a written notice from the California Department of Transportation that the real property is required for a transportation project, is eligible for relocation assistance, including last resort housing benefits. Property owners would be compensated with fair market value for their property based on its identified highest and best use. All benefits and services would be provided equitably to affected parties without regard to race, color, religion, or age, national origins, or disability as specified under Title VI of the Civil Rights Act of 1964. All activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.



### **2.1.3.3 Environmental Justice**

#### ***Affected Environment***

To comply with Executive Order 12898, United States Census demographic data was analyzed for the project area. The environmental justice assessment focused on census tracts that surround the project area. Income and ethnicity variables for the combined census tracts were compared to the city of Bakersfield and Kern County income and ethnic composition to determine whether the census tracts had a relatively large low-income or minority population. The project area contains portions of the following two tracts: 32.01 and 32.02. The data for these census tracts were used to analyze the project area for environmental justice concerns.

Most of the project area is zoned either commercial or residential. Single-family homes are located in the northwest quadrant of the project area.

According to the United States Census, the median household income in the project area is \$47,926; the median household income in Bakersfield is \$45,556; and the median household income for Kern County is \$39,403. The median household income is above the Department of Health and Human Services poverty threshold of \$16,700 for a family of four.

The Census reports the racial composition of the project area is 45 percent White, 42 percent Hispanic or Latino, 6 percent Asian, and 5 percent Black or African American. The racial composition of Bakersfield is 51 percent White, 32 percent Hispanic or Latino, 4 percent Asian, and 9 percent Black or African American. Kern County's racial composition is 49 percent White, 38 percent Hispanic or Latino, 3 percent Asian, and 6 percent Black or African American. Table 2.3 shows the ethnicity of the populations of the project area, Bakersfield, and Kern County.

No minority or low-income populations have been identified that would be adversely affected by the proposed project as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.

**Table 2.3 Racial Composition Data**

Race Category	Project Area*		City of Bakersfield		County of Kern	
	Number	%	Number	%	Number	%
Total Population	13,457	100%	247,057	100%	661,645	100%
White	6,019	45%	126,183	51%	327,190	49%
Black or African American	599	5%	21,987	9%	37,845	6%
American Indian and Alaska Native	118	1%	2,053	1%	5,885	1%
Asian	754	6%	10,239	4%	21,177	3%
Native Hawaiian and Other Pacific Islander	8	0%	188	0%	728	0%
Two or More Races	258	2%	5902	2%	13,795	2%
Hispanic or Latino (of any race)	5,685	42%	80,170	32%	254,036	38%

Source: U.S. Census, 2000

\*Data are provided at census tract-level for study area (Census Tracts 32.01 and 32.02).

### ***Environmental Consequences***

Beneficial and adverse affects have been identified for the project. The beneficial effects resulting from this project would affect the entire population within the project area. These beneficial effects are:

- Improving operation of the transportation system in the area
- Relieving traffic congestion on surface streets and reducing idling time for vehicles

Adverse effects from this project including the following:

- Short-term construction impacts (noise and air quality)
- Elevated noise levels from projected future traffic increases

Short-term construction impacts on air quality and from elevated noise levels would occur throughout the project area. Although sound levels are expected to increase, existing soundwalls are sufficient. See Section 2.2.5 Noise and Vibration for more information.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No mitigation is required.

## **2.1.4 Utilities/Emergency Services**

### ***Affected Environment***

The analysis of potential effects on utilities and emergency services resulting from the proposed project is based upon the results of the Community Impact Assessment prepared in January 2009 for this project.

#### *Utilities*

The City of Bakersfield Wastewater Division provides wastewater collection to a portion of the study area within the city. The southern portion of the study area, on the west side of State Route 99, is outside the Bakersfield wastewater treatment service area.

The study area and larger city and county are within the service area of Pacific Gas & Electric. Pacific Gas & Electric does not have any generating plants in Bakersfield. Natural gas for the study area and all of Kern County is provided by the Southern California Gas Company.

The City of Bakersfield Water Resources Division provides water service to the study area. Water is purchased from the California Water Service Company, a privately held public utility.

#### *Emergency Services*

The City of Bakersfield Police Department provides protection for the study area. The closest police station is about three miles north of the project site, at 3945 Hughes Lane. Bakersfield's Fire Department provides fire protection services for the study area. The closest city fire station is less than 2 miles to the north of the study area, at 4900 Poppyseed Street. Kern County has a fire station about a mile and a half southeast of the project area, at 312 Taft Highway (State Route 119).

### ***Environmental Consequences***

The proposed project would not increase the need for utility facilities. No new power plants, water treatment systems, or natural gas lines would be required as a result of the proposed project. No substantial impacts to existing utilities are expected.

The proposed project would not increase the demand for fire protection services. The proposed project would not generate a need for new fire stations in the area or cause any significant impacts to existing fire protection services. Temporary and occasional

roadway obstructions might occur due to construction equipment operation and movement.

The proposed project would allow adequate circulation for vehicles and police patrols. It is not anticipated that the proposed project would result in the need for new police stations in the area. Temporary and occasional roadway obstructions might occur due to construction equipment operation and movement.

Hosking Avenue would be closed during construction. The closure could create temporary construction impacts affecting fire protection agencies, police agencies, and emergency services. Detour routes would be described in the Traffic Management Plan. Completion of the proposed project would enhance emergency access by reducing congestion at intersections within the study area. Impacts to utilities and emergency services would not be considered substantial.

***Avoidance, Minimization, and/or Mitigation Measures***

Hosking Avenue will be closed during construction. Detour routes would be described in the Traffic Management Plan. The City of Bakersfield and Caltrans would coordinate with the fire and police departments to ensure they were aware of road closings and detour routes. No mitigation is required.

**2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities**

***Affected Environment***

The analysis is based on the results of the traffic study conducted for the project in June 2009.

The limits on State Route 99 study area run from Panama Lane to State Route 119 and include the intersections, both those controlled by signal lights and those controlled by stop signs, immediately east and west of State Route 99. There are seven intersections controlled by signal lights, and nine stop sign-controlled intersections within the study area. The intersections with traffic lights are located at:

- Panama Lane and Wible Road
- Panama Lane and State Route 99 southbound off-ramp and on-ramp
- Panama Lane and State Route 99 northbound off-ramp and on-ramp
- Panama Lane and Colony Street
- Panama Lane and South H Street

- State Route 119 and State Route 99 southbound
- State Route 119 and State Route 99 northbound

The stop sign-controlled intersections are:

- Wible Road and Berkshire Road
- Wible Road and Hosking Avenue
- Wible Road and McKee Road
- Wible Road and State Route 119
- State Route 119 and Hughes Lane
- South H Street and Berkshire Road
- South H Street and Hosking Avenue
- South H Street and McKee Road
- South H Street and northbound State Route 99 off-ramp

Table 2.4 shows the existing traffic flow conditions for the ramps, while Table 2.5 shows the existing traffic flow conditions at the intersections (both are as of 2007). The southbound Panama Lane off-ramp and the State Route 119 and Wible Road intersection both operate at unacceptable levels of service during the afternoon peak hours (between 4 and 5 p.m.).

**Table 2.4 Existing Ramp Level of Service Data**

Freeway Segment	Existing Conditions	
	Morning Peak	Afternoon Peak
	Level of Service	Level of Service
<b>Northbound Direction</b>		
State Route 119 off-ramp	B	C
State Route 119 on-ramp (loop)	B	B
State Route 119 on-ramp (direct)	B	C
Panama Lane off-ramp	B	C
Panama Lane on-ramp (loop)	C	C
Panama Lane on-ramp (direct)	C	C
<b>Southbound Direction</b>		
Panama Lane off-ramp	C	D
Panama Lane on-ramp (loop)	B	B
Panama Lane on-ramp (direct)	B	C
State Route 119 off-ramp	C	C
State Route 119 on-ramp (loop)	B	B
State Route 119 on-ramp (direct)	B	B

Source: Parsons, 2008

**Table 2.5 Existing Intersection Traffic Flow Data**

Intersection	Existing Conditions			
	Morning Peak		Afternoon Peak	
	LOS	Delay (seconds)	LOS	Delay (seconds)
Panama Lane and Wible Road	C	23.3	C	25.1
Panama Lane and State Route 99 southbound off-/on-ramps	B	14.8	B	19.9
Panama Lane and State Route 99 northbound off-/on-ramps	B	12.5	B	10.6
Panama Lane and Colony Street	B	17.8	B	18.0
Panama Lane and H Street	C	25.4	C	25.7
Berkshire Road and Wible Road	C	15.9	B	14.3
Berkshire Road and H Street	A	9.4	B	11.1
Hosking Avenue and Wible Road	A	9.8	B	14.3
Hosking Avenue and H Street	A	8.6	B	11.4
McKee Road and Wible Road	A	8.1	A	9.0
McKee Road and H Street	A	8.3	A	9.2
State Route 119 and Wible Road	C	19.4	F	63.6
State Route 119 and Hughes Street	B	14.7	C	17.9
State Route 119 and State Route 99 southbound off-ramp/Champagnoni Street	C	24.8	C	34.5
State Route 119 and H Street	C	26.7	C	20.2
H Street and State Route 99 northbound off-ramp	B	11.8	A	9.5

Source: Parsons, 2008

### ***Environmental Consequences***

Table 2.6 summarizes the results of the traffic analysis of the performance of the ramps in the year 2035 for the No-Build and Build Alternatives. All ramps within the traffic study area would operate at a level of service C or better except for the northbound Hosking Avenue off-ramp and the southbound State Route 119 off-ramp. The northbound Hosking Avenue off-ramp (constructed as a part of the Build Alternative) would operate at level of service D for both the morning and afternoon peak hours. The southbound State Route 119 off-ramp would operate at a level of service D during the afternoon peak hours. These ramps have been designed to provide the optimum level of service for the entire traffic study area. Trying to improve the levels of service at these ramp locations would result in reduced levels of service at other ramp locations within the traffic study area.

Table 2.7 summarizes the results of the intersections in the year 2035 for the No-Build and Build Alternatives. The intersections of Panama Lane with both Wible Road, and with H Street, would operate at a level of service D during the afternoon peak hours. These intersections have been designed to provide the optimum level of service for the entire traffic study area. Trying to improve the levels of service at

these intersections would result in reduced levels of service at other intersection locations within the traffic study area. All other intersections within the traffic study area would operate at a level of service C or better.

Improving the level of service at 16 of the 18 ramps and 17 of the 19 intersections within the traffic study area would benefit the operations of the roadways by relieving congestion.

No designated bike paths/routes would be affected by the project; however, the ramp intersections would provide curb ramps and crosswalks controlled by signal lights for pedestrians to use and would be designed to accommodate bicycle traffic on both sides as well. Six-foot-wide sidewalks are proposed on both sides of Hosking Avenue; five-foot-wide striped shoulders are proposed on the overcrossing. These features would improve flow for traffic, pedestrians and bicyclists.

Providing another access point to State Route 99 would benefit the surface streets by relieving congestion.

**Table 2.6 No-Build and Build Ramp Level of Service Data for the Year 2035**

Freeway Segment	No-Build Alternative		Build Alternative	
	Morning Peak	Afternoon Peak	Morning Peak	Afternoon Peak
	LOS	LOS	LOS	LOS
<b>Northbound Direction</b>				
State Route 119 off-ramp	C	C	B	C
State Route 119 on-ramp (loop)	B	B	B	B
State Route 119 on-ramp (direct)	B	B	B	B
Panama Lane off-ramp	C	D	D	D
Panama Lane on-ramp (loop)	C	C	C	C
Panama Lane on-ramp (direct)	C	B	C	B
Hosking Avenue off-ramp	---	---	B	C
Hosking Avenue on-ramp (loop)	---	---	B	B
Hosking Avenue on-ramp (direct)	---	---	B	B
<b>Southbound Direction</b>				
Panama Lane off-ramp	D	F	D	E
Panama Lane on-ramp (loop)	B	B	B	C
Panama Lane on-ramp (direct)	B	B	B	B
Hosking Avenue off-ramp	---	---	B	C
Hosking Avenue on-ramp (loop)	---	---	B	B
Hosking Avenue on-ramp (direct)	---	---	B	B
State Route 119 off-ramp	C	D	C	D
State Route 119 on-ramp (loop)	B	B	B	B
State Route 119 on-ramp (direct)	B	B	B	B

Source: Parsons, 2008

**Table 2.7 No-Build and Build Intersection Traffic Flow Data for the Year 2035**

Intersections	No-Build Alternative				Build Alternative			
	Morning Peak		Afternoon Peak		Morning Peak		Afternoon Peak	
	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)
Panama Lane and Wible Road	F	109.0	E	69.7	C	28.0	D	38.4
Panama Lane and State Route 99 southbound off/on-ramps	E	45.2	F	85.9	B	13.8	C	20.3
Panama Lane and State Route 99 northbound off/on-ramps	B	17.6	B	18.1	B	18.1	B	17.8
Panama Lane and Colony Street	B	18.3	C	20.4	B	19.2	B	18.4
Panama Lane and H Street	E	79.6	F	130.6	C	28.9	D	38.4
Berkshire Road and Wible Road	F	127.3	F	86.4	C	29.4	C	28.1
Berkshire Road and H Street	F	65.9	F	235.1	B	12.7	C	23.6
Hosking Avenue and Wible Road	D	33.1	E	41.6	C	29.8	C	30.2
Hosking Avenue and Hughes Road	B	18.3	B	14.3	B	14.5	B	11.3
Hosking Avenue and State Route 99 southbound ramps	---	---	---	---	B	15.6	B	18.5
Hosking Avenue and H Street	E	41.2	F	95.0	C	30.0	C	29.3
McKee Road and Wible Road	B	10.5	B	12.8	B	11.2	B	14.6
McKee Road and Hughes Road	A	9.0	A	9.8	A	9.4	B	10.7
McKee Road and H Street	B	11.2	C	17.9	C	16.3	C	20.7
State Route 119 and Wible Road	F	156.5	F	2449.3	C	25.6	C	26.5
State Route 119 and Hughes Street	F	241.6	F	2154.4	B	15.8	B	16.8
State Route 119 and State Route 99 southbound off-ramp/Champagnoni Street	C	23.9	C	29.0	C	24.9	C	29.9
State Route 119 and H Street	C	34.8	D	43.1	C	28.9	C	30.4
H Street and State Route 99 northbound off-ramp	C	19.3	F	192.8	B	14.3	B	16.8

Source: Parsons, 2008

### **Avoidance, Minimization, and/or Mitigation Measures**

Hosking Avenue would be closed during construction. Detour routes would be described in the Traffic Management Plan. The City of Bakersfield and Caltrans would coordinate with the fire and police departments to ensure they were aware of road closings and detour routes.

Furthermore, the City of Bakersfield would provide transit options for pedestrians during the closure of the east-west access to Hosking Avenue over State Route 99.

During construction, a traffic management plan would help reduce traffic delays, congestion and accidents. Standard Caltrans construction practices include providing information on roadway conditions, using portable changeable message signs, establishing lane and road closures, setting out advance warning signs, designing alternate routes, identifying reverse and alternate traffic control, and a developing a traffic contingency plan for unforeseen circumstances and emergencies. The Caltrans Public Affairs Office would keep the local media informed of construction progress and information about delays, closures, and major changes in traffic patterns using information provided by the resident engineer.

Under the California Vehicle Code (Sec. 21200), bike riders have the same rights as operators of motor vehicles. They cannot be excluded from traveling on a roadway during construction unless motor vehicles are also prohibited from traveling those same roadways. “Share The Road” signs within the construction area would alert motorists of the potential presence of bicyclists on the roadway.

A Construction Zone Enhanced Enforcement Program may be appropriate during portions of this project. The program involves the continuous presence of the California Highway Patrol in construction zones to serve as a reminder to motorists to slow down and use caution when traveling through work areas. The Caltrans Construction Division would determine if the program is warranted for this project.

Improvements such as sidewalks and curb ramps would be constructed to conform to the requirements of the Americans with Disabilities Act.

#### **2.1.6 Visual/Aesthetics** ***Affected Environment***

A Visual Impact Assessment was prepared in January 2009. This analysis was designed to determine the proposed project’s impacts on views from and adjacent to State Route 99 and Hosking Avenue, and generally followed the guidelines from the publication “Visual Impact Assessment for Highway Projects,” Federal Highway Administration.

The project area is located in the middle of the San Joaquin Valley. The landform is mostly flat, with the Sierra Nevada Mountains visible to the east.

Throughout most of the project area, the primary built development is State Route 99, Hosking Avenue, and soundwalls for residential developments in the northwest and southwest quadrants of the project location. Mature eucalyptus trees are visible along both sides of State Route 99. On the east side of State Route 99 are agricultural fields. Beyond the fields are residential developments.

### **Visual Assessment Methodology**

The existing landscape of the proposed project is evaluated from each viewpoint and an inventory of onsite visual resources is developed. These visual resources are rated for their aesthetic quality and for their contribution to the existing character of the landscape and region. The existing visual resource inventory is then compared with the proposed project features, and any potential conflicts or impacts to existing visual resources are identified.

#### *Observer Viewpoints*

- Observer Viewpoint 1 – looking north from the Hosking Avenue overcrossing on the west side of State Route 99
- Observer Viewpoint 2 – looking north from the Hosking Avenue overcrossing on the east side of State Route 99
- Observer Viewpoint 3 – looking south from the Hosking Avenue overcrossing on the west side of State Route 99
- Observer Viewpoint 4 – looking south from the Hosking Avenue overcrossing on the east side of State Route 99

#### *Visual Quality Evaluation Ratings*

A Visual Quality Evaluation was conducted to assess the magnitude of the potential visual changes caused by the proposed project. The Visual Quality Evaluation compares the visual quality of the existing to that of the proposed conditions.

Field reviews were conducted and a rating of low, moderate, moderately high, and high was assigned for the existing quality from each viewpoint. The project plans as proposed were studied and theoretically applied to the existing landscape conditions. Ratings of low, moderate, and high were then assigned to each of these “proposed” views. The difference, if any, between the existing and proposed conditions quantified the change that may occur as a result of the

proposed project. The differences were compared to the expected sensitivities of potential view groups to determine a level of visual impact.

This system described above is based on evaluation criteria using three primary components: vividness, intactness, and unity. These three criteria are defined by the Federal Highway Administration and described as follows:

- **Vividness** is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
- **Unity** is 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 landscape.

#### *Viewsheds*

To understand the visual effects of this proposed interchange project, the project area's landscape is divided into viewsheds. A viewshed may be thought of as an outdoor room, perceived as a complete visual environment with certain visual characteristics that distinguish one viewshed from the next. For the purpose of this analysis, four viewsheds have been defined within the project limits.

#### *Northwest Quadrant Viewshed*

This area of the project is located in the northwest quadrant of State Route 99 and Hosking Avenue. The topography is generally flat in this area, and the land uses are mostly commercial and residential. Most of the development is located on the west side of State Route 99, while the east side offers mostly expansive views of open agricultural lands, residential properties, and the Sierra Nevada mountain range.

#### *Northeast Quadrant Viewshed*

This area of the project is located in the northeast quadrant of State Route 99 and Hosking Avenue. The topography is generally flat in this area, and the land uses are mostly agricultural and residential with the Sierra Nevada mountain range to the east.

#### *Southwest Quadrant Viewshed*

This area of the project is located in the southwest quadrant of State Route 99 and Hosking Avenue. The topography is generally flat in this area, with land uses that are primarily residential

development with agricultural further to the south. Most of the development is located on the west side of State Route 99, while the east side offers mostly expansive views of open agricultural lands, residential properties, and the Sierra Nevada mountain range.

#### *Southeast Quadrant Viewshed*

This area of the project is located in the southeast quadrant of State Route 99 and Hosking Avenue. The topography is generally flat in this area, and the land uses are mostly agricultural and residential with the Sierra Nevada mountain range to the east.

#### **Viewer Groups**

Viewer groups were considered for the evaluation of viewer response, those with views from the road and those with views of the road:

#### *Viewers from the Road - Freeway Travelers*

For viewers traveling State Route 99 through the project area, consistent views are common and include the flat valley floor and the Sierra Nevada Mountains in the background. The viewers along this segment of State Route 99 are almost exclusively in motor vehicles and include local residents, recreational travelers, tourists, work and educational commuters, and commercial vehicle operators.

The awareness of visual resources by these highway users is expected to vary with their specific activity. Tourists, which comprise a portion of viewers on State Route 99, generally have a high awareness of the visual resources around them, yet are anticipated to be less sensitive to specific changes in that environment. Drivers traveling at normal freeway speeds usually focus attention mostly on the road ahead. Passengers have a heightened awareness of a wide range of views. Freeway travelers that experience congested traffic conditions will tend to focus views on the freeway and overcrossing. Local residents are the most sensitive to aesthetic issues due to their familiarity, as well as their personal investment in the area.

#### *Viewers of the Road - Community Residents, Commercial Area Employees and Customers, and Local Street and Bikepath Users*

This viewer is made up of all those who can see the road project or any of its components from offsite locations. Hundreds of residents live near the Hosking Avenue/State Route 99 interchange. Some residents have had the interchange in their distant view for many years. Most views of the project are limited to the overcrossing. Many views are blocked by perimeter and soundwalls. Residents are likely to have a high concern about the project and its effects on views from their homes and neighborhoods.

The planned commercial development in the northeast quadrant of the project viewshed is expected to provide hundreds of viewers per day with limited and short duration midground views of the project. Commercial employees and patrons will likely have a moderate to low awareness of the project.

Thousands of local street users, particularly on H Street, have distant and short duration views of the project. Bicyclists using the regional bike path that runs along H Street have short duration distant views of the project. Local street users and bike path users are expected to have a low awareness of the project due to the distance of the view.

### ***Environmental Consequences***

The proposed project is expected to improve the visual quality of the project area from low and moderate to moderately high. New signs, landscaping and bridge aesthetic treatments would enhance the vividness of the project area to moderately high. The new ramps would improve the intactness of the area in the immediate vicinity of State Route 99 to moderate; the fallow land beyond the ramps would remain, however, planned future developments are expected. The ramps and landscaping treatments of the project would improve the unity of all four quadrants of the project area from low to high. The project would also improve the unity of the project area with existing interchanges north and south along State Route 99.

The proposed project is expected to have a beneficial visual effect on all viewer groups. Although the introduction of roadway facilities to the project area may be considered adverse, its proximity to similar facilities, the aesthetic enhancements included in the project, and the project's consistency with the Master Plan constitute a beneficial visual effect.

Refer to Figure 2 - 2 for a visual simulation of the northeast quadrant.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The proposed project includes aesthetic enhancements to the existing landscaping and inclusion of bridge aesthetics to the project. The visual quality in the project area is enhanced and improved through the proposed project, and therefore, no mitigation is required.

## Existing



## Simulation



**Figure 2-2 Visual Simulation of Northeast Quadrant of State Route 99 and Hosking Avenue**

*Hosking Avenue / State Route 99 Interchange – New Connection Project*

## **2.2 Physical Environment**

### **2.2.1 Water Quality and Storm Water Runoff**

#### ***Affected Environment***

The analysis is based on the results of the Water Resources and Water Quality Technical Report that was prepared in February 2009 for this project. The project site is located within the Kern River watershed. The Kern River drains an approximately 2,100-square mile area above Isabella Reservoir in the Sierra Nevada Mountains, 300 square miles of foothill land below the dam, and approximately 600 square miles of valley trough. Water runoff from the Sierra Nevada range flows from northeast to southwest and enters the San Joaquin Valley through Kern River Canyon. Within the valley the river channel is deeply entrenched in an alluvial fan that extends westward to the main valley floor.

The Kern River channel is controlled by levees to prevent flood flows from extending to the adjacent land. The Kern River had an unregulated flow until 1954 when the Isabella Dam and Reservoir were constructed by the U.S. Army Corps of Engineers. The primary purpose of the dam is flood control. The reservoir can hold approximately 570,000 acre-feet of water.

A major surface water feature in the project vicinity is the human-made Kern Island Canal (Central Branch), which runs north to south in the project vicinity along the east side of State Route 99. There is also a canal that runs parallel to State Route 99 on the west side of the highway.

Within the vicinity of the project, the drainage pattern is from the north to the south across the site. In terms of topography, the site is located in an area with a slope range of zero to five percent with a nearly constant slope of approximately seven feet per mile.

The project site is included on the Federal Emergency Management Agency's Flood Insurance Rate Map Community Panel Number 0600751275B. The site is located in Zone C, an area of minimal flooding.

#### ***Environmental Consequences***

The construction of a wider bridge across State Route 99, plus the associated ramps and construction staging areas that would be part of the proposed project would disturb the soil on about 32 acres.

Construction activities such as demolition, excavation, grading, and filling of soil cause short-term impacts on the area near the project site. The project would generate dust and concentrations of suspended solids, dissolved solids, and organic pollutant in storm water runoff that would be routed into the detention basins being constructed as part of the project. Construction site and highway storm water runoff would be routed to the four project detention basins. Potential short-term water quality impacts are anticipated to be minor.

Long-term water quality impacts can occur due to changes in storm water drainage. The primary pollutants in the storm water are anticipated to be sediments, petroleum distillates, and metals. These substances are washed off the roadways during storms and become runoff. Construction of the project is not anticipated to have significant long-term water quality impacts. No long-term impacts from construction of the expanded overcrossing and associated on- and off-ramps are expected. Construction activities from this project are not expected to affect groundwater recharge, discharge, flow conditions or groundwater quality. No groundwater impacts are expected from the project.

By incorporating proper and accepted engineering practices and best management practices, the proposed project is not expected to substantially affect water quality during or after project construction.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Although the proposed project is not expected to have a substantial adverse impact on water quality or floodplains, best management practices would be implemented. During construction, a Storm Water Pollution Prevention Plan would be designed and followed to identify the sources of sediment and other pollutants that affect the quality of storm water discharges. The plan would describe and ensure the implementation of best management practices to reduce or eliminate sediment and other pollutants in storm water as well as non-storm water discharges.

When disturbed acreage is one acre or more, Caltrans' National Pollutant Discharge Elimination System permit requires coordination with the regional water quality control board. Since this project would disturb more than one acre of soil, the following measures are required:

- Notification of Construction is to be submitted to the appropriate regional water quality control board at least 30 days before the start of construction.
- A Storm Water Pollution Prevention Plan is to be prepared before and implemented during construction to the satisfaction of the Caltrans resident engineer.

A Notice of Construction Completion is to be submitted to the regional water quality control board upon completion of the construction and stabilization of the site. A project would be considered complete when it meets the criteria of Caltrans' National Pollutant Discharge Elimination System permit for final stabilization.

## **2.2.2 Paleontology**

### ***Affected Environment***

A Paleontological Evaluation Report was prepared in January 2009. Geologic mapping was conducted at the proposed project site as a result of the Paleontological Evaluation Report, which indicated the project area sits above Holocene alluvial fan deposits formed by runoff from the surrounding mountains. These deposits consist of sand and silty sand, extend to a depth more than 80 feet below the ground, and would be encountered by project-related excavation for overcrossing abutments to depths of 19 to 20 feet below ground surface. Elsewhere in the San Joaquin Valley, the alluvial fan deposits include the late Pleistocene to Holocene Modesto Formation.

An archival search of the Natural History Museum of Los Angeles County Vertebrate Paleontology Department did not document any previously recorded fossil sites as occurring in the alluvial fan deposits in the project area or its immediate vicinity. However, the literature review and archival search at the University of California Museum of Paleontology documented a number of previously recorded fossil sites in the alluvial fan deposits elsewhere in the San Joaquin Valley. The closest documented site is on the Bakersfield Canal between the Kern River and Buena Vista Lake and might be from the alluvial fan deposits. Vertebrate fossils from the alluvial fan deposits have been found at depths as shallow as three to four feet below the present ground surface elsewhere in the San Joaquin Valley.

### ***Environmental Consequences***

The results of the paleontological literature review indicate that substantive subsurface excavation within the boundaries of the project's area of potential effect has the potential to expose significant nonrenewable paleontological resources. Vertebrate fossils from the alluvial fan deposits suggest there is a high potential for scientifically important fossil remains and previously unrecorded fossil sites to be encountered by earth-moving activities in the project area beginning at depths as shallow as three to four feet below the surface. Therefore, the potential for encountering previously unrecorded fossil sites and remains during the course of such activities is high.

Identifiable fossil remains recovered from the alluvial fan deposits in the project area would be particularly important if they represented a new or rare species; extend the known time or geographic range of a species; are from a species not previously found in that type of deposit; are from an age-diagnostic species; or comprise a skeletal element different from, or a specimen more complete than, those now available for its respective species. There is a potential for encountering land mammal remains representing species rarely if ever recorded from the alluvial fan deposits or the immediate project area vicinity. The recovery of remains representing environmentally sensitive species would be critical in paleoenvironmental and habitat reconstruction. Such remains would contribute to a more comprehensive documentation of the diversity of animal life that existed in and near the project area during the Rancholabrean North American Land Mammal Age and the late Pleistocene Epoch. Finally, land mammal remains also are scientifically important because such remains are comparatively rare in the fossil record.

Earth-moving activities associated with construction in the proposed project area might result in the disturbance or loss of paleontological resources, including unrecorded fossil sites and scientifically important fossil remains, associated fossil specimen data and corresponding geologic and geographic site data. Any loss of the resources mentioned would be considered substantial and would most likely occur at depths greater than 3 to 4 feet below the ground surface. Such impacts probably would not occur during excavation of the infiltration basin, which is not expected to be more than 5 feet below the current ground surface, but might occur during excavation for overcrossing abutments, which would be 19 to 20 feet deep. However, with appropriate mitigation, such earth-moving activities might result in beneficial effects, including the exposure of fossil remains that would never have been available for recovery without the project.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Project construction is anticipated to extend three to four feet below the earth's surface. Therefore, a qualified vertebrate paleontologist is required to develop a monitoring program to mitigate the impacts to nonrenewable paleontological resources.

A Paleontological Mitigation Plan that is in compliance with Caltrans paleontological mitigation guidelines would be developed by a qualified principal paleontologist before the start of construction. The Paleontological Mitigation Plan would not be implemented until excavation for overcrossing abutments encounter previously undisturbed strata depths more than three to four feet below the present ground surface. Excavation of the overcrossing abutments would extend to depths of 19 to 20 feet, whereas excavation of the infiltration basin is not expected to exceed a depth greater than 5 feet and probably would not require monitoring. Earth-moving activities at

such shallow depths might have a potential for encountering remains old enough to be considered fossilized. Therefore, the Paleontological Mitigation Plan would be used earlier if fossilized remains are encountered at a shallower depth.

### **2.2.3 Hazardous Waste or Materials**

#### ***Affected Environment***

An Initial Site Assessment was performed for the project and was completed in August 2008. The following potential hazardous materials/waste concerns were identified:

- Aerially deposited lead is present in the soils along the shoulders of State Route 99.
- Structures, which would be acquired as part of the proposed project, may contain lead-based paints, asbestos-containing materials and materials or components which may contain mercury or polychlorinated biphenyls.

No additional recognized environmental conditions were observed.

One of the objectives of the soils investigation for heavy metals, lead-based paint, and asbestos-containing materials along State Route 99 between post miles 0.0 and 20.0 in Kern County was to evaluate the presence and concentrations of aerially deposited lead within the project area. The results of the investigation indicated whether aerially deposited lead in the soil exceeds the regulatory threshold outlined in Title 22, California Code of Regulations.

There is a potential, due to the age of the structures to be acquired as part of the proposed project, for asbestos-containing materials, lead-based paints, and components that may contain mercury or polychlorinated biphenyls to be present in these structures.

A survey of the Hosking Avenue overcrossing was conducted in 2006 to determine whether the structure contained asbestos-containing materials.

#### ***Environmental Consequences***

Aerially deposited lead/heavy metal studies have been conducted along State Route 99 for past construction projects, which include the proposed project area. These studies indicate that while lead is present in soils along the shoulder soils ranging from undetectable to 814 milligrams per kilogram, the levels of lead averaged 36.88 milligrams per kilogram, which is below regulatory action thresholds. Based on statistical analysis, if the soil is treated as a whole, it is unlikely that the waste soil would be considered a California hazardous waste. However, if the construction

work is staged in a manner that segregates the excavated soil, waste soil from the area of borings containing elevated lead concentrations may be considered a California hazardous waste.

Asbestos-containing materials studies have been conducted on the Hosking Avenue Overcrossing. Four samples were collected from the structure and analyzed for asbestos. Polarized light microscopy analysis did not reveal potentially crumbly or flaking asbestos-containing materials in the structure.

Older structures to be acquired as part of the proposed project might have asbestos-containing materials, lead-based paints, and components that may contain mercury or polychlorinated biphenyls. Asbestos, lead, mercury and polychlorinated biphenyls are a threat to human health. Further investigation would be required prior to the demolition of any structure to determine if any of these hazardous materials are present.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Prior to any excavation or soil disturbance within project boundaries, a project-specific Non-Standard Special Provision Lead Compliance Plan must be developed and implemented for earthwork as part of Caltrans non-standard special provisions.

The contractor would use proper health and safety measures to minimize the exposure of workers to potential asbestos-containing materials, lead-based paints, mercury or polychlorinated biphenyls from affected buildings and structures.

The demolition of water wells within the project limits must be in accordance with standards prepared by the Department of Water Resources (Bulletin 74-90) Title 23, California Code of Regulations and local regulatory standards.

## 2.2.4 Air Quality

### **Regulatory Setting**

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), lead (Pb), and sulfur dioxide (SO<sub>2</sub>).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as Kern County Association of Governments for Kern County and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, 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 monoxide and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are

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

The PM<sub>10</sub> and PM<sub>2.5</sub> hot spot analysis was presented to the Model Coordination Committee for Interagency Consultation as a Project of Air Quality Concern on February 18, 2009. The Federal Highway Administration concurred with the assumptions and analyses on March 24, 2009. The United State Environmental Protection Agency concurred with the assumptions and analyses on March 23, 2009.

### ***Affected Environment***

An Air Quality Technical Study was prepared for the proposed project in January 2009. Information related to air quality regulations and study methodology can be found in the technical report.

The proposed project is located in Bakersfield, in Kern County within the San Joaquin Valley Air Basin. Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the air basin represent approximately 16 percent of the state's geographic area. The basin is bordered by the Sierra Nevada Mountains on the east, the Pacific Coast Range on the west, the Tehachapi Mountains on the south, and is open to the north extending to the Sacramento Valley Air Basin.

Ambient air quality is affected by the climate, topography, and the type and amount of pollutants emitted. As described above, the San Joaquin Valley Air Pollution Control District is bordered by mountain ranges on the east, west, and south, and is open to the north. The mountains act as air-flow barriers, with the resulting stagnant conditions favoring the accumulation of emissions and pollutants. As a result, pollutant concentrations are higher in the southern and central portions of the Valley, including Kern County, where geography, emissions, and climate pose significant challenges to air quality progress. Wind patterns within the San Joaquin Valley Air Basin result from marine air that generally flows into the basin from the San Joaquin River delta.

Climate in the San Joaquin Valley is Mediterranean, with cool winters and dry warm summers. Precipitation is confined primarily to the winter months. The Kern County portion of the San

Joaquin Valley Air Basin had an average annual rainfall over a 40-year period of approximately 12 inches. During summer months, recorded data indicate that winds usually originate at the north end of the Valley and flow in a southerly direction through the Tehachapi Pass into the Mojave Air Basin. These prevailing winds, known as “up-valley winds”, originate with coastal breezes that enter the San Joaquin Valley through breaks in the coastal ranges, particularly through the Carquinez Straits in the San Francisco Bay Area and the Sacramento Valley Area; however, sources of air pollution, including stationary, mobile and area sources within the central and southern portions of the San Joaquin Valley, are considered to be a greater influence under most conditions. Peak ozone levels tend to be higher in the southernmost portion of the San Joaquin Valley, as the prevailing summer winds sweep precursors downwind of northern source areas.

### ***Environmental Consequences***

#### *Regional Air Quality Conformity*

The proposed project is fully funded and is in the Kern Council of Governments Final 2007 Destination 2030 Regional Transportation Plan, which was adopted by the Kern Council of Governments on May 17, 2007. The Federal Highway Administration and the Federal Transit Authority approved the air quality conformity of the Plan on June 29, 2007. The proposed project is included in Table 4.1 – Constrained Program of Projects; and in the Metropolitan Bakersfield major Highway Network Improvement Projects (2007-2010) of the Final 2007 Regional Transportation Plan. The project is also included in the Amendment 1, dated May 2008 of the Regional Transportation Implementation Plan, in the listing of Constrained Projects - Major Highway Improvements (2011 through 2015), with Project ID: KER08RTP009. The design concept and scope of the proposed project is consistent with the project description in the 2007 Regional Transportation Plan, the 2007 Regional Transportation Implementation Plan, and the assumptions in the Kern Council of Government’s regional emissions analysis. The project is also included in Amendment 2 to the Federal Transportation Improvement Program, which is currently being processed; approval is expected in September 2009

#### *Project Level Conformity*

The proposed project is located within San Joaquin Valley Air Basin. The San Joaquin Valley Air Basin is currently classified as a nonattainment area based on National Ambient Air Quality Standards for 8-hour ozone, and fine particulates. Nonattainment designations are as follows: nonattainment for fine particulates, and serious nonattainment for 8-hour ozone. Refer to Table 2.8 for Federal and State Ambient Air Quality Standards.

### Ozone

The project is located in an ozone nonattainment area. Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone is a regional pollutant and that makes site or project specific analysis not possible at this time using current tools. The United States Environmental Protection Agency has not provided Hot Spot analysis guidelines and approved modeling tools; therefore, a Hot Spot analysis for ozone cannot be performed at this time. However, ozone was addressed in the regional air quality conformity analysis reported above. The project was found to conform to air quality planning goals in the State Implementation Plan.

### Carbon Monoxide Hot-Spot Analysis

The project is located in an attainment/maintenance area for the federal carbon monoxide standard. As part of the air quality analysis performed for this project, a screening exercise following the carbon monoxide hot-spot analysis protocol was performed to determine whether the project requires a qualitative or quantitative analysis or that none would be necessary. Based on the procedural analysis, the project would not have a significant impact upon 1-hour or 8-hour local carbon monoxide concentrations due to mobile source emissions.

### Particulate Matter Hot-Spot Analysis

Particles less than 10 micrometers (PM<sub>10</sub>) pose a potential health concern because these small particles can be inhaled and accumulate in the respiratory system. Particles less than 2.5 micrometers (PM<sub>2.5</sub>) are thought to be the greatest health risk because of their smaller size.

This project is in a federal PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment area. A qualitative hot-spot analysis was required under the Environmental Protection Agency's Transportation Conformity Rule for projects of air quality concern, as described in the Environmental Protection Agency's Final Rule of March 10, 2006. A local hot-spot analysis for PM<sub>10</sub> and PM<sub>2.5</sub> was required.

A qualitative project-level hot-spot assessment was conducted to assess whether the project would cause or contribute to any new localized inhalable particulate matter or fine particulate matter violations, or increase the frequency or severity of any existing violations, or delay timely attainment of the inhalable particulate matter or fine particulate matter national ambient air quality standards. It was determined that the proposed project would improve the operations of the intersections, which would result in higher average vehicle speeds in the project area. Accordingly, it is reasonable to conclude that particulate matter emissions associated with the

**Table 2.8 Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standard	State Attainment Status	Federal Standard	Federal Attainment Status	Health and Atmospheric Effects	Typical Sources
Ozone (O <sub>3</sub> )	1 hour 8 hour	0.09 ppm 0.070 ppm	Severe Nonattainment	--- 0.075 ppm	--- Serious	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 (ROG) and nitrogen oxides (NO <sub>x</sub> ) 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 ROG may also contribute.
Carbon Monoxide (CO)	8 hour 1 hour	9.0 ppm 20 ppm	Attainment	9 ppm 35 ppm	Attainment/ Maintenance	Asphyxiant. Carbon monoxide 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.
Respirable Particulate Matter (PM <sub>10</sub> )	24 hour Annual Average	50 µg/m <sup>3</sup> 20 µg/m <sup>3</sup>	Nonattainment	150 µg/m <sup>3</sup> ---	Nonattainment	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 PM <sub>10</sub> .	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; and unpaved road dust and re-entrained paved road dust; natural sources (windblown dust, ocean spray).

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Fine Particulate Matter (PM <sub>2.5</sub> )	24 hour Annual Average	--- 12 µg/m <sup>3</sup>	Nonattainment	35 µg/m <sup>3</sup> 15 µg/m <sup>3</sup>	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 PM <sub>2.5</sub> size range. Many aerosol and solid compounds are part of PM <sub>2.5</sub> .	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 <sub>x</sub> , sulfur oxides (SO <sub>x</sub> ), ammonia, and ROG.
Nitrogen Oxide (NO <sub>2</sub> )	Annual Average 1 hour	0.030 ppm 0.18 ppm	Attainment	0.053 ppm ---	Attainment/ Unclassified	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur Dioxide (SO <sub>2</sub> )	Annual Average 24 hour 3 hour 1 hour	--- 0.04 ppm --- 0.25 ppm	Attainment	0.030 ppm 0.14 ppm 0.5 ppm ---	Attainment	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing.
Lead (Pb)	30-day Average Calendar Quarter	1.5 µg/m <sup>3</sup> ---	Attainment	--- 1.5 µg/m <sup>3</sup>	Attainment	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.

proposed action would not cause substantial adverse effects to the existing air quality. A qualitative PM<sub>10</sub> and PM<sub>2.5</sub> analysis was conducted in January 2009. The project was submitted for Interagency Consultation as a “Project of Air Quality Concern.” Completion of the interagency consultation occurred on March 30, 2009. Concurrence was obtained from the United States Environmental Protection Agency on March 23, 2009. The Federal Highway Administration concurred on March 24, 2009.

The San Joaquin Valley Air Pollution Control District and California Air Resources Board maintain a network of air quality monitoring stations located throughout the San Joaquin Valley Air Basin. The nearest and most representative air monitoring station to the project site is the Bakersfield-California Avenue Station, which is located at 5558 California Avenue, approximately 5.5 miles northwest of the project site. All criteria pollutants are monitored at this station (specifically ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, inhalable particulate matter, and fine particulate matter).

Inhalable Particulate Matter (PM<sub>10</sub>) – The maximum recorded 24-hour concentrations during the period of 2004 to 2007 was 153 µg/m<sup>3</sup>, recorded in 2006. The maximum annual average concentration was 49 µg/m<sup>3</sup>, also recorded in 2006. During this period, the California 24-hour standard of 50 µg/m<sup>3</sup> was exceeded between 82 and 129 times per year, with highest number of times the standard was exceeded recorded in 2007.

Fine Particulate Matter (PM<sub>2.5</sub>) – The maximum 24-hour concentrations recorded during the 2004 to 2007 period was 86 µg/m<sup>3</sup>, recorded in 2005 and 2007. During this period, the California 24-hour standard of 65 µg/m<sup>3</sup> was exceeded between 3 and 14 times per year with the highest number of times the standard was exceeded recorded in 2007.

The State Implementation Plan for PM<sub>2.5</sub> and the San Joaquin Valley Air Pollution Control District continue to implement regulations and requirements that should result in a decrease of this pollutant over time. Diesel vehicles are a significant source of this pollutant. Measures including cleaner-burning diesel, diesel retrofit and replacement programs, and regulations sponsored by the San Joaquin Valley Air Pollution Control District and the state Air Resources Board should continue to decrease the amount of PM<sub>2.5</sub>.

#### Naturally Occurring Asbestos

According to the California Division of Mines and Geology, Kern County is not among areas listed as containing naturally occurring asbestos (Governor’s Office of Planning and Research, October 26, 2000). Naturally occurring asbestos areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic and serpentine rocks.

### Mobile Source Air Toxics

In addition to the criteria pollutants discussed above for which there are National Ambient Air Quality Standards, the United States Environmental Protection Agency also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (such as airplanes), area sources (such as dry cleaners) and stationary sources (such as factories or refineries). Mobile source air toxics are a subset of the 188 air toxics defined by the Clean Air Act. Mobile source air toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

Studies of human health risks are inconclusive; however, the Environmental Protection Agency has yet to establish air quality standards or guidelines for assessing the project level effects of mobile air toxics. Such limitations make the study of mobile air toxic concentrations, exposures, and health impacts difficult and uncertain, especially on a qualitative basis.

This Environmental Assessment includes a basic analysis of the likely impacts of this project from emission of mobile source air toxics. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this Environmental Assessment. Even though reliable methods do not exist to accurately estimate the health impacts of mobile air toxics at the project level, it is possible to qualitatively assess the levels of future emissions from mobile source air toxics under the project. Although a qualitative analysis cannot identify and measure health impacts from mobile source air toxics, it can give a basis for identifying and comparing the potential differences among mobile source air toxic emissions, if any, from the various alternatives.

The Federal Highway Administration has issued interim guidance on how mobile source air toxics should be addressed. The Federal Highway Administration has developed a tier approach for analyzing mobile source air toxics. Depending on the specific project circumstances, the Federal Highway Administration has identified three levels of analysis:

1. No analysis for exempt projects with no potential for meaningful mobile source air toxics effects.

2. Qualitative analysis for projects low potential mobile source air toxics effects.
3. Quantitative analysis to differentiate alternatives for projects with higher potential mobile source air toxics.

Using the Federal Highway Administration's tiered approach described in its interim guidance document, the proposed project would have low potential mobile source air toxic effects. A mobile source air toxics analysis was conducted for the project alternatives. The University of California - Davis-Caltrans Project-Level mobile source air toxic analysis spreadsheet tool was used to compare mobile source air toxic emissions for the local roadways with and without proposed project. The analysis was conducted for the project corridor along Hosking Avenue and State Route 99 segments within project limits.

A significant decrease in mobile source air toxic emissions can be expected for the proposed project from the base year (2007) levels through future year levels. This decrease is prevalent for all of the mobile source air toxics and is consistent with Environmental Protection Agency's study. The expected decrease is due directly to the improved pollution emission performance of a modernizing fleet of all diesel-fueled vehicles, and is a trend that is anticipated to continue into the future.

The current modeling tools do not provide a reliable method of predicting emissions to a receptor based on location relative to the freeway. The one certainty is that the more vehicle miles traveled in any given year, the more emissions. However, each year the total mobile source air toxics emitted per vehicle mile traveled is expected to decrease based on stronger regulations.

The Environmental Protection Agency projections indicate a continuing downward trend for the six primary mobile source air toxics. The study of mobile source air toxics, health effects, and modeling tools are currently in a state where accurate information is incomplete or unavailable. This is relevant to making an accurate prediction of any reasonably foreseeable adverse effects on the human environment. There is currently no specific significance level for receptor exposure. Without a significance level for exposure, one cannot accurately and scientifically predict the effects on the human environment. Studies are currently being conducted to clarify some of these unknowns; however, the information is not available now.

#### Short-Term Construction Effects

Direct temporary effects would include construction activities, which could increase short-term air emissions. Exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest

percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and some odors could probably cause occasional annoyance and complaints at some residences very close to the right-of-way.

Estimated construction emissions are summarized in the Air Quality Technical Report. The calculations predict the proposed project would generate more than 2 tons per year of nitrogen oxide emissions, an amount that must be reduced by 20 percent, either through on-site mitigation measures or through payment of an off-site mitigation fee as required by the San Joaquin Valley Pollution Control District's Rule 9510.

### Sensitive Receptors

Sensitive land uses in the project vicinity include the planned residential development that will be located to the northwest and southwest of the proposed project. Once built, the nearest residences would be about 80 feet from the project site boundary. The nearest schools to the project site include the Ollivier Leon Junior High School, about a mile northeast of the proposed project. The McKee Primary School is slightly more than a mile southeast of the project site. The closest hospitals/medical centers, Parkview Julian Convalescent and Good Samaritan Hospital, are roughly three miles northwest of the project. The closest park, Kern Delta Park, is a half mile southeast of the project site. No impacts to sensitive receptors are anticipated.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The San Joaquin Valley Air Pollution Control District and Kern County Air Pollution Control District have specific rules dealing with filing dust control plans. For the San Joaquin Valley Pollution Control District, an Air Impact Analysis for Indirect Source Review (Rule 9510) must be submitted for evaluation of potential construction emissions of PM<sub>10</sub> and oxides of nitrogen. The air impact analysis would calculate emissions resulting from only the construction phase of this project. The proposed project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving a 20 percent nitrogen oxide reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following measures.

- Operating equipment powered by engines that were manufactured later than 1996
- Retrofitting existing equipment with control devices (e.g., exhaust oxidation catalyst)
- Using cleaner fuels such as liquefied natural gas, compressed natural gas, or aqueous diesel fuel, as feasible

- Prohibiting trucks from idling for longer than 10 minutes, whenever practical
- Using only well-maintained equipment; properly planning to reduce rework and multiple handling of earth materials
- Paying a mitigation fee to the San Joaquin Valley Air Pollution Control District to obtain reductions through incentive and other programs

Most of the rest of the construction impacts to air quality are short-term in duration and would not result in adverse or long-term conditions. The following measures would reduce any air quality impacts resulting from construction activities:

- The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999). Section 7, "Legal Relations and Responsibility," address the contractor's responsibility on many items of concern, such as air pollution; use of pesticides; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 10 is directed at controlling dust.
- Applying water or dust palliative to the site and equipment frequently as necessary to control fugitive dust emissions.
- Washing trucks off as they leave the right-of-way as necessary to control fugitive dust emissions.
- Properly tuning and maintaining construction equipment and vehicles. Using low sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- Developing a special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Locating equipment and material storage sites as far away from residential and park uses as practical. Keeping construction areas clean and orderly.
- To the extent feasible, establishing environmentally sensitive areas for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Using track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on road affected by construction traffic.

- Covering all transported loads of soil and wet materials prior to transport, or providing adequate freeboard (space from the top of the material to the top of the truck) to reduce PM<sub>10</sub> and deposits of particulate during transportation.
- Removing dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- To the extent feasible, routing and scheduling construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Installing mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area.

## **2.2.5 Noise and Vibration**

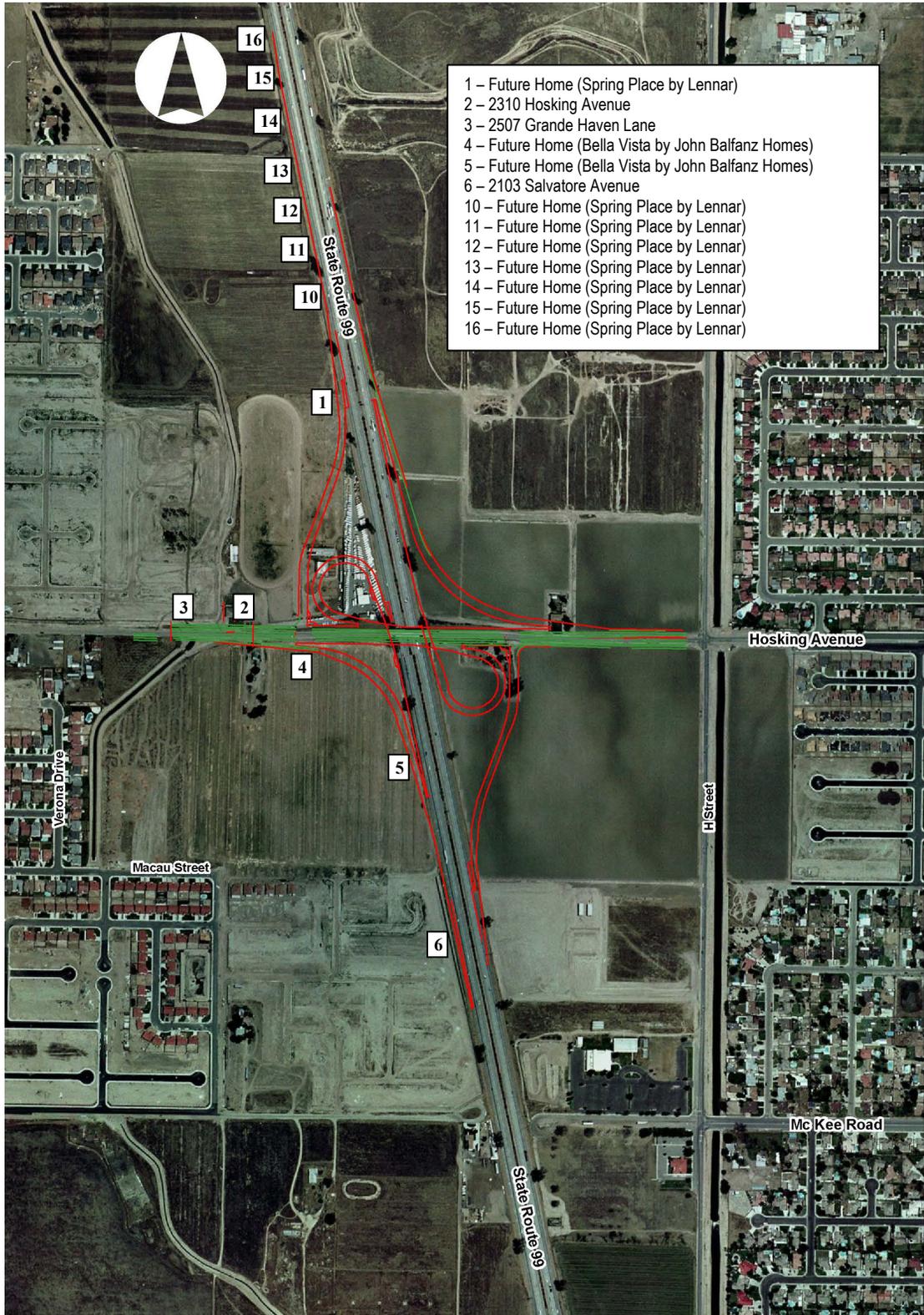
### ***Affected Environment***

A Noise Study Report was prepared in February 2009 to assess potential noise impacts of the proposed project on noise sensitive receptors located within the vicinity of the project site. The analysis followed the Caltrans Traffic Noise Analysis Protocol and Technical Noise Supplement, which satisfy the requirements for noise capabilities studies and abatement requirements. The protocol is also consistent with the requirements of the Federal Highway Administration, and it is designed to evaluate potential traffic-generated noise impacts, as well as determining reasonable and feasible noise abatement measures for the project.

Current land uses within the project limits are primarily single family residential developments located in both the northwest and southwest quadrants of the existing Hosking Avenue and State Route 99 overcrossing. Each residential area is protected by a wall about 15 feet high facing State Route 99. The northeast and southeast quadrants do not have any sensitive receptors located within the project limits, since both are currently vacant. A total of 13 receptor locations were analyzed for the project. These receptor locations are shown on Figure 2-3.

### ***Environmental Consequences under the National Environmental Policy Act***

The Caltrans Traffic Noise Analysis Protocol defines a noise impact as occurring when the future noise level at an affected receiver approaches or exceeds the noise abatement criteria. The existing noise levels were measured at 13 receivers during the highest traffic noise hour. One receiver has been identified as approaching or exceeding the noise abatement criteria by the year 2035. Table 2.9 shows the existing and post-project peak-hour noise levels of this project.



Source: Parsons, 2009.

**Figure 2-3 Noise Receptor Locations**

*Hosking Avenue / State Route 99 Interchange – New Connection Project*

**Table 2.9 Existing and Post-Project Peak-Hour Noise Levels**

Receptor No.	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Reasonable and Feasible
1	Future Home Site on March Avenue, Bakersfield (Spring Place by Lennar)	62	62	63	No	No
2	2310 Hosking Avenue, Bakersfield	66	64	67	Yes	No
3	2507 Grande Haven Lane, Bakersfield (Granite Pointe by S&S Homes)	64	62	64	No	No
4	Future Home Site 1, Bakersfield (Bella Vista by John Balfanz Homes)	54	58	58	No	No
5	Future Home Site 2, Bakersfield (Bella Vista by John Balfanz Homes)	64	64	64	No	No
6	2103 Salvatore Avenue, Bakersfield	62	65	65	No	No
10	Future Home Site, Bakersfield (Spring Place by Lennar)	65	65	65	No	No
11	Future Home Site, Bakersfield (Spring Place by Lennar)	65	65	65	No	No
12	Future Home Site, Bakersfield (Spring Place by Lennar)	64	64	64	No	No
13	Future Home Site, Bakersfield (Spring Place by Lennar)	65	64	65	No	No
14	Future Home Site, Bakersfield (Spring Place by Lennar)	64	64	64	No	No
15	Future Home Site, Bakersfield (Spring Place by Lennar)	63	63	63	No	No
16	Future Home Site, Bakersfield (Spring Place by Lennar)	64	63	64	No	No

Source: Parsons, 2009.

Receptor Location 2 is affected by the noise from the additional lanes being added to Hosking Avenue as a result of the project. Noise abatement would not be feasible for this location because any noise abatement walls would interfere with access to the residence. Therefore, this location is not being considered for abatement.

The existing soundwalls located on the west side of State Route 99 are adequate to provide proper noise abatement. No changes to these soundwalls are required to further abate noise from State Route 99.

***Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act***

For purposes of the National Environmental Policy Act, soundwalls must be considered because one receiver has been identified as approaching or exceeding the noise abatement criteria by the year 2035. However, noise abatement would not be feasible for this location because any soundwalls would interfere with access to the residence. Therefore, this location is not being considered for abatement.

***Environmental Consequences under the California Environmental Quality Act***

When determining whether a noise impact is significant under the California Environmental Quality Act, the projected noise levels for the No-Build Alternative are compared to those for the Build Alternative. The California Environmental Quality Act noise analysis is completely independent of the National Environmental Quality Act (23 Code of Federal Regulations 772) analysis discussed above, which is centered on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in a given area. Key considerations include the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

Thirteen sensitive receptors were identified within the project limits. Caltrans Traffic Noise Analysis Protocol defines that a noise impact occurs when the future noise level with the project is substantially greater than the existing noise level. Noise levels at 10 receptors would be the same in both the No-Build and Build future years (see Table 2.9). Three receptors would see increased noise of 1 to 3 dBA, which is the

threshold at which people can detect that a noise level has changed. With the build alternative there would be no substantial increases in noise.

**Avoidance, Minimization, and/or Noise Abatement under the California Environmental Quality Act**

No impacts are expected under the California Environmental Quality Act. No abatement is required.

**Construction Noise**

Noise at the construction site would be temporary and intermittent, and its intensity would vary. The degree of construction noise impacts may vary for different areas of the project site and depending on the construction activities. Construction is accomplished in several different phases. These phases and their estimated overall noise levels at the right-of-way can be characterized as shown in Table 2.10.

**Table 2.10 Typical Construction Noise**

Construction Phase	Leq(h), dBA	
	15 meters (50 feet) from centerline	30 meters (100 feet) from centerline
Clearing and grubbing	86	83
Earthwork	88	85
Foundation	85	82
Base Preparation	88	85
Paving	89	86

Source: FHWA, 1977.

Existing noise levels can be compared with the expected noise levels produced by various construction activities to assess construction noise impacts. During the construction period, sensitive receptors that are close to the project limits may experience temporary impacts.

The following equipment noise control measures should be implemented to minimize noise and vibration disturbances at sensitive receptors during periods of construction:

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

- Use construction methods or equipment that would provide the lowest level of noise and ground vibration impact such as alternative low noise pile installation methods.
- Turn off idling equipment.
- Use temporary noise barriers and relocate them as needed, to protect homes and other sensitive locations against excessive noise from construction activities. Noise barriers can be made of heavy plywood or moveable insulated sound blankets.

The following administrative measures would be used to limit noise concerns:

- Follow a construction noise and/or vibration monitoring program in order to limit the impacts.
- Limit construction activities to daytime hours, if possible.
- Keep noise levels relatively uniform and avoid sudden or explosive noises.
- Maintain good public relations with the community to minimize objections to the unavoidable construction impacts. Provide frequent activity updates about what's going on during construction.

A combination of abatement techniques with equipment noise control and administrative measures can be selected to provide the most effective means to minimize effects of the construction activity. Applying abatement measures would reduce construction effects; however, a temporary increase in noise and vibration over the existing ambient levels would be likely.

## **2.3 Biological Environment**

### **2.3.1 Natural Communities**

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Threatened and Endangered Species, Section 2.3.4.

### ***Affected Environment***

A Natural Environment Study was prepared for the project in March 2009. The project area was surveyed in September 2007 and January 2009 for evidence of listed species, potential habitat that each would require, and ecologically important biotic communities.

A search of existing records (California Natural Diversity Data Base) was conducted for all formally listed species, those species not yet listed but thought to be in decline in at least part of their historic range, and natural ecological communities of regional importance. The only record of regionally important plant assemblage was for the Valley Saltbush Scrub. This natural community occurs more than 3.5 miles southeast of the project area.

The biological study area encompasses an area about 3 miles in radius from the project area. The biological study area was surveyed and no occurrences of the Valley Saltbush Scrub or any other plant community deemed regionally important by the California Department of Fish and Game or the California Native Plant Society were discovered. No habitat designated critical by the United States Fish and Wildlife Service was found within the project area, nor do any extend into the project area.

### ***Environmental Consequences***

Under the Build Alternative, no impacts to natural communities are anticipated since no natural communities exist within the project construction area.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No mitigation measures are required.

## **2.3.2 Plant Species**

### ***Regulatory Setting***

“Special-status” is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see Section 2.3.4, Threatened and Endangered Species, in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including California Department of Fish and Game fully-protected species and species of special concern, United States Fish and Wildlife Service candidate species, and non-listed California Native Plant Society rare and endangered plants. A summary list of species of concern potentially in the project area is included in Appendix D, and Appendix E contains the report of listed, proposed species, and critical habitat potentially occurring or known to occur in the project area.

### ***Affected Environment***

A Natural Environment Study was prepared for the project in March 2009. The project area was surveyed in September 2007 and January 2009 for evidence of listed species, potential habitat that each would require, and ecologically important biotic communities.

The Bakersfield smallscale and Horne's milk-vetch are the only two plant species to have habitats mapped within 3.1 miles of the proposed project. No other plant species protected by either the federal or the state Endangered Species Act, or accorded special status by California Department of Fish and Game or the California Native Plant Society, are distributed within the project area.

Bakersfield smallscale always grows amid chenopod scrub communities. Plants of this species were last seen at the single known locality (closer than 3.1 miles to the project area) in 1921. The locale is now a major north/south road abutted by residential development. The California Natural Diversity Data Base deems this population extirpated.

Horne's milk-vetch grows in damp meadow lands and seeps. It prefers alkaline soils. This species was last seen at the single known location (within 3.1 miles) in 1945. Throughout its current range, Horne's milk-vetch has no formal protection through either federal or state statutes.

During the field survey, no plant species protected by either the federal or the state Endangered Species Act, or accorded special status by California Department of Fish and Game or California Native Plant Society, were found within the project construction area.

### ***Environmental Consequences***

Under the Build Alternative, no impacts to special-status plant species are anticipated since no special-status plant species exist within the project construction area.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Implementation of the project would not require explicit measures to avoid or to minimize disturbance to either regionally important plant species, as none grow any longer in the project construction area.

#### **2.3.3 Animal Species**

This section discusses potential impacts and permit requirements associated with wildlife 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 2.3.4. 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 the United States Fish and Wildlife Service or National Oceanic and Atmospheric Fisheries Service candidate species.

#### ***Affected Environment***

A Natural Environment Study was prepared for the project in March 2009. The project area was surveyed in September 2007 and January 2009 for evidence of listed species, potential habitat that each would require, and ecologically important biotic communities. Three animal species were found in the California Natural Diversity Data Base records that had habitat mapped within 3.1 miles of the proposed interchange at Hosking Avenue. These include the American badger, burrowing owl, and San Joaquin kit fox. All other animal species protected by either the federal or the state Endangered Species Act, or accorded special status by California Department of Fish and Game or California Native Plant Society have a current distribution farther away from the project construction area than 3.1 miles. The San Joaquin kit fox is discussed in Section 2.3.4 Threatened and Endangered Species.

##### American Badger

American badgers were more widespread and abundant prior to agricultural cultivation. Badgers dig large burrows in friable (or easily crumbled) soils, but only where those soils are undisturbed.

A thorough search of each embankment, the borders of fields previously farmed, and fence lines between farm fields and right-of-way for State Route 99 found no burrow either large enough or distinctive of opening to be inhabited by a badger.

In the northeast, southeast, and southwest quadrants of the proposed interchange, all land out from the toe of each embankment was turned after the last harvest, probably late in the fall of 2005. There are no plots of land not already being farmed, subdivided or developed as residential housing neighborhoods that are big enough to sustain a badger, anywhere within several miles of the project construction area. The nearest possible source of migrants is so far from the project area that there is no ecologically realistic chance of badgers moving into the project area. The most recent record (1921) denotes a solitary badger about six miles north and east of the project construction area, in what is now urban Bakersfield.

Badgers no longer inhabit this project area and cannot realistically re-colonize from any known, distant population.

#### Burrowing Owl

Burrowing owls can be identified readily by their distinctive flight motions and silhouette while on the wing and by the nature of the burrow they inhabit. They would occupy burrows (dug most commonly by California ground squirrels [*Spermophilus beecheyi*]) along ditch banks, stable berms between cultivated fields, road embankments, and gentle hills and swales of grasslands or native communities of low-growing perennials. California Natural Diversity Data Base records show burrowing owls in two separate locations, one southeast and the other southwest of the project construction area, and each nearly 3.1 miles distant from the project construction area.

All likely surfaces within the project construction area were examined looking for feathers in burrows, white wash around the opening, distinctive owl pellets on the apron around an opening, or dense scatters of beetle exoskeletons. No such burrows occur anywhere in the project construction area. No birds were seen from a distance posting on local prominences or fence posts. Similarly, no burrowing owls were seen on the wing anywhere in the project construction area, or while reconnoitering the land around for about a mile distant.

### **Environmental Consequences**

There would be no impacts to the American badger; however, if the lands were to remain untended, and Hosking Avenue embankments to be unmaintained for up to two years, burrowing owls could re-inhabit parts of the project construction area. If no further developments were to occur or farming to be resumed, general habitat conditions in the project area could sustain burrowing owls, even though the potential habitat throughout the project area is of low quality.

### **Avoidance, Minimization, and/or Mitigation Measures**

As American badgers no longer occupy any portion of the biological study area, no avoidance measures need be implemented during project construction. However, the following measures shall be implemented to minimize the impacts to burrowing owls.

- Schedule ground preparation after the breeding season (generally March through August), when all burrowing owl chicks in the region have fledged and are fully independent
- Survey the construction footprint before clearing and grubbing to determine whether owls have moved into the project area
- If owls are found in this survey, employ a qualified biologist to excavate the burrows and remove any owls present. The burrow, and any others found nearby, would be collapsed to preclude burrowing owls from returning back to them
- Have an authorized biologist monitor the early stages of mechanized site preparations to verify no unnoticed burrowing owl burrows remain in the construction footprint.

Protection measures for migratory birds would be included in the special provisions of the construction contract. If there are lengthy delays before construction starts, a second survey of the project site would need to be undertaken.

### **2.3.4 Threatened and Endangered Species**

The San Joaquin kit fox is the only threatened or endangered species is known from California Natural Diversity Data Base records whose separate mapped distribution comes within 3.1 miles of the proposed interchange at Hosking Avenue. All other animal species protected by either the federal or the state Endangered Species Act, or accorded special status by California Department of Fish and Game or California

Native Plant Society have a current distribution farther away from the project construction area than 3.1 miles.

### ***Affected Environment***

A Natural Environment Study was prepared for the project in March 2009. The project area was surveyed in September 2007 and January 2009 for evidence of listed species, potential habitat that each would require, and ecologically important biotic communities.

#### San Joaquin Kit Fox

Kit foxes forage mainly at twilight (dusk and dawn). Since the field survey was conducted at mid-day, none would reasonably have been seen even if present in the project construction area.

Because of this, the survey emphasized burrows and other indirect signs.

Kit fox dens were seen along the shallow berm where the fence line separates the previously farmed lands from the State Route 99 right-of-way. However, the previously farmed lands have been so thoroughly cultivated that any possible kit fox dens in the project construction area would have been destroyed.

Recently dug kit fox burrows were found at the very toe of the northwest embankment. The best den of the three in the northwest embankment has the distinctive key-hole shape quite clearly shown; approximately one foot tall and six inches wide. This most distinctively shaped burrow opening had small grasses, twigs, and the drag-line silk strands left by wandering spiders across its opening. Neither kit fox footprints nor droppings were present. The burrow was not currently inhabited, but quite likely had been recently. In contrast, other burrows in the southwest slope of Hosking Avenue had been dug higher up into the embankment. All burrows on this southwest embankment were old, abandoned, and collapsed. None of them appeared inhabited in September 2007.

### ***Environmental Consequences***

Approximately 16.61 acres of potentially habitable kit fox land will no longer be habitable for kit foxes.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The following measures shall be implemented to minimize the impacts to San Joaquin kit foxes:

- Schedule ground preparation between September and the end of November when kit fox pups are not likely be present in dens.
- Survey the construction footprint before clearing and grubbing to determine whether kit foxes have moved into the area.
- If kit foxes are found in this survey, employ a qualified biologist to excavate the burrows and remove any kit foxes. The burrow, and any others found nearby, would be collapsed to preclude the kit foxes from returning to them.
- Have an authorized biologist monitor the early stages of mechanized site preparations to verify no unnoticed kit fox burrows remain in the construction footprint.
- Make payment into the general Metropolitan Bakersfield Habitat Conservation Plan operating fund in accordance with the requirements of the Metropolitan Bakersfield Habitat Conservation Plan to offset all unavoidable incidental takes as may be required to evict kit foxes from dens within the construction area.
- Acquire a Section 2080.1 Permit for Threatened and Endangered Species from the California Department of Fish and Game. (See Chapter 3 for a summary of coordination with Fish and Game to date.)
- Obtain a Biological Opinion from the United States Fish and Wildlife Service. (See Chapter 3 for a description of informal consultation with the Service.)

### **2.3.5 Invasive Species**

#### ***Affected Environment***

A Natural Environment Study was prepared for the project in March 2009. The project area was surveyed in September 2007 and January 2009 for evidence of listed species, potential habitat that each would require, and ecologically important biotic communities. A field survey was conducted throughout the project construction area. Only one species of invasive species was identified: tumbleweed (also named Russian thistle). The tumbleweed is not regarded as potentially destructive of native habitats in the same manner of other, more serious pest species.

### ***Environmental Consequences***

Construction of the interchange would remove all vegetation from the embankments and paved surfaces, tumbleweeds included. None of the species on the California list of noxious weeds is currently used by Caltrans for erosion control or landscaping in the project area.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No minimization or mitigation measures are required since all vegetation would be removed from the embankments and paved surfaces during construction. Attention would be made to not plant invasive non-native plants when landscaping for highway and urban needs.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

## **2.4 Cumulative Impacts**

### ***Affected Environment***

Planned or approved projects within a 1-mile radius were considered for the cumulative impact analysis. Several projects were identified that are approved or planned within the project vicinity, including several housing tracts (in the northwest and southwest quadrants of the project location) and the Woodmont project (in the northeast quadrant of the project location). The Woodmont is a large outdoor shopping mall.

### ***Environmental Consequences***

Potential cumulative operational impacts would be primarily related to traffic associated with the commercial and residential development planned in the vicinity of the proposed project. None of these projects have environmental documents completed at this time.

The traffic expected to be generated by the Woodmont project would be the greatest contributor. Other possible cumulative operational effects could be air quality and

noise. Since future traffic estimates were used in the traffic analysis for the proposed project, and those estimates were based on Kern County Council of Governments socioeconomic estimates, potential cumulative effects as a result of traffic have already been accounted for. Likewise, the effects on air quality and noise have also been analyzed through the use of future estimates from Kern County Council of Governments.

Regarding potential cumulative construction phase impacts, it is likely that parts of the Woodmont construction may be happening at the same time as construction activities for the proposed project. This could result in cumulative impacts related to noise, air quality and traffic. While these cumulative effects would occur, they would be temporary and each would be subject to a set of project level-imposed mitigation measures. As a result, the cumulative effects, while still occurring, would be reduced to a level that would be practicably minimized. Therefore, there would be no cumulatively considerable impacts.

***Avoidance, Minimization, and/or Mitigation Measures***

All projects in the planning process, including any Caltrans or City of Bakersfield projects, would be subject to separate environmental review. Coordination of Traffic Management Plans as well as incorporating other best management practices would be required with the Woodmont project and other planned residential developments within the project area. This would effectively reduce potential cumulative adverse effects.

**2.5 Climate Change under the California Environmental Quality Act**

***Regulatory Setting***

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization’s Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of greenhouse gases related to human activity that include carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) 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; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency. The waiver was denied by the U.S. Environmental Protection Agency in December 2007 and efforts to overturn the decision have been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that the U.S. Environmental Protection Agency will reconsider its decision regarding the denial of California's waiver.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. 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 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall greenhouse gas emissions reduction goals 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.

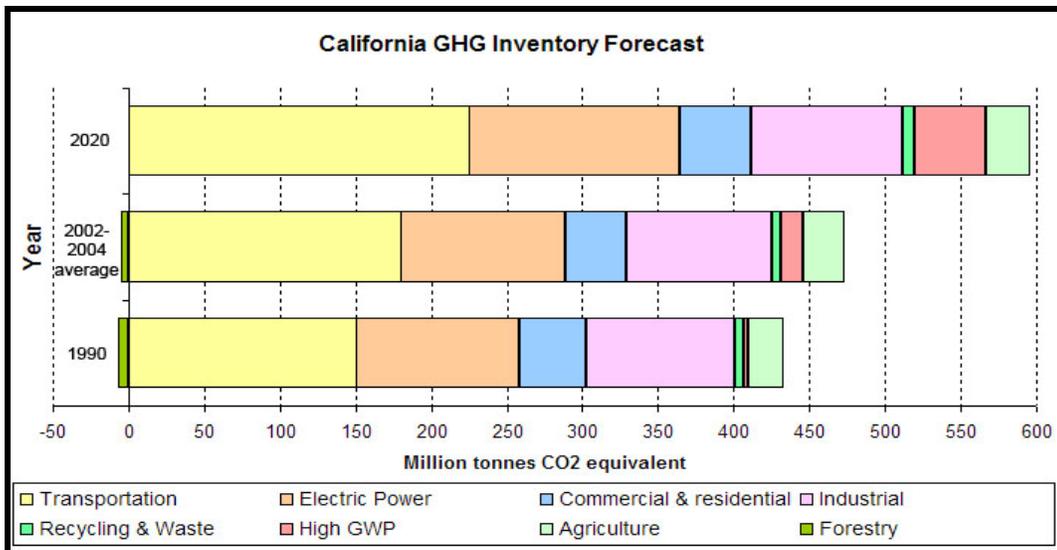
With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gas as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, 549 U.S. 497 (2007)). The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental

Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate change in CEQA Documents* (March 5, 2007), 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 gases. In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable.” See CEQA Guidelines sections 15064(i) (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 in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, California Air Resources Board recently released an updated version of the greenhouse gas inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.



<http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

**Figure 2-4 California Greenhouse Gas Inventory**

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 (see *Climate Action Program at Caltrans* (December 2006)), Caltrans has created and is implementing the *Climate Action Program at Caltrans* that was published in December 2006. This document can be found at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>

One of the main strategies in Caltrans' Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. Transportation's contribution to greenhouse gas emissions is dependent on 3 factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour). Optimum speeds are between 45 and 50 miles per hour. Looking at the state transportation system as a whole, enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.

### **Project Analysis**

The City of Bakersfield, in Kern County comprises approximately 72,320 acres (113 square miles) with over 50 percent of the land designated as "open". According to the United States Census the population for Kern County in 2000 was 661,645 persons. By 2030, the county population is expected to almost double to 1.3 million persons. Between 2002 and 2020, the city of Bakersfield is expected a 20 percent increase in population from 247,057 to 296,468.

The project is located within the San Joaquin Valley Air Basin, which is currently classified as "in attainment/unclassified" for carbon dioxide levels in federal air quality standards and state standards. Carbon dioxide is a common indicator of the various greenhouse gases. Carbon dioxide and most of the greenhouse gases are not currently listed in the Clean Air Act as Priority Pollutants; therefore, there is no federal or state ambient air quality limit for these gases.

The primary purpose of the Hosking Avenue/State Route 99 Interchange – New Connection Project is to provide a new connection to State Route 99 to serve current and future development astride the Hosking Avenue corridor. This will help to reduce

traffic volumes at existing adjacent interchanges. Section 1.2.2, Need, discusses the traffic operations of the interchange and existing adjacent interchanges.

An interchange would be added along State Route 99 at Hosking Avenue to provide a new connection to State Route 99, to reduce traffic volumes at existing adjacent interchanges, to reduce traffic volumes on roads which lead to existing adjacent interchanges, and to upgrade Hosking Avenue to match the City of Bakersfield six-lane major arterial standard cross section. The new connection would provide travel time savings, reduce the potential for accidents by reducing congestion, and reduced greenhouse gas emissions.

The Hosking Avenue/State Route 99 Interchange – New Connection Project is included in the Regional Transportation Plan that discusses improved traffic flow, and reduction of congestion and accidents for the region's network. It is within the constrained list of the Final 2007 Regional Transportation Plan and the Metropolitan Bakersfield Major Highway Network Improvement Projects list (2007 - 2010). The design concept and scope of the Hosking Avenue/State Route 99 Interchange – New Connection Project is consistent with the project description in the 2007 Regional Transportation Plan, the 2007 Regional Transportation Improvement Programs, and the assumptions in the Kern Council of Government's regional emissions analysis. As such, the project development would not conflict with or obstruct the implementation of the Air Quality Management Plan or Transportation Control Measures identified in the currently approved State Implementation Plan. With an estimated cost of \$38.8 million, the project cost is less than one percent of the over \$3.9 billion cost of the major projects and programs included in Within Projected Funds (Constrained) Project list of the Final 2007 Regional Transportation Plan.

The Hosking Avenue/State Route 99 Interchange – New Connection Project would have the following greenhouse gas emissions reducing benefits:

- High traffic volumes and inadequate access control have contributed to congestion and less than desirable operating conditions at existing adjacent interchanges. The addition of the Hosking Avenue interchange will help to divert traffic from existing adjacent interchanges which will result in improved levels of service at existing adjacent interchanges and intersections. By reducing the length of time that vehicles are idling in traffic queues and improving the flow of traffic and access control with the proposed project, it is anticipated that carbon dioxide emissions would be reduced.

Hosking Avenue would be widened to six lanes. This improvement would further enhance safety, reduce congestion, and increase connectivity of the local system. While reducing congestion and increasing connectivity would likely lead to reductions in carbon dioxide emissions, some of these improvements may be offset by the increase in the number of vehicles that the widened facility would accommodate. 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 CO2 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 2.11 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 2.11 Required Miles Per Gallon by Alternative**

<b>Model Year 2015 Required Miles Per Gallon (mpg) by Alternative</b>							
<b>No Action</b>		<b>25% Below Optimized</b>	<b>Optimized (Preferred)</b>	<b>25% Above Optimized</b>	<b>50% Above Optimized</b>	<b>Total Costs Equal Total Benefits</b>	<b>Technology Exhaustion</b>
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

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.”<sup>1</sup>

Third and as previously stated, California has recently adopted a low-carbon transportation fuel standard. CARB 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.

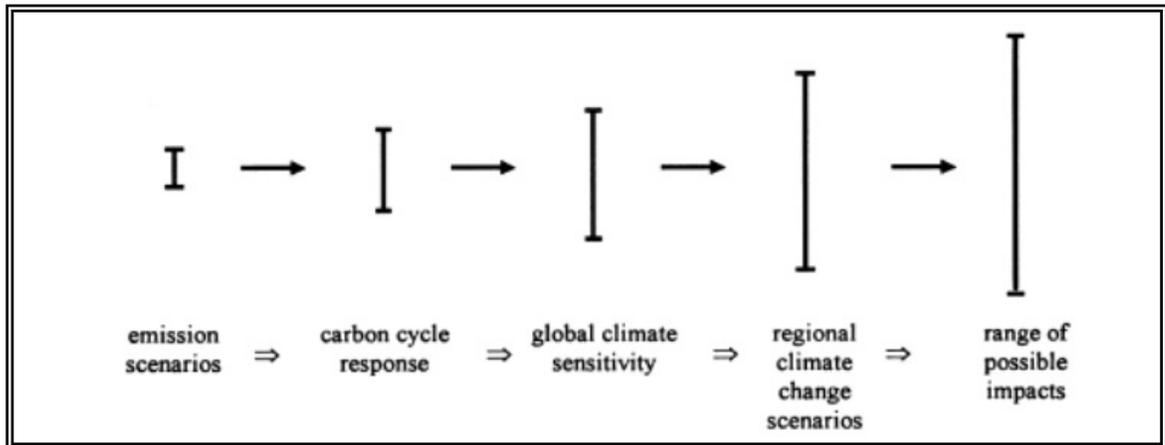
### ***Limitations and Uncertainties with Impact Assessment***

Taken from p. 3-70 of the National Highway Traffic Safety Administration Final EIS for New CAFE Standards (October 2008), Figure 2-5 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

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<sup>1</sup> *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.*

“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 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 CO<sub>2</sub> emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO<sub>2</sub> 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 CO<sub>2</sub> from 2000 to 2030, which represents an increase of between 25 and 90%.<sup>2</sup>

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

<sup>2</sup> 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>.

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 CO<sub>2</sub> 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 EIS 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 MY 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 CO<sub>2</sub>, 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 CO<sub>2</sub> 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]

### **CEQA Conclusion**

As discussed above, there are likely to be both benefits and impacts to climate change associated with the proposed project and there are still many uncertainties with climate change impact assessment. Therefore, 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 determination regarding significance of the project’s direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to

implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

### AB 32 Compliance

Caltrans continues to be actively involved on the Governor’s Climate Action Team as California Air Resources Board works to implement AB 1493 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. 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 \$107 in transportation funding during the next decade. As shown on the figure below, 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 yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

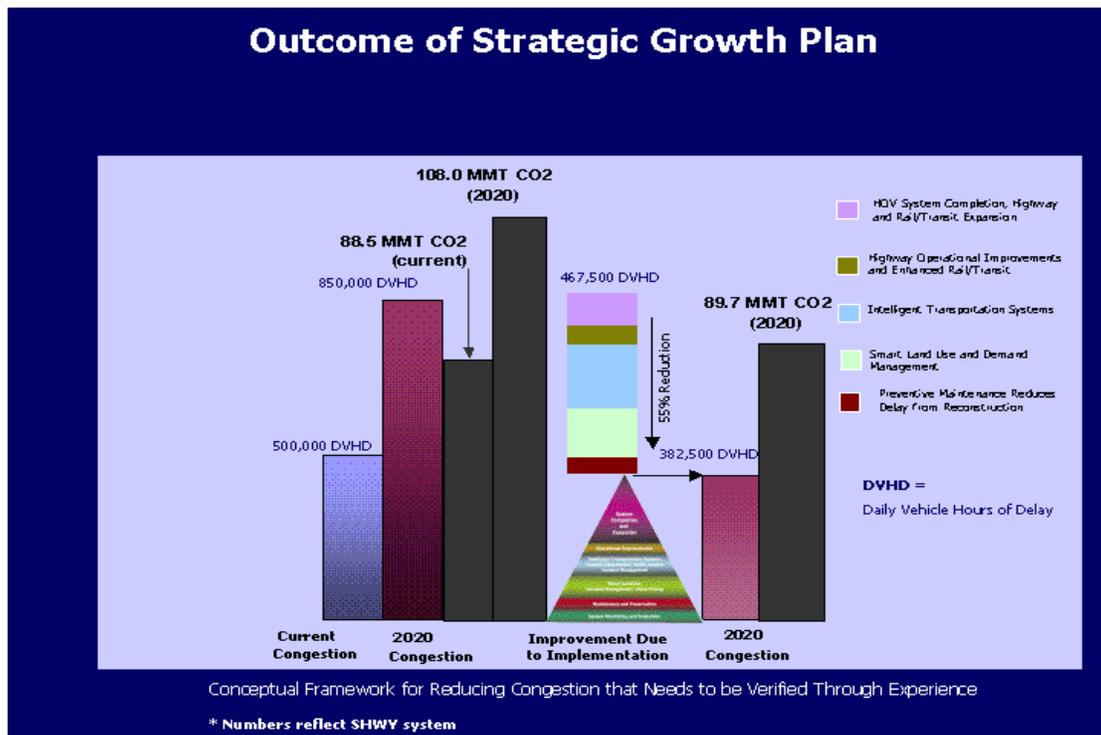


Figure 2-6 Outcome of Strategic Growth Plan

Hosking Avenue / State Route 99 Interchange – New Connection Project

As part of the *Climate Action Program at Caltrans* (December 2006, <http://www.dot.ca.gov/docs/ClimateReport.pdf>), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans 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; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislation 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 United States Environmental Protection Agency and California Air Resource Board. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the University of California Davis.

Table 2.12 summarizes the Department and statewide efforts that Caltrans is implementing in order to reduce greenhouse gas emissions. For more detailed information about each strategy, please see *Climate Action Program at Caltrans* (December 2006); it is available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

**Table 2.12 Climate Change Strategies**

Strategy	Program	Partnership		Method/Process	Estimated CO <sub>2</sub> 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	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy & Greenhouse Gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, 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	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	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	18.67

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 the greenhouse gas emissions and potential climate change impacts from the project:

- Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. Intelligent Transportation Systems are commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
- Landscaping reduces surface warming, and through photosynthesis, decreases carbon dioxide. The project proposes planting in the intersection slopes, drainage channels, and in areas adjacent to the roads. A variety of palms, trees, shrubs, ground cover, and native grasses will be planted. Caltrans has committed to planting vegetation and trees. Trees sequester atmospheric carbon to create beneficial greenhouse gas sinks. Tree canopy also creates a drop in paved surface temperature through shade and the cooling effect of water as it evaporates into the air from leaves through transpiration. Vegetation generally increases albedo as compared to bare earth and increase the amount of vapor in the air and rainwater retained in a location thereby adding to the cooling effect as well as increasing groundwater recharge, decreasing the amount of rainwater that is run-off into stormdrains and reducing the transport of pollutants into streams, and thus ultimately into the ocean.
- The project would incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs—or balls, in the stoplight 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 LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects C Landscaping reduces surface warming, and through photosynthesis, decreases carbon dioxide emissions.
- According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to 10 minutes in each direction; in addition, the contractor must comply with the San Joaquin Valley Air Basin’s rules, ordinances, and regulations in regard to air quality restrictions.

The following "green" practices and materials would be used in the project as part of highway planting and erosion control work:

- PVC irrigation pipe with recycled content
- Non-chlorinated high density polyethylene (HDPE) irrigation crossover conduit
- Compost and soil amendments derived from sewage sludge and green waste materials
- Fiber produced from recycled pulp such as newspaper, chipboard, cardboard
- Wood mulch made from green waste and/or clean manufactured wood or natural wood
- Native and drought tolerant seeds and plant species
- Irrigation controllers that include water conservation features
- Restricted pesticide use and reduction goals.
- Landscaping will use reclaimed water where feasible if it becomes available.

The State of California maintains several websites, which provide public information on measures to improve renewable energy use, energy efficiency, water conservation and efficiency, land use and landscape maintenance, solid waste measures, and transportation alternatives.

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## **Chapter 3**      **Comments and Coordination**

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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, and interagency coordination meetings. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

### **California Department of Fish and Game**

November 5, 2007: Parsons participated in telephone discussions with Julie Vance of the California Department of Fish and Game regarding records of road kills and chance sightings of San Joaquin kit fox.

November 6-14, 2007: Parsons participated in several telephone discussions with Charlotte Peters of the California Department of Fish and Game the southern boundary of the Metropolitan Bakersfield Habitat Conservation Plan.

### **United States Fish and Wildlife Service**

March 5, 2009: Caltrans talked to the United States Fish and Wildlife Service regarding San Joaquin kit fox habitats, and had a conversation about the measures of potential impact and about whether the upland programmatic was applicable to this project site. The U.S. Fish and Wildlife Service agreed to include the potential impacts in the Biological Opinion. The Service also recommended that the upland programmatic be used in this analysis. The mapping of likely impacts to kit fox habitat shows that the area that would be affected totals 16.61 acres.

### **Bakersfield Historic Preservation Commission, Economic and Community Development Department**

October 4, 2007: Parsons sent a letter to Ann Sullivan asking about known historic/cultural resources on or near the proposed project.

October 4, 2007: Parsons sent a letter to Donna Barnes asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent an e-mail to Ann Sullivan asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Donna Barnes asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons received a reply from Donna Barnes concerning known historic/cultural resources on or near the proposed project. Ms Barnes stated the Commission did not have any further information on the historic/cultural resources on or near the proposed project study area.

**County of Kern, Planning Department**

October 4, 2007: Parsons sent a letter to Ted James asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Ted James asking about known historic/cultural resources on or near the proposed project.

October 23, 2007: Parsons left a follow-up phone message for Ted James asking about known historic/cultural resources on or near the proposed project. No response was received.

**Santa Rosa Rancheria**

October 4, 2007: Parsons sent a letter to Clarence Atwell asking about known historic/cultural resources on or near the proposed project area.

October 19, 2007: Parsons sent a follow-up e-mail to Clarence Atwell and a follow-up fax sent to the tribal office fax machine asking about known historic/cultural resources on or near the proposed project. No response received.

**Tule River Indian Tribe**

October 4, 2007: Parsons sent a letter to Neil Peyron asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Neil Peyron and a follow-up phone call (message left on Rodney Martin's voicemail) was made asking about known historic/cultural resources on or near the proposed project. No response received.

**Public Solicitation**

October 4, 2007: Parsons sent a letter to Ron Wermuth asking about known historic/cultural resources on or near the proposed project.

October 4, 2007: Parsons sent a letter to Kenneth Woodrow asking about known historic/cultural resources on or near the proposed project.

October 4, 2007: Parsons sent a letter to Robert Gomez asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Ron Wermuth asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons made a follow-up phone call to Kenneth Woodrow asking about known historic/cultural resources on or near the proposed project. A message was left.

October 19, 2007: Parsons made a follow-up phone call to Robert Gomez asking about known historic/cultural resources on or near the proposed project. A message was left.

October 30, 2007: Parsons made a follow-up phone call to Ron Wermuth asking about known historic/cultural resources on or near the proposed project. A message was left. No response was received.

October 30, 2007: Parsons made a follow-up phone call to Kenneth Woodrow asking about known historic/cultural resources on or near the proposed project. A message was left. No response was received.

October 30, 2007: Parsons made a follow-up phone call to Robert Gomez asking about known historic/cultural resources on or near the proposed project. A message was left. No response was received.

**Chumash Council of Bakersfield**

October 4, 2007: Parsons sent a letter to James Leon asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons made a follow-up phone call to James Leon asking about known historic/cultural resources on or near the proposed project. A message was left.

October 30, 2007: Parsons made a follow-up phone call to James Leon asking about known historic/cultural resources on or near the proposed project. A message was left. No response was received.

**Kern Valley Indian Council**

October 4, 2007: Parsons sent a letter to Robert Robinson asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons made a follow-up phone call to Robert Robinson asking about known historic/cultural resources on or near the proposed project. A message was left.

October 30, 2007: Parsons made a follow-up phone call to Robert Robinson asking about known historic/cultural resources on or near the proposed project. A message was left. No response was received.

**Tejon Indian Tribe**

September 26, 2007: A Parsons phone call to Kathy Morgan's provided number on the Native American Heritage Commission's list. The person who answered the phone said Ms. Morgan can no longer be reached at the listed number. No further information was provided.

October 4, 2007: Parsons sent a letter to Kathy Morgan asking about known historic/cultural resources on or near the proposed project.

October 4, 2007: Parsons sent a letter to Ernie Garcia asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons made a follow-up phone call to Ernie Garcia asking about known historic/cultural resources on or near the proposed project. No one answered and no answering machine was available. No response received.

**Tubatulabals of Kern County**

October 4, 2007: Parsons sent a letter to Donna Begay asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail with the original letter and maps to Josie Peterson, Tribal Secretary. Parsons also sent a follow-up of the original letter and maps to Donna Begay. The faxes were unsuccessful.

October 22, 2007: Josie Peterson sent an e-mail to Parsons stating “if kept in the ‘Project Location’ boundaries, I see no significant areas of concern.”

October 25, 2007: Parsons receives a letter from Josie Peterson restating the information in her e-mail and further stating that there were no substantial plant gathering areas or traditional cultural places within the project area and recommended that the Tejon Indian Tribe or Chumash Indian Tribe of Bakersfield may have “a better knowledge of this area.”

#### **Native American Heritage Commission**

July 26, 2007: Parsons sends a letter to Dave Singleton, Program Analyst, requesting a search of the sacred lands file be conducted for the proposed project.

August 2, 2007: Parsons receives the results of the sacred lands file search for the proposed project area. No results were found within the proposed project area.

#### **Dust Bowl Historic Foundation care of the Housing Authority of the County of Kern**

October 4, 2007: Parsons sent a letter to Randy Coats asking about known historic/cultural resources on or near the proposed project.

October 4, 2007: Parsons sent a letter to Susan Gonzalez asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Randy Coats asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Susan Gonzalez asking about known historic/cultural resources on or near the proposed project.

October 21, 2007: Parsons receives an e-mail from Doris Wendell to review the group’s website, [www.weedpatchcamp.com](http://www.weedpatchcamp.com). Parsons had previously reviewed the website. No additional information was provided by Ms. Wendell.

#### **Kern County Archaeological Society**

October 4, 2007: Parsons sent a letter to Jack Sprague asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Jack Sprague asking about known historic/cultural resources on or near the proposed project. No phone calls could be made due to any phone numbers being listed. No response was received.

**Kern County Historical Society**

October 4, 2007: Parsons sent a letter to Lori Wear asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Lori Wear asking about known historic/cultural resources on or near the proposed project. No phone calls could be made due to any phone numbers being listed. No response was received.

**Kern County Museum**

October 4, 2007: Parsons sent a letter to Carola Enriquez asking about known historic/cultural resources on or near the proposed project.

October 19, 2007: Parsons sent a follow-up e-mail to Carola Enriquez asking about known historic/cultural resources on or near the proposed project.

October 20, 2007: Parsons receives an e-mail from Carola Enriquez stating Carola Enriquez had forwarded the e-mail Parsons sent to her on October 19, 2007 to persons on the county staff who prepare environmental impact reports. Ms. Enriquez's e-mail was carbon-copied to Jeff Nickell and Lori Wear. No response was received.

**Southern San Joaquin Valley Information Center**

August 31, 2007: Parsons requested an archaeological and built-environment resource records search for the project area and the surrounding one-mile radius from the Southern San Joaquin Valley Information Center at the California State University, Bakersfield. Results from this record search indicated 28 investigations have been conducted within a one-mile radius of the project area, none of which include any portion of the project area. Six cultural resources were recorded within a one-mile radius of the proposed project. However, none of the recorded resources are located within the project area.

**Kern County Planning Department**

October 26, 2007: Parsons participated in telephone discussions with Craig Murphy of the Kern County Planning Department regarding the proposed project. Mr. Murphy stated that he did not have any specific knowledge of historical resources in the project area, but that he would check with some of his colleagues and let Caltrans know if he obtains additional information. No additional response has been received.

**San Joaquin Valley Interagency Consultation Partners**

February 18, 2009: Parsons received an email from Robert Ball at the Kern Council of Governments stating that all agencies need to concur that the project is a “Project of Air Quality Concern” and would not cause significant adverse effects to existing air quality. It was requested that all agencies involved in the San Joaquin Valley Interagency Consultation Partners should “reply all” with their concurrence.

March 23, 2009: Robert Ball at the Kern Council of Governments received an e-mail from the United State Environmental Protection Agency stating the agency concurred with the assumptions and analyses.

March 24, 2009: Robert Ball at the Kern Council of Governments received an e-mail from the Federal Highway Administration stating the agency concurred with the assumptions and analyses.

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## **Chapter 4** List of Preparers and Reviewers

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This document was prepared by the following professional staff:

### **Parsons Preparers**

Nasrin Behmanesh, Air Quality Specialist. 15 years of air quality analysis experience.  
Contribution: Author of Air Quality Technical Report.

Carrie Chasteen, Principal Architectural Historian. 7 years of cultural resource document preparation. Contribution: Author of Historical Resources Compliance Report.

Daniel Conaty, Principal Scientist. 25 years of experience in environmental studies preparation. Contribution: Author of Water Resources and Water Quality Technical Report.

Bruce Lander, Principal Paleontologist, Paleo Environmental Associates. Over 35 years of professional paleontological experience. Contribution: Author of Paleontological Evaluation Report.

Thanh Luc, Noise Engineer. 15 years of noise engineering experience. Contribution: Author of Noise Study Report.

John Moeur, Principle Scientist. 17 years of biological survey experience.  
Contribution: Author of the Natural Environment Study.

Jason Paul, Environmental Group Manager, Kleinfelder. 18 years of experience in environmental studies. Contribution: Author of Initial Site Assessment.

Gary Petersen, Environmental Manager. 36 years of NEPA and CEQA experience.  
Contribution: Overall manager and quality control.

Pika Rosario, Environmental Planner. Three years of experience writing environmental documents for transportation projects. Contribution: Author of Visual Impact Assessment.

Robert Scales, Principal Traffic Planner. Over 25 years of traffic planning experience.  
Contribution: Author of Traffic Report.

Angela Schnapp, Environmental Planner. 8 years of experience in environmental documentation preparation. Contribution: Authored Initial Study and Community Impact Assessment and coordinated the environmental process for the project.

### **Caltrans Reviewers**

Allam Alhabaly, Transportation Engineer. B.S., Industrial Engineering, California State University, Fresno; 8 years environmental technical studies experience. Contribution: Oversight review of the Noise Study Report.

Henry Barnes, Landscape Associate. B.A., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 3 years experience in landscape architecture; 1 year visual impact assessment experience. Contribution: Oversight review of the Visual Impact Assessment.

Todd Barosso, Environmental Planner. B.S., Wildlife Biology, California State University, Humboldt; 8 years biology (wetlands) experience. Contribution: Oversight review of the Natural Environment Study.

Michael Calvillo, Associate Environmental Planner, Southern Sierra Environmental Analysis Branch. B.S., Biology, California State University, Fresno; 8 years environmental planning experience. Contribution: Oversight review of the Initial Study/Environmental Assessment.

Abdul Rahim Chafi, Transportation Engineer. Ph.D., Engineering Management, California Coast University, Santa Ana; 10 years environmental technical studies experience. Contribution: Oversight review of the Air Quality technical report.

Ken Doran, Engineering Geologist. M.S., Geology, California State University, Fresno; 5 years paleontology/geology experience; 8 years hazardous waste experience. Contribution: Oversight review of the Initial Site Assessment.

Rajveev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 15 years environmental technical studies experience. Contribution: Oversight review of the Water Quality Report.

Sarah Gassner, Chief, Southern Sierra Environmental Analysis Branch. B.A., Anthropology, California State University, Fresno; M.A., Cultural Resources Management, Sonoma State University; 12 years archaeological experience; 7 years cultural resource management and environmental planning experience with Caltrans. Contribution: Environmental oversight supervision.

Peter Hansen, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 1 year hazardous waste experience, 7 years paleontology/geology experience. Contribution: Oversight review of the Paleontological Evaluation Report.

Masis Kayaian, Transportation Engineer, Civil. A.S., Engineering, Fresno City College; B.S., Industrial Technology, California State University, Fresno; 9 years transportation engineering experience. Contribution: Oversight review of the hydrology studies.

Anton A. Kismetian, Transportation Engineer, Civil. B.S., Civil Engineering, California State University, Fresno; over 7 years of transportation engineering and oversight experience. Contribution: Engineering design oversight.

Zachary Parker, Senior Environmental Planner. B.S., Environmental Biology, California State University, Humboldt; 10 years wildlife biology and environmental planning experience. Contribution: Oversight review of the biological studies.

Paul Pineda, Project Manager. B.S., Civil Engineering. Contribution: Reviewed various submittals and served as a liaison between Caltrans functional units and the City of Bakersfield and its consultants.

Bill Ray, Associate Environmental Planner (Archaeology). M.A., Interdisciplinary Studies (English and Anthropology), California State University, Stanislaus; 19 years archaeology and writing experience. Contribution: Oversight review of the Historic Property Survey Report.

Philip Vallejo, Environmental Planner (Architectural History), B. A., History, California State University, Fresno; 7 years experience in architectural history field. Contribution: Oversight review of the Historic Property Survey Report.

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## **Appendix A** California Environmental Quality Act Checklist

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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.

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**AESTHETICS** - Would the project:

- |   |                          |                          |                                     |                                     |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**AGRICULTURE 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. 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 type="checkbox"/> | <input checked="" 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) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**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"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Appendix A • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

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 that exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentration?

e) Create objectionable odors affecting a substantial number of people?

**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?

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

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?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**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?

Archaeological resources are considered “historical resources” and are covered under (a).

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

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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"/>
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**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 type="checkbox"/>	<input checked="" type="checkbox"/>
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ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**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?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

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?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Be located on a site that 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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 result in a safety hazard for people residing or working in the project area?

<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 result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

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 type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**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 that 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 that would result in substantial erosion or siltation on or offsite?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 that would result in flooding on or offsite?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water 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 checked="" type="checkbox"/>	<input 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 that would impede or redirect flood flows?

<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
--------------------------------	--	------------------------------	-----------

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?

j) Result in inundation by a seiche, tsunami, or mudflow?

**LAND USE AND PLANNING** - Would the project:

a) Physically divide an established community?

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?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

**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?

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?

**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?

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

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?

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?

**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)?

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

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

**PUBLIC SERVICES -**

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Appendix A • California Environmental Quality Act Checklist

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

Parks?

Other public facilities?

**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?

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

**TRANSPORTATION/TRAFFIC -** Would the project:

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

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?

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Result in inadequate emergency access?

f) Result in inadequate parking capacity?

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

**UTILITY AND SERVICE SYSTEMS -** Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

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 determination by the wastewater treatment provider that 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"/>

**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, 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

# Appendix B Title VI Policy Statement

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

**DEPARTMENT OF TRANSPORTATION**  
OFFICE OF THE DIRECTOR  
1120 N STREET  
P. O. BOX 942873  
SACRAMENTO, CA 94273-0001  
PHONE (916) 654-5266  
FAX (916) 654-6608  
TTY (916) 653-4086



*Flex your power!  
Be energy efficient!*

January 14, 2005

## 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, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

A handwritten signature in black ink that reads "Will Kempton".

WILL KEMPTON  
Director

*"Caltrans improves mobility across California"*

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# **Appendix C** Summary of Relocation Benefits

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## ***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 Sarah Gassner at Sarah\_Gassner@dot.ca.gov, (559) 243-8243, or Southern Sierra Environmental Analysis Branch, 2015 E. Shields Avenue, Suite 100, Fresno, CA, 93726.

The brochure on the residential relocation program is also available in English at [http://www.dot.ca.gov/hq/row/pubs/residential\\_english.pdf](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](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](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](http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf).

### ***The Business and Farm Relocation Assistance Program***

For more information or a brochure on the relocation of a business or farm, please contact Sarah Gassner at [Sarah\\_Gassner@dot.ca.gov](mailto:Sarah_Gassner@dot.ca.gov), (559) 243-8243, or Southern Sierra Environmental Analysis Branch, 2015 E. Shields Avenue, Suite 100, Fresno, CA, 93726.

The brochure on the business relocation program is also available in English at [http://www.dot.ca.gov/hq/row/pubs/business\\_farm.pdf](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](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 council 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 a Department of Transportation relocation advisor at:

State of California  
Department of Transportation, District # 6  
Relocation Assistance Program  
Tower Building, 855 “M” Street, 3<sup>rd</sup> Street  
Fresno, CA, 93721

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# Appendix D Summary List of Species of Concern Potentially in the Project Area

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Sacramento Fish & Wildlife Office, Customized Species List Letter

[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_letter.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_letter.cfm)



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825



November 12, 2007

Document Number: 071112025713

Dr. John E. Moeur  
Parsons Corporation  
100 West Walnut street  
Pasadena, California 91124

Subject: Species List for Hosking Avenue/State Route 99 Interchange - New Connection Project

Dear: Dr. Moeur

We are sending this official species list in response to your November 12, 2007 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 February 10, 2008.

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 at [www.fws.gov/sacramento/es/branches.htm](http://www.fws.gov/sacramento/es/branches.htm).

Endangered Species Division



**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: 071112025713

Database Last Updated: August 16, 2007

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**Quad Lists**

Listed Species

Invertebrates

- Branchinecta lynchi*  
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*  
valley elderberry longhorn beetle (T)

Fish

- Hypomesus transpacificus*  
delta smelt (T)

Amphibians

- Rana aurora draytonii*  
California red-legged frog (T)

Reptiles

- Gambelia (=Crotaphytus) sila*  
blunt-nosed leopard lizard (E)
- Thamnophis gigas*  
giant garter snake (T)

Mammals

- Dipodomys ingens*  
giant kangaroo rat (E)
- Dipodomys nitratoides nitratoides*  
Tipton kangaroo rat (E)
- Sorex ornatus relictus*  
Buena Vista Lake shrew (E)
- Vulpes macrotis mutica*  
San Joaquin kit fox (E)

Quads Containing Listed, Proposed or Candidate Species:

GOSFORD (240D)

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**County Lists**

**Kern County**

Listed Species

Invertebrates

- Branchinecta conservatio*  
Conservancy fairy shrimp (E)
- Branchinecta longiantenna*  
Critical habitat, longhorn fairy shrimp (X)  
longhorn fairy shrimp (E)

Appendix D • Summary List of Species of Concern Potentially in the Project Area

Sacramento Fish & Wildlife Office, Species List

[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm)

*Branchinecta lynchi*  
Critical habitat, vernal pool fairy shrimp (X)  
vernal pool fairy shrimp (T)

*Desmocerus californicus dimorphus*  
valley elderberry longhorn beetle (T)

*Euproserpinus euterpe*  
Kern primrose sphinx moth (T)

Amphibians

*Ambystoma californiense*  
California tiger salamander, central population (T)  
Critical habitat, CA tiger salamander, central population (X)

*Rana aurora draytonii*  
California red-legged frog (T)  
Critical habitat, California red-legged frog (X)

Reptiles

*Gambelia (=Crotaphytus) sila*  
blunt-nosed leopard lizard (E)

*Thamnophis gigas*  
giant garter snake (T)

Birds

*Charadrius alexandrinus nivosus*  
western snowy plover (T)

*Empidonax traillii extimus*  
Critical habitat, southwestern willow flycatcher (X)  
southwestern willow flycatcher (E)

*Gymnogyps californianus*  
California condor (E)  
Critical habitat, California condor (X)

*Vireo bellii pusillus*  
Least Bell's vireo (E)

Mammals

*Dipodomys ingens*  
giant kangaroo rat (E)

*Dipodomys nitratooides nitratooides*  
Tipton kangaroo rat (E)

*Ovis canadensis californiana*  
Sierra Nevada (=California) bighorn sheep (E)

*Sorex ornatus relictus*

Appendix D • Summary List of Species of Concern Potentially in the Project Area

Sacramento Fish & Wildlife Office, Species List

[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm)

*Buena Vista Lake shrew* (E)  
*Critical habitat, Buena Vista Lake shrew* (X)

*Vulpes macrotis mutica*  
*San Joaquin kit fox* (E)

Plants

*Caulanthus californicus*  
*California jewelflower* (E)

*Eremalche kernensis*  
*Kern mallow* (E)

*Monolopia congdonii* (= *Lembertia congdonii*)  
*San Joaquin woolly-threads* (E)

*Opuntia treleasei*  
*Bakersfield cactus* (E)

*Pseudobahia peirsonii*  
*San Joaquin adobe sunburst* (T)

*Sidalcea keckii*  
*Critical habitat, Keck's checker-mallow* (X)  
*Keck's checker-mallow (=checkerbloom)* (E)

Candidate Species

Amphibians

*Rana muscosa*  
*mountain yellow-legged frog* (C)

Birds

*Coccyzus americanus occidentalis*  
*Western yellow-billed cuckoo* (C)

Mammals

*Martes pennanti*  
*fisher* (C)

**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 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.

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

*Appendix D • Summary List of Species of Concern Potentially in the Project Area*

Sacramento Fish & Wildlife Office, Species List

[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm)

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b>Astragalus hornii var. hornii</b>		
Horn's milk-vetch	Element Code: PDFAB0F421	
----- Status ----- NDDB Element Ranks ----- Other Lists -----		
Federal: None	Global: G2G3	CNPS List: 1B.1
State: None	State: S2S3.1	
----- Habitat Associations -----		
General: MEADOWS AND SEEPS, PLAYAS.		
Micro: LAKE MARGINS, ALKALINE SITES. 60-850M.		

Occurrence No. 5      Map Index: 69633      EO Index: 70407      --- Dates Last Seen ---  
 Occ Rank: Unknown      Element: 1945-06-29  
 Origin: Natural/Native occurrence      Site: 1945-06-29  
 Presence: Presumed Extant  
 Trend: Unknown      Record Last Updated: 2007-07-13

Quad Summary: Lamont (3511838/239C)  
 County Summary: Kern

Lat/Long: 35.26695° / -118.98523°	Township: 30S
UTM: Zone-11 N3904455 E319422	Range: 28E
Mapping Precision: NON-SPECIFIC	Section: 33      Qtr: XX
Symbol Type: POINT	Meridian: M
Radius: 3/5 mile	Elevation: 400 ft

Location: 1 MILE EAST OF GREENFIELD.  
 Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDDB AS A BEST GUESS ALONG PANAMA RD 1 MI DUE E OF GREENFIELD.  
 Ecological: ALKALINE SOIL.  
 Threat:  
 General: MAPPED BASED ON: 1936 YAUSSY COLLECTION FROM "1 MILE EAST OF GREENFIELD"; 1936 BENSON COLLECTION FROM "GREENFIELD"; AND 1945 RIPLEY & BARNEBY COLLECTION FROM "E OF GREENFIELD." NEEDS FIELDWORK.  
 Owner/Manager: UNKNOWN

----- Sources -----

BEN36S0003	BENSON, L. BENSON #7637 POM #275927. 1936-05-23.
RIP45S0004	RIPLEY, H. & R. BARNEBY. RIPLEY #7013 RSA #110215. 1945-06-29.
YAU36S0001	YAUSSY, L. YAUSSY SN POM #275926. 1936-04-26.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b><i>Athene cunicularia</i></b>		
burrowing owl		Element Code: ABNSB10010
----- Status ----- NDDB Element Ranks ----- Other Lists -----		
Federal: None	Global: G4	CDFG Status: SC
State: None	State: S2	
----- Habitat Associations -----		
<b>General:</b> OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
<b>Micro:</b> SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 844	Map Index: 66126	EO Index: 66205	----- Dates Last Seen -----
Occ Rank: Fair			Element: 2006-08-08
Origin: Natural/Native occurrence			Site: 2006-08-08
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2006-09-06

Quad Summary: Conner (3511921/215A)  
 County Summary: Kern

Lat/Long: 35.24870° / -119.06746°	Township: 31S
UTM: Zone-11 N3902583 E311898	Range: 27E
Mapping Precision: SPECIFIC	Section: 10 Qtr: NW
Symbol Type: POINT	Meridian: M
Radius: 80 meters	Elevation: 337 ft

Location: ABOUT 0.5 MI SOUTHEAST OF THE INTERSECTION OF ASHE RD & ENGLE RD. ABOUT 2.2 MILES SW OF PUMPKIN CENTER.

**Location Detail:**

**Ecological:** HABITAT CONSISTS OF AN UNUSED CATTLE ENCLOSURE, WITH LITTLE OR NO VEGETATIVE COVER, SURROUNDED BY CORN CROPS.

**Threat:** THREATENED BY PROPOSED DEVELOPMENT & ONGOING AGRICULTURAL PRACTICES (RODENT POISONING, CATTLE, ETC).

**General:** 4 ACTIVE BURROWS IN RELATIVELY CLOSE PROXIMITY OBSERVED ON 8 AUG 2006.

**Owner/Manager:** PVT

----- Sources -----

WIG06F0004 WIGGINS, JEREMY (MCINTOSH & ASSOCIATES). FIELD SURVEY FORM FOR ATHENE CUNICULARIA (BURROW SITE). 2006-08-08.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b>Athene cucicularia</b>		
burrowing owl		Element Code: ABNSB10010
----- Status ----- NDDB Element Ranks ----- Other Lists -----		
Federal: None	Global: G4	CDFG Status: SC
State: None	State: S2	
----- Habitat Associations -----		
<b>General:</b> OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
<b>Micro:</b> SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 883      Map Index: 67933      EO Index: 68080      Dates Last Seen  
 Occ Rank: Fair      Element: 2006-12-05  
 Origin: Natural/Native occurrence      Site: 2006-12-05  
 Presence: Presumed Extant  
 Trend: Unknown      Record Last Updated: 2007-01-29

Quad Summary: Conner (3511921/215A)  
 County Summary: Kern

Lat/Long: 35.24436° / -119.00574°	Township: 31S
UTM: Zone-11 N3901986 E317505	Range: 28E
Mapping Precision: SPECIFIC	Section: 07      Qtr: SE
Symbol Type: POINT	Meridian: M
Radius: 80 meters	Elevation: 334 ft

**Location:** 0.6 MILE EAST OF HIGHWAY 99 AND 0.45 MILE NORTH OF HOUGHTON ROAD, 5 MILES WSW OF LAMONT.  
**Location Detail:** TWO ADULTS OBSERVED WEST OF THE BURROW SITE.  
**Ecological:** HABITAT SURROUNDING BURROW CONSISTS OF AN IRRIGATION DITCH ALONG THE EDGE OF A RECENTLY-TILLED GRAIN FIELD. SOILS: KIMBERLINA, FINE SANDY LOAM. VEGETATIONS CONSISTS OF RUDERAL TO NO VEGETATION.  
**Threat:** THREATENED BY DEVELOPMENT AND AGRICULTURAL PRACTICES.  
**General:** 3 ADULTS OBSERVED ALONG AN IRRIGATION DITCH ON 5 DEC 2006; ONE ADULT WAS ASSOCIATED WITH A GROUND SQUIRREL BURROW EXHIBITING WHITEWASH AND PELLETS.  
**Owner/Manager:** PVT

**Sources**  
 WIG06F0017      WIGGINS, JEREMY (MCINTOSH & ASSOCIATES). FIELD SURVEY FORM FOR ATHENE CUCICULARIA (WINTERING BURROW SITE). 2006-12-05.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b><i>Atriplex tularensis</i></b>		
Bakersfield smallscale		Element Code: PDCHE04240
_____ Status _____	NDDDB Element Ranks	_____ Other Lists _____
Federal: None	Global: G1Q	CNPS List: 1B.1
State: Endangered	State: S1.1	
_____ Habitat Associations _____		
General: CHENOPOD SCRUB, ALKALI MEADOW.		
Micro: HISTORICALLY IN VALLEY SINK SCRUB OR WITH SALTGRASS. 90-110M.		

Occurrence No. 7      Map Index: 31463      EO Index: 2522      \_\_\_\_\_ Dates Last Seen \_\_\_\_\_  
 Occ Rank: None      Element: 1921-10-15  
 Origin: Natural/Native occurrence      Site: 1981-XX-XX  
 Presence: Extirpated  
 Trend: Unknown      Record Last Updated: 1995-06-20

Quad Summary: Lamont (3511838/239C), Gosford (3511931/240D)  
 County Summary: Kern

Lat/Long: 35.27402° / -119.00309°	Township: 30S
UTM: Zone-11 N3905271 E317813	Range: 28E
Mapping Precision: NON-SPECIFIC	Section: 31      Qtr: NE
Symbol Type: POINT	Meridian: M
Radius: 1/5 mile	Elevation: 350 ft

Location: 8.1 MILES SOUTH OF BAKERSFIELD.  
 Location Detail: VICINITY OF GREENFIELD NEAR JUNCTION OF MCKEE ROAD AND UNION ROAD (OLD HIGHWAY 99). MAPPED BASED ON INFORMATION PROVIDED BY H.M. HALL'S FIELD NOTES.  
 Ecological: ON PLAINS WITH DISTICHLIS, FRANKENIA, AND ATRIPLEX BRACTEOSA.  
 Threat:  
 General: NOW EXTIRPATED ACCORDING TO COX (1983) AND BOWEN (1984).  
 Owner/Manager: UNKNOWN

Sources	
BOW84U0001	BOWEN, C. PERSONAL COMM. CNPS WITH BOWEN REGARDING SEVERAL SPP. 1984-01-25.
COX83U0014	COX, R. TNC ELEMENT PRESERVATION PLAN. 1983-11-29.
HAL21S0001	HALL, H.M. HALL #11783 UC. 1921-10-15.
HAL21U0001	HALL, H.M. COPY OF PAGES FROM HALL'S FIELDBOOK FOR THE 1921 COLLECTIONS #11782-11790. 1921-10-15.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
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 Full Report with Sources for Selected Elements

<b>Taxidea taxus</b>		Element Code: AMAJF04010	
American badger			
----- Status -----		----- NDDB Element Ranks -----	
----- Other Lists -----			
Federal: None	Global: G5	CDFG Status: SC	
State: None	State: S4		
----- Habitat Associations -----			
<b>General:</b> MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.			
<b>Micro:</b> NEED SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREY ON BURROWING RODENTS. DIG BURROWS.			

Occurrence No. 255	Map Index: 57297	EO Index: 57313	----- Dates Last Seen -----
Occ Rank: Unknown			Element: 1900-07-XX
Origin: Natural/Native occurrence			Site: 1900-07-XX
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2004-10-07

**Quad Summary:** Lamont (3511838/239C), Oildale (3511941/240A), Oil Center (3511848/239B), Gosford (3511931/240D)  
**County Summary:** Kern

Lat/Long: 35.36480° / -119.01773°	Township: 29S
UTM: Zone-11 N3915368 E316686	Range: 28E
Mapping Precision: NON-SPECIFIC	Section: 31 Qtr: XX
Symbol Type: POINT	Meridian: M
Radius: 5 mile	Elevation:

**Location:** BAKERSFIELD.  
**Location Detail:** MAPPED ACCORDING TO LAT/LONG GIVEN BY MVZ. MAX ERROR DISTANCE: 4 MI.  
**Ecological:**  
**Threat:**  
**General:** MALE COLLECTED (MVZ #5742) BY G. G. HUNTER DURING JULY 1900.  
**Owner/Manager:** UNKNOWN

**Sources**

DFG86R0004	DEPARTMENT OF FISH AND GAME. MAMMALIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA, AMERICAN BADGER ACCOUNT. 1986-XX-XX.
MVZ04S0005	MVZ SPECIMEN DDATABASE QUERY (UC BERKELEY). PRINT-OUT OF TAXIDEA TAXUS SPECIMENS FOR CALIFORNIA FROM THE MVZ DATABASE. 2004-09-13.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b>Valley Saltbush Scrub</b>		<b>Element Code:</b> CTT36220CA	
<b>Status</b>		<b>NDDB Element Ranks</b>	
Federal: None	Global: G1	<b>Other Lists</b>	
State: None	State: S2.1		
<b>Habitat Associations</b>			
<b>General:</b>			
Micro:			

**Occurrence No.:** 18      **Map Index:** 00048      **EO Index:** 16319      **Dates Last Seen**

**Occ Rank:** Unknown      **Element:** 1987-02-06

**Origin:** Natural/Native occurrence      **Site:** 1987-02-06

**Presence:** Presumed Extant

**Trend:** Unknown      **Record Last Updated:** 1998-07-14

**Quad Summary:** Lamont (3511838/239C)  
**County Summary:** Kern

<b>Lat/Long:</b> 35.25600° / -118.97209°	<b>Township:</b> 31S
<b>UTM:</b> Zone-11 N3903215 E320593	<b>Range:</b> 28E
<b>Mapping Precision:</b> SPECIFIC	<b>Section:</b> 04 <b>Qtr:</b> SE
<b>Symbol Type:</b> POLYGON	<b>Meridian:</b> M
<b>Area:</b> 160.4 acres	<b>Elevation:</b> 340 ft

**Location:** WEST OF LAMONT, N OF DIGIORGIO RD 0.5-1.0 MI E OF COTTONWOOD ROAD.

**Location Detail:**

**Ecological:** EXACT COMPOSITION OF THIS STAND UNKNOWN.

**Threat:** PROPOSED FLOOD CONTROL PROJECT CHANNELS WILL BE REALIGNED TO AVOID IMPACTS TO THIS SITE PER DRAFT USFWS COORD RPT, 1987.

**General:** UNCULTIVATED. THIS WAS OCC #018 OF CTT36220CA.

**Owner/Manager:** UNKNOWN

**Sources**

FWS87R0001      U.S. FISH & WILDLIFE SERVICE. CALIENTE CREEK STREAM GROUP INVESTIGATION, KERN COUNTY, CALIFORNIA. DRAFT FISH AND WILDLIFE COORDINATION ACT REPORT. 1987-02-XX.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b>Vulpes macrotis mutica</b>		
San Joaquin kit fox		Element Code: AMAJA03041
----- Status ----- NDDDB Element Ranks ----- Other Lists -----		
Federal: Endangered	Global: G4T2T3	CDFG Status:
State: Threatened	State: S2S3	
----- Habitat Associations -----		
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.		
Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.		

Occurrence No. 95      Map Index: 53951      EO Index: 53951      Dates Last Seen: -----  
 Occ Rank: Unknown      Element: 2006-12-12  
 Origin: Natural/Native occurrence      Site: 2006-12-12  
 Presence: Presumed Extant  
 Trend: Unknown      Record Last Updated: 2007-05-17

Quad Summary: Gosford (3511931/240D)  
 County Summary: Kern

Lat/Long: 35.30100° / -119.05598°	Township: 30S
UTM: Zone-11 N3908363 E313063	Range: 27E
Mapping Precision: NON-SPECIFIC	Section: 23      Qtr: XX
Symbol Type: POLYGON	Meridian: M
Area:	Elevation:

Location: SW OF BAKERSFIELD, NORTH OF TAFT HIGHWAY.

Location Detail: MVZ RECORDS FROM KIT FOX RECOVERY PROJ, ESRP, CSU STANISLAUS (5446, 5747, 5752, 5633 6036, 6083, 6113, 6115, 6166, 6186, 6188, 6453, U025, U082, U090, CSUB-21). RD KILL & SIGHTINGS IN VICINITY SOMETIME 1972-75. MULTIPLE OBS 1998-2004.

Ecological: CURRENT SURROUNDING USE IS AGRICULTURE AND URBAN. SENESCENT PERENNIAL GRASSES, SALSOLA SP. SANDY SOILS. FLAT. NON-NATIVE GRASSLAND. BROMUS RUBENS, B. DIANDRUS, CYNODON SP., ERODIUM CICUTARIUM AND SALSOLA IBERICA.

Threat: URBAN DEVELOPMENT AND TRAFFIC

General: FOX/DENS OBS 1988. 88 DENS/FOXES 1989. 2 ADS/DEN MAR & JUL 2000. MVZ #206968, 206977-8, 206983, 206992, 206996-7, 207001, 207004, 207009, 207011, 207019 & 207035 COLL 1988, 1999, 2001 & 2003. 9 RD KILLS/FOXES OBS 1997-2004. 3 SALVAGED 2006.

Owner/Manager: CALTRANS ROW, UNKNOWN

Sources

BJU05R0001	BJURLIN, CURTIS D. ET AL. (CSU STANISLAUS, ESRP). URBAN ROADS AND THE ENDANGERED SAN JOAQUIN KIT FOX. 2005-07-10.
CYP07R0001	CYPHER, BRIAN (CSU STANISLAUS, ESRP). REPORT OF ACTIVITIES CONDUCTED UNDER U.S. FISH AND WILDLIFE SERVICE PERMIT TE-825573, 16 JANUARY 2006 TO 15 JANUARY 2007. 2007-01-XX.
FRE88F0005	FREAS, KATHY (CENTER FOR CONSERVATION BIOLOGY). FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA. 1988-08-28.
KIR00F0004	KIRK, MORGAN J. (CALTRANS). FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA. 2000-03-10.
MOR75M0001	MORRELL, S. H. MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX.
MVZ06S0009	MVZ. PRINT-OUT OF MVZ RECORDS FOR VULPES MACROTIS MUTICA FOR THE YEARS 2000-2003 IN KERN COUNTY. 2006-09-22.
MVZ06S0015	MUSEUM OF VERTEBRATE ZOOLOGY. PRINT-OUT OF MVZ RECORDS FOR VULPES MACROTIS MUTICA FOR KERN COUNTY, 1960-1999; DOES NOT INCLUDE NAVAL PETROLEUM RESERVES. 2006-11-07.
ZOE89F0001	ZOELICK, BRUCE W. FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA. 1989-11-27.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b><i>Vulpes macrotis mutica</i></b>		
San Joaquin kit fox		Element Code: AMAJA03041
_____ Status _____	NDDB Element Ranks	_____ Other Lists _____
Federal: Endangered	Global: G4T2T3	CDFG Status:
State: Threatened	State: S2S3	
_____ Habitat Associations _____		
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.		
Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.		

Occurrence No. 366	Map Index: 67003	EO Index: 67152	_____ Dates Last Seen _____
Occ Rank: Unknown			Element: 2004-07-XX
Origin: Natural/Native occurrence			Site: 2004-07-XX
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2007-05-09

Quad Summary: Gosford (3511931/240D)  
 County Summary: Kern

Lat/Long: 35.30549° / -119.00524°	Township: 30S
UTM: Zone-11 N3908766 E317688	Range: 28E
Mapping Precision: NON-SPECIFIC	Section: 19 Qtr: XX
Symbol Type: POLYGON	Meridian: M
Area:	Elevation: 370 ft

Location: SE OF BAKERSFIELD, S OF PACHECO ON UNION AVE.  
 Location Detail: EXACT LOCATION UNKNOWN. MAPPED IN THE GENERAL VICINITY OF LOCATION GIVEN BY MVZ: "S OF PACHECO ON UNION AVE, SE OF BAKERSFIELD"  
 Ecological:  
 Threat:  
 General: 1 JUVENILE MALE SPECIMEN (MVZ #207029) COLLECTED BY ALAN B. SHABEL (NO DATE RECORDED), KIT FOX RECOVERY PROJECT, ESRP, CSU STANISLAUS (U015). FOX DAY/NIGHT LOCATIONS DETECTED DURING SURVEY FROM MAY 1997 TO JUL 2004.  
 Owner/Manager: UNKNOWN

_____ Sources _____
BJU05R0001 BJURLIN, CURTIS D. ET AL. (CSU STANISLAUS, ESRP). URBAN ROADS AND THE ENDANGERED SAN JOAQUIN KIT FOX. 2005-07-10.
MVZ06S0016 MUSEUM OF VERTEBRATE ZOOLOGY. PRINT-OUT OF MVZ RECORDS FOR VULPES MACROTIS MUTICA BEFORE 1960 IN KERN COUNTY (DOES NOT INCLUDE NAVAL PETROLEUM RESERVES). 2006-11-07.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b><i>Vulpes macrotis mutica</i></b>		
San Joaquin kit fox		Element Code: AMAJA03041
<hr/>		
<b>Status</b>	<b>NDDB Element Ranks</b>	<b>Other Lists</b>
Federal: Endangered State: Threatened	Global: G4T2T3 State: S2S3	CDFG Status:
<hr/>		
<b>Habitat Associations</b>		
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION. Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.		

Occurrence No. 730	Map Index: 67581	EO Index: 67736	Dates Last Seen
Occ Rank: Unknown			Element: 1975-07-XX
Origin: Natural/Native occurrence			Site: 1975-07-XX
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2007-01-09

Quad Summary: Lamont (3511838/239C), Weed Patch (3511828/214B)  
 County Summary: Kern

Lat/Long: 35.25370° / -118.98765°	Township: 31S
UTM: Zone-11 N3902989 E319172	Range: 28E
Mapping Precision: NON-SPECIFIC	Section: 05 Qtr: XX
Symbol Type: POINT	Meridian: M
Radius: 2/5 mile	Elevation: 340 ft

Location: ABOUT 4.1MI W OF LAMONT ON DI GIORGIO RD.  
 Location Detail:  
 Ecological:  
 Threat:  
 General: ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.  
 Owner/Manager: UNKNOWN

Sources  
 MOR75M0001 MORRELL, S. H. MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX.

Appendix D • Summary List of Species of Concern Potentially in the Project Area

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Elements

<b><i>Vulpes macrotis mutica</i></b>		
San Joaquin kit fox		Element Code: AMAJA03041
_____ Status _____	NDDB Element Ranks	_____ Other Lists _____
Federal: Endangered	Global: G4T2T3	CDFG Status:
State: Threatened	State: S2S3	
_____ Habitat Associations _____		
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.		
Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.		

Occurrence No. 748	Map Index: 67603	EO Index: 67758	_____ Dates Last Seen _____
Occ Rank: Unknown			Element: 1975-07-XX
Origin: Natural/Native occurrence			Site: 1975-07-XX
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2007-01-09

Quad Summary: Gosford (3511931/240D)  
 County Summary: Kern

Lat/Long: 35.27075° / -119.08859°	Township: 30S
UTM: Zone-11 N3905069 E310027	Range: 27E
Mapping Precision: NON-SPECIFIC	Section: 33 Qtr: XX
Symbol Type: POINT	Meridian: M
Radius: 2/5 mile	Elevation: 350 ft

Location: ABOUT 1.1MI E OF OLD RIVER, N OF TAFT HWY.  
 Location Detail:  
 Ecological:  
 Threat:  
 General: SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.  
 Owner/Manager: UNKNOWN

\_\_\_\_\_ Sources \_\_\_\_\_  
 MOR75M0001 MORRELL, S. H. MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX.

## Appendix E Listed, Proposed Species, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

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### Listed, Proposed Species, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
San Joaquin kit fox	<i>Vulpes macrotis macrotis</i>	FE, ST	open grasslands, low perennials	HP	Vacant burrows in existing Hosking Avenue embankments
American Badger	<i>Taxidea taxus</i>	SSC	friable soils in herbaceous or perennial communities	A	Absence of distinctive burrows, long-term agricultural cultivation
Burrowing owl	<i>Athene cunicularia</i>	SSC	dry, open grassland and low-growing scrub communities	HP	Survey results; known distributions within 5 km of project area
Bakersfield smallscale	<i>Atriplex tularensis</i>	SE, CNPS 1B.1	Alkaline meadows and perennial chenopod scrub	A	Soil and moisture conditions not present in project area
Horne's milk-vetch	<i>Astragalus hornii</i> var. <i>hornii</i>	CNPS 1B.1	damp soils in meadows, alkaline playas	A	Soil and moisture conditions not present in project area
Valley Saltbush Scrub	Native ecological community		Alkaline soils	A	Soil and moisture conditions not present in project area

Source: California Natural Diversity Database; commercial version of 30 September 2007 \_\_\_\_\_

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS).

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# **Appendix F** Minimization and/or Mitigation Summary

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## ***Relocations***

The affected property owner/business would be able to find a suitable replacement site in the area. Adequate replacement properties are available both in the general vicinity and the immediate proximity to the proposed project.

Any person (individual, family, corporation, partnership, or association) who moves from real property or moves personal property from real property as a result of the acquisition of the real property, or required to relocate from the real property required for a transportation project as a result of a written notice from the California Department of Transportation is eligible for relocation assistance, including last resort housing benefits. Property owners would be compensated with fair market value for their property based on its identified highest and best use. All benefits and services would be provided equitably to all affected parties without regard to race, color, religion, or age, national origins, or disability as specified under Title VI of the Civil Rights Act of 1964. All activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

## ***Utilities/Emergency Services***

Hosking Avenue would be closed during construction. Detour routes would be described in the Traffic Management Plan. Caltrans would coordinate with the fire and police departments to ensure they were aware of road closings and detour routes.

## ***Traffic and Transportation***

Hosking Avenue would be closed during construction. Detour routes would be described in the Traffic Management Plan. The City of Bakersfield and Caltrans would coordinate with the fire and police departments to ensure they were aware of road closings and detour routes. Furthermore, the City of Bakersfield would provide transit options for pedestrians during the closure of the east-west access to Hosking Avenue over State Route 99.

During construction, a traffic management plan would help reduce traffic delays, congestion and accidents. Standard Caltrans construction practices include providing information on roadway conditions, using portable changeable message signs, publicizing lane and road closures, deploying advance warning signs, establishing alternate routes, providing reverse and alternate traffic control, and designing and following a traffic contingency plan for unforeseen circumstances and emergencies. The Caltrans Public Affairs Office would keep

the local media informed of construction progress and information pertaining to delays, closures, and major changes in traffic patterns with information provided by the resident engineer.

Under the California Vehicle Code (Sec. 21200), bike riders have the same rights as operators of motor vehicles. They cannot be excluded from traveling on a roadway during construction unless motor vehicles are also prohibited from traveling those same roadways. “Share The Road” signs within the construction area will be used to alert motorists of the potential presence of bicyclists on the roadway.

A Construction Zone Enhanced Enforcement Program may be appropriate during portions of this project. The program involves the continuous presence of the California Highway Patrol in construction zones to serve as a reminder to motorists to slow down and use caution when traveling through work areas. The Caltrans Construction Division would be consulted to determine if the program is warranted for this project.

Improvements such as sidewalks and curb ramps would be constructed to conform to the requirements of the Americans with Disabilities Act.

### ***Water Quality and Storm Water Runoff***

Although the proposed project is not expected to have a significant adverse impact on water quality or floodplains, best management practices would be implemented. During construction, a Storm Water Pollution Prevention Plan would be implemented to identify the sources of sediment and other pollutants that affect the quality of storm water discharges. The plan would describe and ensure the implementation of best management practices to reduce or eliminate sediment and other pollutants in storm water as well as non-storm water discharges.

When disturbed acreage is one acre or more, Caltrans’ National Pollutant Discharge Elimination System permit requires coordination with the regional water quality control board. Since this project would disturb more than one acre of soil, the following measures are required:

- Notification of Construction is to be submitted to the appropriate regional water quality control board at least 30 days before the start of construction.
- A Storm Water Pollution Prevention Plan is to be prepared before and implemented during construction to the satisfaction of the Caltrans resident engineer.

A Notice of Construction Completion is to be submitted to the regional water quality control board upon completion of the construction and stabilization of the site. A project would be considered complete when it meets the criteria of Caltrans' National Pollutant Discharge Elimination System permit for final stabilization.

### ***Paleontological Resources***

Project construction is anticipated to extend three to four feet below the earth's surface. Therefore, a qualified vertebrate paleontologist is required to develop a monitoring program to mitigate the impacts to nonrenewable paleontological resources.

A Paleontological Mitigation Plan would be developed by a qualified principal paleontologist prior to the start of construction that is in compliance with Caltrans paleontological mitigation guidelines. The Paleontological Mitigation Plan would not be implemented until excavation for overcrossing abutments encounter previously undisturbed strata depths greater than three to four feet below the present ground surface. Excavation of the overcrossing abutments would extend to depths of 19 to 20 feet, whereas excavation of the infiltration basin is not expected to exceed a depth greater than 5 feet and probably would not require monitoring. Earth-moving activities at such shallow depths might have a potential for encountering remains old enough to be considered fossilized. Therefore, the Paleontological Mitigation Plan would be used earlier if fossilized remains are encountered at a shallower depth.

The following measures would be conducted by the paleontological contractor selected to prepare and implement the Paleontological Mitigation Plan:

1. A qualified principle paleontologist will be retained prior to the start of construction to prepare and implement a Paleontological Mitigation Plan. The paleontologist will have a Master of Science or Doctor of Philosophy degree in paleontology or geology and will be familiar with paleontological salvage or mitigation procedures and techniques. If required, all geologic work will be performed under the supervision of a California Professional Geologist.
2. The principle paleontologist will develop a written storage agreement with a recognized museum repository regarding the permanent storage and maintenance of any fossil remains recovered under the Paleontological Mitigation Plan.
3. The principle paleontologist and/or the field supervisor will be present at a preconstruction meeting to consult with grading and excavation contractors. During the meeting, the paleontologist and/or the field supervisor will conduct an employee

- environmental awareness training session for all personnel who will be involved in earth-moving activities.
4. A paleontological monitor, under the direction of the principle paleontologist or the field supervisor, will be on site on a full-time basis to inspect new exposures created by earth-moving activities at depths greater than 3 feet below the present ground surface. Monitoring will allow for the recovery of fossil remains that might be uncovered by these activities. Monitoring could be implemented earlier only if fossilized remains were encountered at a shallower depth.
  5. If fossil remains are discovered, the monitor will recover them. If necessary, earth-moving activities at the fossil site will be halted or diverted temporarily around the site until the remains have been recovered. The paleontological monitor will be equipped to allow for the timely recovery of such remains. If necessary to reduce the potential delay of earth-moving activities, additional personnel will be assigned to the recovery of an unusually large or productive fossil occurrence.
  6. Bulk samples of fine-grained sediment will be recovered from fossiliferous or potentially fossiliferous strata and processed to allow for the recovery of microvertebrate remains. The total weight of these samples will not exceed 6,000 pounds.
  7. Fossil remains recovered under the Paleontological Mitigation Plan will be prepared to the point allowing identification, identified by knowledgeable paleontologists, curated, and cataloged in compliance with designated museum repository requirements.
  8. The entire fossil collection will be transferred to the repository for permanent storage and maintenance. Associated specimen data, corresponding geologic and geographic site data, and copies of pertinent field notes, photos, and maps will be archived at the repository and, along with the fossil specimens, will be made available to paleontologists for study.
  9. A final report of findings that summarizes the results of the work conducted under the Paleontological Mitigation Plan will be prepared by the principle paleontologist and, if required, the Professional Geologist. A copy of the report will be filed with Caltrans and at the museum repository.

### ***Hazardous Materials***

Prior to any excavation or soil disturbance within project boundaries, a project-specific Non-Standard Special Provision Lead Compliance Plan must be developed and implemented for earthwork as part of Caltrans non-standard special provisions.

The contractor would use proper health and safety measures to minimize the exposure of workers to potential asbestos-containing materials, lead-based paints, mercury or polychlorinated biphenyls from affected buildings and structures.

The demolition of water wells within the project limits must be in accordance with standards prepared by the Department of Water Resources (Bulletin 74-90) Title 23, California Code of Regulations and local regulatory standards.

### ***Air Quality***

The San Joaquin Valley Air Pollution Control District and Kern County Air Pollution Control District have specific rules covering the filing of dust control plans. For the San Joaquin Valley Pollution Control District, an Air Impact Analysis for Indirect Source Review (Rule 9510) must be submitted for evaluation of potential construction emissions of PM<sub>10</sub> and oxides of nitrogen. The Air Impact Analysis would calculate emissions resulting from only the construction phase of this project. The proposed project shall comply with San Joaquin Valley Air Pollution Control District Rule 9510 by achieving a 20 percent nitrogen oxide reduction in exhaust emissions compared to the statewide fleet average. This can be met by implementing one or more of the following measures.

- Operating equipment powered by engines that were manufactured later than 1996
- Retrofitting existing equipment with control devices (e.g., exhaust oxidation catalyst)
- Using cleaner fuels such as liquefied natural gas, compressed natural gas, or aqueous diesel fuel, as feasible
- Prohibiting truck idling in excess of 10 minutes, whenever practical
- Using only well-maintained equipment; properly planning to reduce rework and multiple handling of earth materials
- Paying a mitigation fee to the San Joaquin Valley Air Pollution Control District to obtain reductions through incentive and other programs

Most of the rest of the construction impacts to air quality are short-term in duration and would not result in adverse or long-term conditions. The following measures would reduce any air quality impacts resulting from construction activities:

- The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999). Section 7, "Legal Relations and Responsibility," address the contractor's responsibility on many items of concern, such as air pollution; use of pesticides; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 10 is directed at controlling dust.
- Applying water or dust palliative to the site and equipment frequently as necessary to control fugitive dust emissions.
- Washing trucks off as they leave the right-of-way as necessary to control fugitive dust emissions.
- Properly tuning and maintaining construction equipment and vehicles. Using low sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- Developing a special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Locating equipment and material storage sites as far away from residential and park uses as practical. Keeping construction areas clean and orderly.
- To the extent feasible, establishing environmentally sensitive areas for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Using track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on road affected by construction traffic.
- Covering all transported loads of soil and wet materials prior to transport, or providing adequate freeboard (space from the top of the material to the top of the truck) to reduce PM<sub>10</sub> and deposits of particulate during transportation.
- Removing dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- To the extent feasible, routing and scheduling construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Installing mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area.

### **Noise**

The following equipment noise control measures should be implemented to minimize noise and vibration disturbances at sensitive receptors during periods of construction:

- Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators intact and operational. Newer equipment generally runs quieter than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding, etc.).
- Use construction methods or equipment that would provide the lowest level of noise and ground vibration impact such as alternative low noise pile installation methods.
- Turn off idling equipment.
- Use temporary noise barriers and relocate them as needed, to protect homes and other sensitive locations against excessive noise from construction activities. Noise barriers can be made of heavy plywood or moveable insulated sound blankets.

The following administrative measures would be used to limit noise concerns:

- Follow a construction noise and/or vibration monitoring program in order to limit the impacts.
- Limit construction activities to daytime hours, if possible.
- Keep noise levels relatively uniform and avoid sudden or explosive noises.
- Maintain good public relations with the community to minimize objections to the unavoidable construction impacts. Provide frequent activity updates about what's going on during construction.

### **Biological Resources – Animal Species**

As American badgers no longer occupy any portion of the biological study area, no avoidance measures need be implemented during project construction. However, the following measures shall be implemented to minimize the impacts to burrowing owls.

- Schedule ground preparation after the breeding season (generally March through August), when all burrowing owl chicks in the region have fledged and are fully independent

- Survey the construction footprint before clearing and grubbing to determine whether owls have moved into the project area
- If owls are found in this survey, employ a qualified biologist to excavate the burrows and remove any owls present. The burrow, and any others found nearby, would be collapsed to preclude burrowing owls from returning back to them
- Have an authorized biologist monitor the early stages of mechanized site preparations to verify no unnoticed burrowing owl burrows remain in the construction footprint.

Protection measures for migratory birds would be included in the construction contract special provisions. If lengthy delays before construction occur, a second survey of the project site would need to be undertaken.

***Biological Resources – Threatened and/or Endangered Species***

The following measures shall be implemented to minimize the impacts to San Joaquin kit foxes:

- Schedule ground preparation between September and the end of November when kit fox pups are not likely be present in dens.
- Survey the construction footprint before clearing and grubbing to determine whether kit foxes have moved into the area.
- If kit foxes are found in this survey, employ a qualified biologist to excavate the burrows and remove any kit foxes. The burrow, and any others found nearby, would be collapsed to preclude the kit foxes from returning to them.
- Have an authorized biologist monitor the early stages of mechanized site preparations to verify no unnoticed kit fox burrows remain in the construction footprint.
- Make payment into the general Metropolitan Bakersfield Habitat Conservation Plan operating fund in accordance with the requirements of the Metropolitan Bakersfield Habitat Conservation Plan to offset all unavoidable incidental takes as may be required to evict kit foxes from dens within the construction area.
- Acquire a Section 2080.1 Permit for Threatened and Endangered Species from the California Department of Fish and Game.
- Obtain a Biological Opinion from the United States Fish and Wildlife Service.

### ***Biological Resources – Invasive Species***

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

### ***Climate Change***

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures would also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

- Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. Intelligent Transportation Systems are commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
- Landscaping reduces surface warming, and through photosynthesis, decreases carbon dioxide. The project proposes planting in the intersection slopes, drainage channels, and in areas adjacent to the roads. A variety of palms, trees, shrubs, ground cover, and native grasses will be planted. Caltrans has committed to planting vegetation and trees. Trees sequester atmospheric carbon to create beneficial greenhouse gas sinks. Tree canopy also creates a drop in paved surface temperature through shade and the cooling effect of water as it evaporates into the air from leaves through transpiration. Vegetation generally increases albedo as compared to bare earth and increase the amount of vapor in the air and rainwater retained in a location thereby adding to the cooling effect as well as increasing groundwater recharge, decreasing the amount of rainwater that is run-off into stormdrains and reducing the transport of pollutants into streams, and thus ultimately into the ocean.
- The project would incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs—or balls, in the stoplight 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 LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects C Landscaping reduces surface warming, and through photosynthesis, decreases carbon dioxide emissions.
- According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to 10 minutes in each direction; in addition, the contractor

must comply with the San Joaquin Valley Air Basin's rules, ordinances, and regulations in regard to air quality restrictions.

The following "green" practices and materials would be used in the project as part of highway planting and erosion control work:

- PVC irrigation pipe with recycled content
- Non-chlorinated high density polyethylene (HDPE) irrigation crossover conduit
- Compost and soil amendments derived from sewage sludge and green waste materials
- Fiber produced from recycled pulp such as newspaper, chipboard, cardboard
- Wood mulch made from green waste and/or clean manufactured wood or natural wood
- Native and drought tolerant seeds and plant species
- Irrigation controllers that include water conservation features
- Restricted pesticide use and reduction goals.
- Landscaping will use reclaimed water where feasible if it becomes available.

## **Appendix G** Regulatory Settings

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This appendix contains general information about laws and regulations that apply to transportation projects and the topics covered in Chapter 2 of this document.

### ***Community Character and Cohesion***

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. The Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States 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.

### ***Relocations***

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

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

### **Environmental Justice**

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Bill Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 1999, this was \$16,700 for a family of four.

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

### **Traffic and Transportation/Pedestrian and Bicycle Facilities**

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 and the Federal Highway Administration are committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public would be provided to persons with disabilities.

### **Visual/Aesthetics**

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 United States Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States 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.

Likewise, 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)]

### ***Paleontology***

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 (such as the Antiquities Act of 1906 [16 U.S. Code 431-433], Federal-Aid Highway Act of 1935 [20 U.S. Code 78]). Under California law, paleontological resources are protected by the California Environmental Quality Act, the California Administrative Code, Title 14, Section 4306 et seq., and Public Resources Code Section 5097.5.

### ***Hazardous Waste or Materials***

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 Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, 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 provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include the following:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act

- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, 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 primarily 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.

### ***Air Quality***

The Clean Air Act, as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the concentration of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), lead (Pb), and sulfur dioxide (SO<sub>2</sub>).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level,

Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20.

Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the San Joaquin Valley Air Pollution Control District and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of the project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is in “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as non-attainment areas but have recently met the standard are called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act and California Environmental Quality Act purposes.

Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the carbon monoxide standard to be violated, and in “nonattainment” areas, the project must not cause any increase in the number and severity of violations. If a known carbon monoxide or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

### **Noise and Vibration**

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

abatement and/or mitigation, however, differ between the National Environmental Policy Act and the California Environmental Quality Act.

*California Environmental Quality Act*

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the 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 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 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 criterion for residences (67 decibels) is lower than the criterion for commercial areas (72 decibels). Table F.1 lists the noise abatement criteria for use in the National Environmental Policy Act and 23 Code of Federal Regulations 772 analysis. Table F.2 shows the noise levels of typical activities.

**Table G.1 Activity Categories and Noise Abatement Criteria**

Activity Category	Noise Abatement Criteria, A-weighted Noise Level, Leq(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	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 1998

A-weighted decibels are adjusted to approximate the way humans perceive sound. Leq(h) is the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over one hour.

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

**Table G.2 Typical Noise Levels**

In accordance with 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-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the criteria.

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

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-decibel 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.

### ***Plant Species***

The U.S. Fish and Wildlife Service and California Department of Fish and Game share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. "Special-status" is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see the Threatened and Endangered Species section later in this appendix for regulatory information regarding these species.

The Plant Species section of Chapter 2 of this document discusses all the other special-status plant species, including California Department of Fish and Game fully-protected species and species of special concern, U.S. Fish and Wildlife Service candidate species, and non-listed California Native Plant Society rare and endangered plants.

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

### ***Animal Species***

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration Fisheries Service, and the California Department of Fish and Game are responsible for implementing these laws.

The section on Animal Species in Chapter 2 discusses potential impacts and permit requirements associated with wildlife 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 a separate section. All other special-status animal species are discussed under Animal Species (in Chapter 2), including California Department of Fish and Game fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1601–1603 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

### ***Threatened and Endangered Species***

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on 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 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 projects 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 Fish and Game Code.

### ***Invasive Species***

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 noxious weed list to define the invasive plants that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

### ***Cumulative Impacts***

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.

Section 15130 of the California Environmental Quality Act Guidelines 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.

### ***Climate Change under the California Environmental Quality Act***

While climate change has been a concern since at least 1988 as evidenced by the establishment of the United Nations and World Meteorological Organization’s Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years.

In 2002, with the passage of Assembly Bill 1493, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions; these regulations would apply to automobiles and light trucks beginning with the 2009-model year. Greenhouse gases related to human activity include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. 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, the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the 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, signed on October 17, 2006, further directs state agencies to begin implementing Assembly Bill 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. However, California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gases as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, U.S. Supreme Court No. 05-1120. 549 U.S. 497 (2007). Argued November 29, 2006—Decided April 2, 2007).

The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

## **List of Technical Studies that are Bound Separately**

Parsons, Draft Relocation Impact Memorandum, January 2009

Parsons, Parsons Memorandum to Caltrans, Hosking Avenue/State Route 99 Farmland Conversion Analysis, January 2009

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