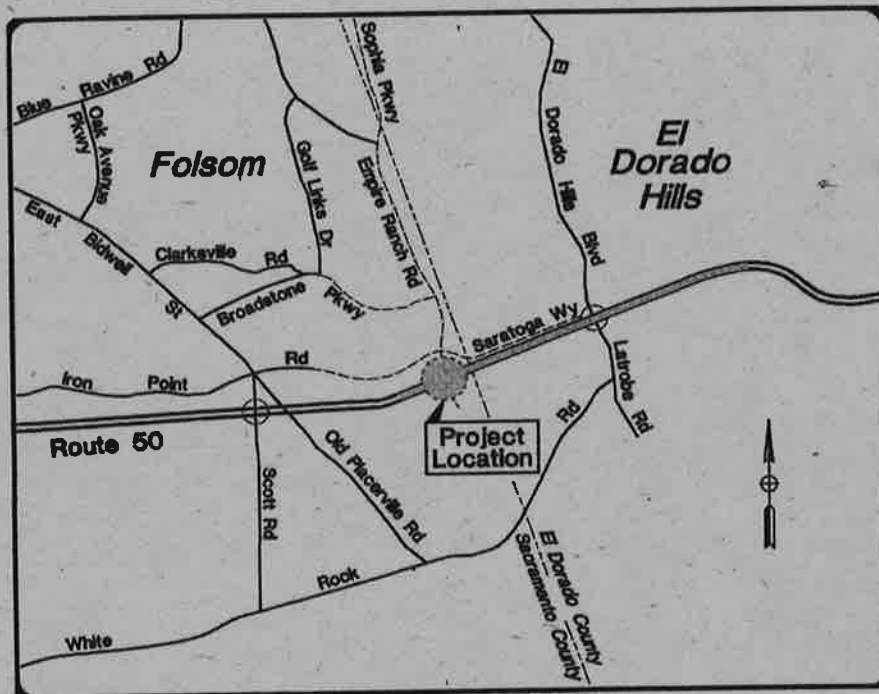


# EMPIRE RANCH ROAD/ROUTE 50 INTERCHANGE PROJECT

CITY OF FOLSOM, CALIFORNIA  
DISTRICT 3 – SAC-50, KP 35.4/37.2 (PM 22.0/23.1)  
AND ED-50-KP 0.0/1.4 (PM 0.0/0.9)  
EA# 03-1C9500

## DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT



Prepared by the  
U.S. Department of Transportation  
Federal Highway Administration  
and the  
City of Folsom, California

DECEMBER 2006



## **General Information About This Document**

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

The City of Folsom (City) and the Federal Highway Administration (FHWA) have prepared this Draft Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of the proposed Empire Ranch Road Interchange project located in the City of Folsom, Sacramento County, and El Dorado 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, the potential impacts from implementation of the proposed project, and the proposed avoidance, minimization and/or mitigation measures.

This document meets the State of California requirements of the California Environmental Quality Act (CEQA), which requires preparation of an environmental document when it has been determined that a project involving State funds or requiring State approval may result in a substantial impact on the environment.

This document also meets the federal requirements of the National Environmental Policy Act (NEPA) as implemented by the Federal Highway Administration (FHWA). Based on review of the project, FHWA has determined that the appropriate environmental document is an Environmental Assessment.

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

- Please read this Environmental Impact Report/Environmental Assessment.
- We welcome your comments. If you have any comments regarding the proposed project, please attend the Public Information Meeting and/or send your written comments via regular mail to: Gail Furness de Pardo, City of Folsom Community Development Department, 50 Natoma Street, Folsom, CA 95630. Submit comments via email to [gdepardo@folsom.ca.us](mailto:gdepardo@folsom.ca.us).
- Submit comments by the deadline: January 19th, 2007.

### ***What happens after this?***

After comments are received from the public and reviewing agencies, the City of Folsom will prepare responses to comments received on the environmental document. The City then will publish a Final EIR that includes responses to comments. Caltrans and FHWA will review the comments and prepare a Finding of No Significant Impact. After preparation of these documents, as CEQA lead agency the City may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. As NEPA lead agency, FHWA would be responsible for approving the project. If the project is approved and funding is appropriated, the City would be responsible for design and construction of the project.

For individuals with sensory disabilities, this document will be made available, upon request, in Braille, large print, audiocassette, or computer disk. To obtain a copy of one of these alternate formats, please call Della Moore at (916) 227-8185 or TTY (916) 227-8454 or write to Della Moore, Division of Engineering Services, P.O. Box 168041 Sacramento, CA 95816-8041.

# **EMPIRE RANCH ROAD/ROUTE 50 INTERCHANGE PROJECT**

CITY OF FOLSOM, CALIFORNIA  
DISTRICT 3 – SAC-50, KP 35.4/37.2 (PM 22.0/23.1)  
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## **DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT**

This document was approved for public circulation in February and March 2006 by Caltrans, the Federal Highway Administration, and the City of Folsom. Prior to circulation, this document was re-reviewed and updated to meet current conditions, guidelines, policies, and standards.



**DECEMBER 2006**



Empire Ranch Road/Route 50 Interchange Project

**DRAFT ENVIRONMENTAL IMPACT REPORT/  
ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to:

California Environmental Quality Act, Division 13, Public Resources Code  
and the National Environmental Policy Act, 42 U.S.C. 4332(2)(C)

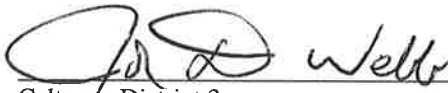
by the

U.S. Department of Transportation—Federal Highway Administration, the City of Folsom, and the California  
Department of Transportation


2/22/06  
Date of Approval

  
City of Folsom

2/27/06  
Date of Approval

  
Caltrans, District 3

3/2/06  
Date of Approval

  
Gene Fong, Division Administrator  
Federal Highway Administration  
California Division

The following persons may be contacted for additional information concerning this document:

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Division Administrator  
District Operations-Central  
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650 Capitol Mall, Suite 4-100  
Sacramento, CA 95814

**Abstract**

The City of Folsom, Caltrans and the Federal Highway Administration are proposing to construct a new interchange on Route 50 between the East Bidwell Street interchange on the west and the El Dorado Hills Boulevard interchange on the east. The purpose of the project is to improve local and regional circulation. The total estimated capital cost for the interchange is \$17.2 million. The proposed improvements to Route 50 are estimated to cost \$5.3 million. Noise abatement measures have been included for the project and mitigation has been identified for the following resources: hydrology and water quality, transportation and traffic, air quality, biological resources, and hazards and hazardous materials.



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# Summary

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## S.1 Overview of the Project Area

The City of Folsom is located at the edge of the Sierra Nevada and Central Valley of central California, approximately 20 miles east of Sacramento and approximately 85 miles west of South Lake Tahoe. State Route 50 runs east-west through the southern portion of the city, and the Route 50/Empire Ranch Road interchange lies near the eastern limits of the city and the Sacramento/El Dorado County Line. Route 50 is a major east-west regional highway connecting Sacramento and the Central Valley with Lake Tahoe and the Sierra Nevada mountains. Within the study area, Route 50 facility is six through lanes (four mixed flow, and two HOV lanes) from Folsom Boulevard to El Dorado Hills Boulevard. Route 50 carries a substantial amount of commuter traffic and recreational travel to ski resorts and Nevada casinos. Route 50 in the project area is bordered by residential development on the north and agricultural grazing land to the south. See Figures 1.1-1 and 1.1-2 in Chapter 1 for project location and vicinity maps.

Prominent features in the project area include one set of railroad tracks just west of the project near the Route 50/East Bidwell Street interchange and El Dorado Hills just east of the proposed interchange in El Dorado County.

The biotic communities present in the study area are primarily nonnative grassland, vernal marsh, and disturbed/ruderal communities. Urban/developed lands are present north of Route 50 and nonnative grassland is present south of Route 50. Several natural intermittent and ephemeral drainages flow generally north to south through the project area.

## S.2 Purpose and Need

### S.2.1 Project Purpose

The purpose of the proposed project is to provide route continuity and improve circulation in eastern Sacramento County and western El Dorado County, reduce existing and future congestion along existing roads and interchanges along Route 50, improve traffic conditions, improve safety, improve air quality by reducing overall vehicle miles of travel and vehicle hours of travel in the project area, and

accommodate anticipated travel demand through the year 2025. Specifically, the project purpose is to:

- Improve route continuity and regional east-west circulation in East Folsom and El Dorado Hills by connecting Empire Ranch Road to Route 50, which would improve circulation between East Bidwell Street and El Dorado Hills Boulevard, and improve traffic conditions along adjacent major City arterials.
- Improve traffic operations along the El Dorado Hills Boulevard/Latrobe Road and Iron Point Road corridors by reducing peak hour congestion, thereby resulting in reduced travel time along these roads.
- Improve air quality by reducing congestion and providing a more direct route to residential neighborhoods, thereby reducing vehicle miles of travel and vehicle hours of travel in the project area.
- Improve safety conditions in the project area by providing auxiliary lanes for merging and exiting traffic and by providing an additional exit to distribute traffic along the mainline.
- Improve traffic operations at the existing Route 50/East Bidwell and Route 50/El Dorado Hills Boulevard/Latrobe Road interchanges by allowing traffic to redistribute throughout the area by using the Route 50/Empire Ranch Road interchange, thereby reducing existing and projected congestion.

### **S.2.2 Project Need**

The proposed project is needed because east Folsom is currently facing traffic congestion as a result of limited access to Route 50 and its resultant inefficient energy use, deteriorating air quality and deteriorating levels of traffic safety. Providing a new connection to Route 50 by constructing the Empire Ranch Road interchange and auxiliary lanes is a component of the overall program to improve transportation in the City of Folsom, eastern Sacramento County, and western El Dorado County. To improve traffic conditions on this section of corridor, the following specific needs must be addressed:

- Reduce existing and projected traffic congestion and improve traffic safety
- Improve route continuity

- Redistribute traffic along Route 50 on the corridor section in Eastern Sacramento County and Western El Dorado County
- Reduce travel time and delay for commuter, recreational and freight movement

The project proposes to construct a new interchange on the Route 50 corridor to meet the above needs. The interchange and auxiliary lanes will improve mobility, relieve congestion, maintain trip reliability for commuter, recreational and freight movement, and enhance the overall safety for motorists using the freeway from near the Sacramento/El Dorado County line (please see Figures 1.1-1 & 1.1-2).

Traffic patterns have changed due to the urban growth of the Eastern Sacramento County/Folsom/Western El Dorado County sub region, the demand for recreational facilities in the Sierra Nevada, Nevada to the east, and the increase in daily interregional commuter traffic. Therefore, freeway improvements are required on Route 50 to address the objectives listed above in order to alleviate the problems associated with increased traffic loads on the regional transportation infrastructure.

The project would include future ramp metering, high occupancy vehicle bypass lanes on the on-ramps and California Highway Patrol enforcement areas. Chapter 1, Purpose and Need, of this document presents a detailed description of the current transportation problems in the project area and the needs that would be addressed by the project.

### **S.3 Proposed Action**

The City of Folsom (City) and the Federal Highway Administration (FHWA) propose to construct the new interchange project. The project is located on Route 50 between the East Bidwell Street interchange to the west and the El Dorado Hills Boulevard interchange to the east.

The project includes two elements which may be constructed in one or more phases:

- *Element One:* Construct a new interchange on Route 50 at Empire Ranch Road.
- *Element Two:* Construct eastbound and westbound auxiliary lanes on Route 50 between Empire Ranch Road and El Dorado Hills Boulevard, and construct a westbound auxiliary lane on Route 50 between Empire Ranch Road and East Bidwell/Scott Road.

The project includes providing ramp metering capabilities and California Highway Patrol enforcement areas on the on-ramps.

A detailed description of the proposed action is presented in Chapter 1, Section 1.3, Project Alternatives.

The environmental analysis evaluates one Build Alternative for the interchange and auxiliary lanes and the No-Build Alternative. In August 2003, the Notice of Preparation (CEQA scoping task) described the project using a range of alternatives, absent a preferred alternative. Four alternatives were identified for the interchange and two alternatives were identified for the auxiliary lanes. The project was divided into three elements. Elements 1 and 2 consisted of the proposed Route 50/Empire Ranch Road interchange, and Route 50 auxiliary lanes (eastbound and westbound between the Route 50/Empire Ranch Road interchange and Route 50/El Dorado Hills Boulevard/Latrobe Road interchange, and westbound between the Route 50/Empire Ranch Road interchange and the Route 50/East Bidwell Street/Scott Road interchange), respectively. Element 3 (mainline improvements from Route 50/El Dorado Hills Boulevard/Latrobe Road interchange east to the existing Bass Lake Grade Truck Climbing Lane on Route 50) was eliminated subsequent to determining Element 3 improvements were addressed in previous environmental documentation and had independent utility. Technical studies were then prepared for the project for Elements 1 and 2 evaluating impacts for the four interchange alternatives and two auxiliary lane alternatives.

After completion of the traffic and environmental technical studies, the Project Development Team (PDT) reviewed the four interchange alternatives for their feasibility potential based on safety concerns and traffic levels of service. At the February 25, 2004 PDT meeting, there was discussion regarding whether or not Alternatives 2 and 3, both with an eastbound loop off-ramp (a potential safety concern), could be removed from further consideration. Caltrans design staff indicated that these alternatives should be withdrawn, since Interchange Alternatives 1 and 4 satisfy the need and purpose for the project without the safety concerns associated with the loop off-ramp.

Interchange Alternative 4 was later removed from further consideration because the level of service at the intersection of Empire Ranch Road with the westbound ramps was significantly worse than the level of service of this intersection with Interchange Alternative 1. As an example, in the P.M. peak hour, this intersection operates at

LOS D with Interchange Alternative 4, but is improved to LOS B with Interchange Alternative 1. As a result of withdrawing Interchange Alternatives 2, 3, and 4 from further consideration, Interchange Alternative 1 remained the only feasible interchange alternative. This interchange alternative is the environmental superior alternative. It should be noted that, despite withdrawing Interchange Alternatives 2, 3, and 4 from further consideration, the technical Traffic Study evaluates all four interchange alternatives. Likewise, the technical studies conducted for Air Quality, Noise, Natural Environment Study and Cultural Resources include an evaluation of Interchange Alternative 4 (withdrawn alternative) in addition to Interchange Alternative 1.

The PDT also reviewed the two auxiliary lane alternatives (inside widening and outside widening alternatives) for project feasibility. The median width under the inside widening alternative would be 6.6 m, which is less than the advisory standard of 10.8 m requiring Caltrans approval of a design exception. Caltrans staff indicated they would not approve this design exception for this project. Therefore, the inside widening alternative for auxiliary lane improvements was withdrawn from further consideration. As a consequence of this decision, the outside widening alternative remained the only feasible for the auxiliary lane portion of the project. The technical studies retain analyses for both auxiliary lane alternatives (inside and outside widening).

Accordingly, this environmental document only addresses the No Project Alternative, Interchange Alternative 1, and the outside widening alternative for the auxiliary lanes.

The No-Build Alternative assumes no project. The No-Build Alternative would not satisfy the project purpose and need objectives, but is studied in accordance with the National Environmental Policy Act and the California Environmental Quality Act requirements. It offers a basis for comparison with the build alternative in the future analysis year of 2026. As a result of the potential significant impacts associated with air quality and traffic levels of service for the No Project Alternative, the proposed project is considered the environmentally superior alternative.

## **S.4 Joint California Environmental Quality Act/National Environmental Policy Act Documents**

The proposed project is subject to State review requirements under the California Environmental Quality Act. Because the City proposes using federal funds, it is also subject to federal review requirements under the National Environmental Policy Act.

One of the main differences between the State and federal requirements is the way significance is determined. Some impacts determined to be significant under the California Environmental Quality Act may not be considered significant under the National Environmental Policy Act. The national act looks at the project's potential to affect the quality of the human environment as a whole. The State, however, requires each significant effect on the environment to be identified individually, along with ways to mitigate the effect. This joint Environmental Impact Report/Environmental Assessment meets the requirements of both acts.

See Appendix A for a more detailed discussion on State requirements, the environmental effects of the proposed project found to be significant under the California Environmental Quality Act, and the proposed mitigation measures for each of these effects.

## **S.5 Project Impacts**

Based on the environmental analysis completed for this project, the Build Alternative would have lower environmental impacts than the No-Build Alternative, and thus is environmentally superior than the No-Build Alternative. The No-Build Alternative would result in substantial adverse impacts in terms of continued traffic congestion and delay in the project area. Related impacts would include continued degradation of levels of service on local roads and Route 50 and continued diversion of traffic to local streets. Energy use and air emissions would also be greater than under the build alternative. Although the build alternative would result in the loss of jurisdictional waters, mitigation is identified. In addition, impacts to wetlands/waters of the United States would be small. The project is expected to qualify for a nationwide permit under Section 404 of the Clean Water Act.

Table S.1 summarizes the environmental impacts of the build alternative and identifies the proposed avoidance, minimization, and/or mitigation measures for each impact. A detailed description of the impacts and mitigation measures for each impact category is presented in the various sections of the report.

**Table S.1 Summary of Build Alternative Impacts and Proposed Avoidance, Minimization, and/or Mitigation Measures**

<b>Impact Category</b>	<b>Build Alternative Impacts</b>	<b>Proposed Avoidance, Minimization, and/or Mitigation Measures</b>
Land Use Changes	Possible impact on seasonal grazing activities.	None required.
Consistency with Plans and Policies	Project is consistent with local plans, goals, and policies.	None required.
Growth Inducement	Project would not induce unplanned growth.	None required.
Hydrology and Water Quality	Increases in impervious surfaces. Potential pollutants from area surface runoff, particularly from "first flush" runoff. Temporary increase in siltation, sedimentation, erosion, and water turbidity (cloudiness) from construction activities.	Comply with relevant City, El Dorado County, Caltrans, and state requirements for storm water discharge. Implement Best Management Practices during construction (i.e., erosion control measures and structural treatments such as grassy swales and retention basins). Prepare a Storm Water Pollution Prevention Plan. Identify construction-period Best Management Practices to reduce impacts to waterways.
Traffic/Circulation	Temporary nighttime freeway lane, ramp, and possible local road closures or detours.	A Transportation Management Plan would be developed to provide advance notice and minimize the inconvenience and delay to motorists.
Noise	Increase in ambient noise levels in project vicinity. Noise during construction.	Comply with all local ordinances to reduce noise during construction.
Air Quality	No carbon monoxide exceedances at intersection hot spots. Project meets U.S. Environmental Protection Agency's project-level conformity criteria. Construction activities would generate dust.	Comply with Air District requirements to minimize dust during construction. Conduct field investigation for asbestos bearing materials and implement dust control during asbestos condition, plus capping with clean top material.
Vegetation and Wildlife Communities	Loss of vegetation within the project footprint. Loss of oak trees.	Avoid removal of oak trees. Mitigate per the City's tree ordinance. Time construction activities to avoid conflicts with nesting birds.
Wetlands and Other Waters of the U.S.	Loss of less than 0.5 acre of jurisdictional waters. (Exempt from City Ordinance 17.98)	Purchase seasonal wetland credits from a mitigation bank at a 2:1 ratio (for agency permitting).
Threatened and Endangered Species	Project area provides potential foraging habitat for Swainson's hawk.	Implement construction timelines in coordination with CDFG.
Cultural Resources	No known sites within area of potential effect.	Stop work if unknown, buried cultural resources discovered during construction.
Hazards and Hazardous Materials	Soils may be contaminated with aerially-deposited lead. Project area may contain naturally occurring asbestos.	Implement health and safety procedures to protect construction workers. Include provisions for a registered geologist to observe construction activities. Comply with federal, State and county requirements.

## **S.6 Environmental Issues Eliminated from Further Evaluation**

Based on the Initial Study and the comments received on the Notice of Preparation of an Environmental Impact Report/Environmental Assessment, the following environmental issues have been addressed with less evaluation or eliminated from further impact evaluation:

- Agricultural Resources
- Aesthetics
- Community Impact
- Geology and Soils
- Floodplain and Flood Hazards
- Mineral Resources
- Public Services
- Utilities and Service Systems
- Recreation
- Energy

## **S.7 Areas of Known Controversy**

An Environmental Impact Report is required to identify areas of controversy known to the lead agency, including issues raised by agencies and general public. The following areas of concern were identified through the Notice of Preparation of an Environmental Impact Report/Environmental Assessment process; however, none of these issues are considered controversial.

- Construction scheduling
- Air quality impacts relating to construction
- Water quality impacts to downstream resources
- Pedestrian and bicyclist safety

## **S.8 Issues to be Resolved**

There are no known issues to be resolved.



## S.9 Coordination with Other Agencies

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

**Table S.2 Permits and Approvals**

Agency	Permit/Approval	Status
City of Folsom	The City is funding a portion of the project and would issue encroachment and grading permits. Review and approval of project plans and specifications for work within City right-of-way.	Application for permits anticipated after final environmental document approved.
U.S. Army Corps of Engineers	The following nationwide permit for impacts to jurisdictional wetlands or other waters of the United States under Section 404 of the Clean Water Act: Nationwide permit 14 for linear transportation crossings.	Application for permit anticipated after final environmental document approved.
California Department of Fish and Game	Section 1602 Streambed Alteration Agreement.	Application for permit anticipated after final environmental document approved.
Central Valley Regional Water Quality Control Board	<ul style="list-style-type: none"> <li>• General construction activity stormwater discharge permit, notice of intent for grading activities exceeding 1 acre</li> <li>• CWA Section 401 water quality certification on the CWA Section 404 permit</li> <li>• CWA Section 402 National Pollutant Discharge Elimination System permit</li> </ul>	Consultation initiated through submittal of draft environmental document; application anticipated after final environmental document is approved.
Sacramento Metropolitan Air Quality Management District	Permit to operate construction equipment.	Consultation initiated and will continue through submittal of draft environmental document.
El Dorado County Air Quality Management District	Permit to operate construction equipment and consultation regarding naturally occurring asbestos requirements.	Consultation initiated and will continue through submittal of draft environmental document.
California Transportation Commission	Approval of a new connection to Route 50.	Application for new connection anticipated after project is approved.

The proposed interchange is consistent with both the City of Folsom's and El Dorado County's General Plans and with applicable zoning on the project site. The Empire Ranch Specific Plan and associated Environmental Impact Report identify the interchange as a necessary feature to develop and accommodate the Empire Ranch project. The City's General Plan (Circulation Element) identifies the need for an additional interchange in the project area.

The Sacramento County General Plan Circulation Element does not identify an interchange in the project area. The area south of Route 50 is located outside of the Urban Policy Area and Urban Service Boundary. The Urban Service Boundary delineates the extent of urbanization in Sacramento County. The design of the project has been coordinated with Sacramento County staff.

The project is in Amendment #1 of the 2007 MTIP, scheduled for adoption in October/November 2006.

Construction of the Empire Ranch Road Interchange and related improvements is consistent with the US 50 Corridor Major Investment Study (adopted in 1997).

### **S.10 Description of Actions in the Same Geographic Area as the Proposed Action**

The following projects are also located in the Empire Ranch Road interchange project area.

The 1993 Route 50 Corridor Plan identified the need for improving existing interchanges in the City of Folsom, in addition to constructing new interchange access to Route 50. The City and Caltrans have worked cooperatively in major interchange modification projects to the Folsom Boulevard interchange (completed in 2000), Prairie City Road interchange (completed in 1999), and East Bidwell Street interchange (completed in 2001). Empire Ranch Road and Oak Avenue interchanges are two new interchange access projects identified in the corridor plan.

Recognizing the planned development in the City and western El Dorado County, and associated transportation demands, the Sacramento Area Council of Governments, working cooperatively with the City and El Dorado County Transportation Commission, completed a Route 50 Major Investment Study in 1997. The study recommended construction of high occupancy vehicle lanes on Route 50, improved transit including light rail extension to the City and improvements to parallel facilities.

A number of transportation projects are planned or under construction within or adjacent to the project area in the Route 50 corridor. The proposed project does not conflict with any of these projects, and in fact, is consistent with the following projects which are part of a regional effort to increase the capacity of the Route 50 corridor.

**Route 50 High Occupancy Vehicle Lanes from Sunrise Boulevard to El Dorado Hills Boulevard:** Following the Route 50 Major Investment Study effort, the El Dorado County Transportation Commission prepared a Project Study Report and Subsequent Project Report/Environmental Document (State Clearinghouse #98072047) for construction of high occupancy vehicle lanes on Route 50 from Sunrise Boulevard in Sacramento County to El Dorado Hills Boulevard; these planning documents included an assumed connection to Route 50 at Empire Ranch Road. These improvements were constructed and open for traffic in 2002.

**Rancho Cordova Parkway (Sunrise Reliever) Interchange:** The City of Rancho Cordova has embarked on its first major roadway infrastructure project since becoming incorporated in 2003. Rancho Cordova, in partnership with Sacramento County, began work on the Preliminary Design Phase of the Sunrise Reliever Interchange Project in November 2004.

The future interchange located between Sunrise Boulevard and Hazel Avenue, will require right-of-way acquisition on the south side of US 50, between Sunrise Boulevard and Hazel Avenue. The interchange will provide access to US 50 via a “south only” connection to a proposed arterial street that will extend south to White Rock Road. This street will serve the traffic demand of future developments south of US 50 and relieve current traffic congestion on Sunrise Boulevard. The right-of-way for the interchange on the north side of US 50 was reserved by Sacramento County as part of the original Gold River Development. There are approximately eight acres of land available on the north side of US 50. Additional lands must be acquired on the south side of Route 50 as well.

**Route 50 High Occupancy Vehicle Lanes from El Dorado Hills Boulevard to South Shingle Road/Ponderosa Road:** Also as a follow-up to the Route 50 Major Investment Study effort, Caltrans and FHWA approved the extension of Route 50 high occupancy vehicle lanes east of El Dorado Hills Boulevard. The lanes would be built within the median and the lanes would be built in segments, from west to east. Construction is funding dependent (combination of state and local funds), anticipated no earlier than 2007. The project was approved in 2002 with an Initial Study/Mitigated Negative Declaration (State Clearinghouse Number 2002022065) and an Environmental Assessment/Finding of No Significant Impact (EA/FONSI).

At the project outset and in conjunction with distributing the Notice of Preparation of an Environmental Impact Report/Environmental Assessment, a third element

included in the Empire Ranch Road interchange project description was extending the mainline improvements further east of the El Dorado Hills Boulevard Interchange to the base of Bass Lake Grade. Referred to as Element 3 in the Initial Study, these lane improvements were proposed to extend the high occupancy vehicle (or carpool) lanes in the median between El Dorado Hills Boulevard and the Bass Lake Grade truck climbing lane. Essentially, "Element 3" of the Empire Ranch Road interchange is the westernmost portion of the Route 50 High Occupancy Vehicle lane extension east of El Dorado Hills Boulevard. However, as these improvements have already been cleared in an environmental document and have been approved by Caltrans and FHWA, discussion of Element 3 is not required in this environmental document. The design of the proposed project is consistent with the design of the high occupancy vehicle lane project.

**Route 50/El Dorado Hills Interchange Improvements:** El Dorado County has been working with Caltrans to improve this interchange. The project includes reconstructing the interchange, improving the vertical and horizontal alignment of the interchange on- and off-ramps, providing additional lanes at the intersections, and realigning Saratoga Way to intersect with Park Drive. El Dorado County Department of Transportation worked with Caltrans and FHWA in the preparation of an EA/EIR (State Clearinghouse Number 98072050). The project was approved in 2002, a Notice of Determination was posted on May 24, 2000, and a FONSI was approved on August 23, 2000. The baseline configuration for this interchange is a Type L-1 compact diamond for westbound movements (north side), and a Type L-8 partial cloverleaf for eastbound movements (south side). A series of phased improvements is proposed to accommodate increased traffic generated by existing and planned development. The phased improvements are briefly described as follows:

- Phase "0": Construct eastbound diagonal off-ramp (completed in 2001)
- Phase "1.1": Construction of sound walls to accommodate the realignment of Saratoga Way (completed in 2005).
- Phase "1.2A": Realign Saratoga Way to Park Drive (completed in 2005).
- Phase "1.2B": Improvements to the westbound on-ramp and off-ramp and improvements to El Dorado Hills Boulevard underneath Route 50 (completed in 2006).
- Phase "1.3": Construction of a westbound loop off-ramp opposite the east leg of Saratoga Way and reconstruction of the eastbound on-ramp. Replacement of the Latrobe Road Undercrossing structures to accommodate future widening of El Dorado Hills Boulevard under Route 50, as well as the extension of HOV lanes

on Route 50 east of El Dorado Hills Boulevard/Latrobe Road. (Construction anticipated in 2007).

- Phase “2”: Additional widening of El Dorado Hills Boulevard within interchange and provide additional turn lane capacity. Replace eastbound loop off-ramp (construction anticipated after 2010).

**Route 50/Silva Valley Parkway Interchange:** A Project Report and EIR for a new interchange at Silva Valley Parkway (between El Dorado Hills Boulevard and Bass Lake Road interchanges) was completed in 1991 (State Clearinghouse Number 88050215). The interchange is intended to accommodate traffic generated from approved development in El Dorado Hills. The proposed interchange would construct a partial-cloverleaf interchange about 1.5 km (0.9 mi) east of the El Dorado Hills Boulevard interchange and construct auxiliary lanes between El Dorado Hills Boulevard and Silva Valley Parkway. El Dorado County has been working with Caltrans to improve this interchange. The 2006 Metropolitan Transportation Plan shows a projected completion year of 2008. The County has initiated an addendum to the environmental document for the project so that design and construction of the interchange can commence.

**“Go California” Improvements to Eastbound Route 50:** The project proposes to restripe eastbound Route 50 to provide three lanes of traffic over the Latrobe Road undercrossing structure, before dropping down to two lanes prior to the eastbound on-ramp from El Dorado Hills Boulevard/Latrobe Road. These temporary improvements will be replaced with permanent improvements once the replacement of the Latrobe Road undercrossing structure is complete (construction expected in 2006).

**Bass Lake Grade Truck Climbing Lane:** In 1998, the El Dorado County Transportation Commission, working with Caltrans and the El Dorado County Department of Transportation, funded the Bass Lake Grade Truck Climbing Lane project. This project added one eastbound lane in the existing median from approximately 0.3 km (0.2 mi) east of the Clarksville Road Undercrossing and continuing to 0.51 km (0.32 mi) east of the Bass Lake Road Undercrossing, approximately 2.72 km (1.7 mi). This project allows the use of the eastbound outside lane as a truck-climbing lane. Construction of this project was completed in 2000.

## **S.11 Existing Environmental Documentation**

Portions of the proposed project have previously been analyzed in the following documents which are available for review during normal business hours at the City's Community Development Department, 50 Natoma Street, Folsom, California. The area covered by these planning documents is presented in Figure 1.1-2.

- Russell Ranch Specific Plan and EIR, State Clearinghouse Number 89020178
- East Area Facilities Plan and EIR, State Clearinghouse Number 90020429, City of Folsom Department of Community Development, 1992
- City of Folsom Sphere of Influence Amendment EIR, State Clearinghouse Number 97042050
- U.S. Highway 50 High Occupancy Vehicle (HOV) Lanes Project, Sunrise Boulevard to El Dorado Hills Boulevard, Initial Study/Environmental Assessment, State Clearinghouse Number 98072047
- U.S. Highway 50 High Occupancy Vehicle (HOV) Lanes Project, El Dorado Hills Boulevard to South Shingle Road/Ponderosa Road, Initial Study/Environmental Assessment, State Clearinghouse Number 2002022065
- U.S. Highway 50/El Dorado Hills Boulevard-Latrobe Road Interchange Project, EIR/Environmental Assessment, State Clearinghouse Number 98072050
- U.S. Highway 50/Silva Valley Parkway Interchange Project, EIR, State Clearinghouse Number 88050215

## **S.12 Public Outreach and Scoping Process**

The City prepared a Notice of Preparation of an EIR and an Initial Study in August 2003 and circulated these documents to the State Clearinghouse, interested individuals, agencies and groups.

A public workshop/scoping meeting was held at the City Hall on September 3, 2003. The meeting was a map display/drop-in format. A total of fourteen members of the public attended. These individuals represented property owners/residents in the northwest quadrant of El Dorado Hills Boulevard, and property owners south of Route 50. There were no objections raised to the project or related improvements, although comments were made regarding the need to study air quality impacts, plus accident data (particularly for westbound Route 50).

The City and FHWA will continue to solicit public input about the environmental impacts of the proposed project by circulating the draft environmental document for a minimum of 45 days and holding a public workshop during the review period.

After the public circulation period, all comments would be considered and the City and the Federal Highway Administration would make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act requirements, the City would certify that the project complies with the California Environmental Quality Act, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for any impacts that would not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations, if required, have been considered prior to project approval. After project approval, the City would then file a Notice of Determination with the State Clearinghouse that would identify whether the project would have significant impacts, mitigation measures that were included as conditions of project approval, findings that were made, and whether a Statement of Overriding Considerations was adopted. If the Federal Highway Administration determines that the action does not significantly affect the environment, the Federal Highway Administration would issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

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## **List of Technical Studies Bound Separately**

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• Noise Impact Analysis

• Air Quality Analysis

Natural Environment Study Report

• Preliminary Geotechnical Report

• Preliminary Environmental Site Assessment

Historic Property Survey Report

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**List of Abbreviated Terms**

Ac	Acre
ACOE	Army Corps of Engineers
Alt	Alternative
APN	Assessor's Parcel Number
AQAP	Air Quality Attainment Plan
Basin Plan	Central Valley RWQCB Basin Plan
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practice
BSA	biological study area
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
City	City of Folsom
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
COZEEP	Construction Zone Enhanced Enforcement Program
CTC	California Transportation Commission
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibels
dbh	diameter at breast height
DOT	Department of Transportation
EA	Environmental Assessment
EB	eastbound
EDCAQMD	El Dorado County Air Quality Management District
EDCTC	El Dorado County Transportation Commission
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
F	Fahrenheit
FCAA	federal Clean Air Act
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
ft	foot/feet
FTA	Federal Transit Administration
H	height
Ha	hectare
H <sub>2</sub> S	hydrogen sulfide
HCP	habitat conservation plan

HCS	Highway Capacity Software
HOV	high occupancy vehicle
Hz	hertz
IS	Initial Study
ITS	Intelligent Transportation System
kHz	kilo Hertz
Km	kilometer
Km/hr	kilometers per hour
LAFCO	Local Agency Formation Commission
$L_{eq}$	equivalent sound level
$L_{max}$	maximum sound level
LOS	level of service
$L_x$	percentile-exceeded sound level
m	meter(s)
MCAB	Mountain Counties Air Basin
Mi	mile
MIS	Major Investment Study
mph	miles per hour
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NC	Annual Nitrogen Dioxide (NO <sub>2</sub> ) not calculated
NEPA	National Environmental Policy Act
NESR	Natural Environment Study Report
NM	fine suspended particulate matter not monitored
N/m <sup>2</sup>	micro-Newton per square meter
NO <sub>2</sub>	nitrogen dioxide
NOA	naturally occurring asbestos
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NO <sub>x</sub>	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NWP	Nationwide Permit
O <sub>3</sub>	ozone
Pb	Lead
P-C	Porter-Cologne Water Quality Act
PDT	Project Development Team
Phf	peak hour factor
PM <sub>10</sub>	particulate matter less than 10 microns
PM <sub>2.5</sub>	particulate matter less than 2.5 microns
ppm	parts per million
PR	Project Report
ROG	reactive organic compounds

Route 50	U.S. Highway 50, State Route 50, U.S. 50
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SHPO	State Historic Preservation Officer
SIP	State Implementation Plans
SMAQMD	Sacramento Metropolitan Air Quality Management District
SOI	Sphere of Influence
SOLA	Sphere of Influence Amendment
SO <sub>2</sub>	sulfur dioxide
SPL	sound pressure level
STAA	Surface Transportation Assistance Act
SVAB	Sacramento Valley Air Basin
SW	sound wall
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TASAS	Traffic Accident Surveillance and Analysis System
TAZ	traffic analysis zone
TMP	Transportation Management Plan
µg/m <sup>3</sup>	micrograms per cubic meter
µPa	Micro Pascal
vphpl	Vehicles per hour per lane
vplph	vehicles per lane per hour
WB	westbound

# Chapter 1. Proposed Project

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## 1.1. Introduction

The City of Folsom (City), and the Federal Highway Administration (FHWA), propose to construct a new interchange on State Route 50 (Route 50 or Highway 50) in the City of Folsom near the Sacramento County/El Dorado County line between the existing East Bidwell Street/Scott Road interchange to the west and the El Dorado Hills Boulevard interchange to the east. The project includes construction of eastbound and westbound auxiliary lanes between Empire Ranch Road and El Dorado Hills Boulevard, as well as a westbound auxiliary lane between Empire Ranch Road and East Bidwell Street/Scott Road. The project limits on Route 50 are from Kilometer Post 35.4 (Post Mile 22.0) to just east of the Route 50/El Dorado Hills Boulevard interchange at Kilometer Post 1.4 (Post Mile 0.9). The northern project limit is the intersection of Empire Ranch Road with Iron Point Road, and the southern project limit is the cul-de-sac associated with the interchange ramps. The project is proposed to reduce existing traffic congestion and improve safety, improve traffic operations and accommodate travel demand anticipated through the year 2026. Figure 1.1-1 shows the project location, while Figure 1.1-2 shows the project vicinity (all figures are located at the end of this chapter).

The proposed project includes the following elements that are described in detail in section 1.3, Alternatives:

- *Element One:* Construct a new interchange along Route 50 at Empire Ranch Road.
- *Element Two:* Construct eastbound and westbound auxiliary lanes on Route 50 between Empire Ranch Road and El Dorado Hills Boulevard, as well as a westbound auxiliary lane between Empire Ranch Road and East Bidwell Street/Scott Road.

The new interchange site is located in southeastern Folsom in eastern Sacramento County. Route 50 is the dividing line between the City of Folsom on the north and unincorporated Sacramento County on the south. The area north of the freeway is part of the Empire Ranch development (formerly the Russell Ranch development) and is rapidly urbanizing. The area south of the freeway is in the City's sphere of influence and may be annexed to the City sometime in the future; however, for the purposes of



this project, the area south of the freeway is considered rural and there are no plans to develop in this area.

The area to the south of the proposed interchange is outside the Sacramento County Urban Service Boundary. Sacramento County General Plan Policy LU-58 states, "The County shall maintain an Urban Service Boundary that defines the long-range plans (beyond twenty years) for urbanization and extension of public infrastructure and services, and defines important areas for protection as open space and agriculture." Sacramento County does not have any current plans to urbanize land south of Route 50. In addition, the area south of Route 50 is within Sacramento County's South Sacramento Habitat Conservation Plan (HCP) study area.

The City and western El Dorado County have been experiencing rapid growth. Between 1993 and 2000, traffic volumes on Route 50 within the project limits have increased by an average of 5.4% per year. This increased traffic growth has resulted in peak hour congestion on Route 50 and several local arterials in the area.

In the early 1990s, several land use proposals were developed for the Folsom "East Area". Projects in the "East Area" included Empire Ranch (formerly known as Russell Ranch), Broadstone Master Plan, The Parkway, and The Promontory (in El Dorado County). As part of the preliminary planning process for these proposals, the City prepared the Route 50 Corridor Plan (Fehr & Peers Associates 1993), which identified the need for improvements to the Folsom Boulevard, Prairie City Road, and East Bidwell Street Interchanges, plus the construction of two new interchanges at Oak Avenue and Empire Ranch Road (then known as Russell Ranch Road). Also as part of the study, there were recommendations for major City arterial facilities parallel to Route 50.

Empire Ranch is a 1,738-acre community, primarily residential uses, located on the east side of Folsom immediately west of the El Dorado County line and north of Route 50; this development was part of the overall East Area planning effort for the City referenced above. The Empire Ranch Specific Plan was approved in 2000. The East Area Facilities Plan, which identifies infrastructure necessary for buildout of the various developments noted above, included the Empire Ranch Road interchange at Route 50. A Project Study Report (Project Development Support) was prepared for the Empire Ranch Road Interchange, and approved by Caltrans on April 2, 2002.

## **1.2. Purpose and Need**

The purpose of and need for this proposed action are discussed below. The “purpose of” and “need for” a proposed action are closely linked, but subtly different. Need may be thought of as a specific problem, and the purpose as an intention to solve the problem.

### **1.2.1 Project Purpose**

The purpose of the proposed project is to provide route continuity and improve circulation in eastern Sacramento County and western El Dorado County, reduce existing congestion, improve traffic operations, improve safety, improve air quality and accommodate anticipated travel demand through the year 2026 on Route 50. Specifically, the project purpose is to:

- Improve route continuity and regional east-west circulation in East Folsom and El Dorado Hills by connecting Empire Ranch Road to Route 50, which would improve circulation between East Bidwell Street and El Dorado Hills Boulevard, and improve traffic conditions along adjacent major City arterials.
- Improve traffic operations along the El Dorado Hills Boulevard/Latrobe Road and Iron Point Road corridors by reducing peak hour congestion, thereby resulting in reduced travel time along the these roads.
- Improve air quality by reducing congestion and providing a more direct route to residential neighborhoods, thereby reducing vehicle miles of travel and vehicle hours of travel in the project area.
- Improve safety conditions in the project area by providing auxiliary lanes for merging and exiting traffic and by providing an additional exit to distribute traffic along the mainline.
- Improve traffic operations at the existing Route 50/East Bidwell and Route 50/El Dorado Hills Boulevard/Latrobe Road interchanges by allowing traffic to redistribute throughout the area by using the Route 50/Empire Ranch Road interchange, thereby reducing existing and projected congestion.

## **1.2.2 Project Need**

The project is needed because east Folsom is currently facing traffic congestion as a result of limited access to Route 50 and its resultant inefficient energy use, deteriorating air quality and deteriorating levels of traffic safety. Providing a new connection to Route 50 by constructing the Empire Ranch Road interchange and auxiliary lanes is a component of the overall program to improve transportation in the City of Folsom, eastern Sacramento County, and western El Dorado County. To improve traffic conditions on this section of corridor, the following specific needs must be addressed:

- Reduce existing and projected traffic congestion and improve traffic safety
- Improve route continuity
- Redistribute traffic along Route 50 on the corridor section in eastern Sacramento County and western El Dorado County
- Reduce travel time and delay for commuter, recreational and freight movement

The project proposes to construct a new interchange on the Route 50 corridor to meet the above needs. The interchange and auxiliary lanes will improve mobility, relieve congestion, maintain trip reliability for commuter, recreational and freight movement, and enhance the overall safety for motorists using the freeway from near the Sacramento/El Dorado County line (please see Figures 1.1-1 & 1.1-2).

Traffic patterns have changed due to the urban growth of the West El Dorado County sub region, the demand for recreational facilities in the Sierra Nevada, Nevada to the east, and the increase in daily interregional commuter traffic. Therefore freeway improvements are required on Route 50 to address the objectives listed above in order to alleviate the problems associated with increased traffic loads on the regional transportation infrastructure.

### **1.2.2.1. Reduce Existing and Projected Traffic Congestion and Improve Traffic Safety**

Level of service at intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. Level of Service A represents no delay and Level of Service F represents very heavy traffic congestion and considerable delay. Level of Service F often occurs with over-saturation (when the rate of vehicles arriving exceeds the capacity of the intersection). Figures 1.1-3 through 1.1-6 at the end of this chapter illustrate what is meant by level

of service with regard to unsignalized intersections, signalized intersections, multi-lane highways, and freeways.

Traffic operations were analyzed at the proposed Route 50/Empire Ranch Road interchange location during the a.m. and p.m. peak hours. Table 1.2-1 summarizes the a.m. and p.m. peak hour LOS at the Route 50/Empire Ranch Road interchange. As shown in the table, Route 50 mainline segments between East Bidwell Street and Bass Lake Road operate unacceptably at LOS F in the peak directions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour).

**Table 1.2-1: Freeway Mainline LOS - Existing Conditions**

Freeway Mainline Segment	AM Peak		PM Peak	
	V/C <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>1</sup>	LOS <sup>2</sup>
Route 50 Eastbound: East Bidwell Street to El Dorado Hills Boulevard	0.51	C	<u>F</u> <sup>3</sup>	
Route 50 Eastbound: El Dorado Hills Boulevard to Bass Lake Road	0.38	B	<u>&gt;1.00</u>	<u>F</u>
Route 50 Westbound: Bass Lake Road to El Dorado Hills Boulevard	<u>F</u> <sup>3</sup>		0.46	B
Route 50 Westbound: El Dorado Hills Boulevard to Bass Lake Road	<u>F</u> <sup>3</sup>		0.47	B

Notes:  
<sup>1</sup> V/C is the volume to capacity ratio.  
<sup>2</sup> Level of Service (LOS) based on the El Dorado County General Plan.  
<sup>3</sup> LOS F was identified at these locations based on the 2002 Congestion Report (Caltrans District 3, December 2002).  
**Bold and underlined** font indicates unacceptable operations.

Source: Fehr & Peers 2003

The El Dorado Hills Boulevard/Latrobe Road interchange is operating at an unacceptable level of service (e.g., LOS F) that will be exacerbated with future growth as documented within the project study report document to reconstruct the interchange. As shown in Table 1.2-2, it is estimated that construction of the proposed Empire Ranch Road project would result in a reduction of ramp volumes of approximately 2 percent from the El Dorado Hills Boulevard/Latrobe Road interchange and 25 percent from the East Bidwell Street interchange. Overall, the Empire Ranch Road interchange ramps would be expected to carry approximately 21 percent of the total ramp volumes across the three interchanges under Build year conditions. As Table 1.2-2 indicates, the volume of traffic at all three interchanges would increase by 1,150 vehicles during the a.m. peak hour and 850 vehicles during the p.m. peak hour under Build year conditions when compared to No Build

conditions. This increase is due to the anticipated redistribution of El Dorado Hills traffic currently using Blue Ravine Road to the Folsom Boulevard interchange for mainline access. With the proposed Empire Ranch Road interchange in place, traffic will be redirected to Route 50 in the project area by allowing local traffic access to the current and planned developments off of Empire Ranch Road, rather than accessing Route 50 from the existing area interchanges.

**Table 1.2-2: Ramp Volume Comparison – Construction Year Conditions  
No Build and Build Alternative**

Ramps		No Build Alternative		Build Alternative	
		AM	PM	AM	PM
Eastbound Off-ramp	East Bidwell Street	630	440	630	420
	Empire Ranch Road	0	0	90	280
	El Dorado Hills Boulevard	1,670	2,090	1600	2070
	<b>Total</b>	<b>2,300</b>	<b>2,530</b>	<b>2,320</b>	<b>2,770</b>
Eastbound On-ramp	East Bidwell Street	1,280	1,570	940	1000
	Empire Ranch Road	0	0	610	790
	El Dorado Hills Boulevard	400	1,110	380	1070
	<b>Total</b>	<b>1,680</b>	<b>2,680</b>	<b>1,930</b>	<b>2,860</b>
Westbound Off-ramp	East Bidwell Street	1,310	1,240	720	810
	Empire Ranch Road	0	0	970	640
	El Dorado Hills Boulevard	1,040	510	1030	480
	<b>Total</b>	<b>2,350</b>	<b>1,750</b>	<b>2,720</b>	<b>1,930</b>
Westbound On-ramp	East Bidwell Street	510	430	470	430
	Empire Ranch Road	0	0	430	250
	El Dorado Hills Boulevard	1,990	1,730	2010	1680
	<b>Total</b>	<b>2,400</b>	<b>2,110</b>	<b>2,910</b>	<b>2,360</b>
All Ramps	East Bidwell Street	3,630	3,630	2,760	2,660
	Empire Ranch Road	0	0	2,100	1,960
	El Dorado Hills Boulevard	5,100	5,440	5,020	5,300
	<b>Total</b>	<b>8,730</b>	<b>9,070</b>	<b>9,880</b>	<b>9,920</b>

Source: Fehr & Peers 2003

Table 1.2-3 shows a summary of a three-year traffic accident history on Route 50 between East Bidwell Street and El Dorado Hills Boulevard in the project vicinity. The accident database maintained by Caltrans is the source for this information.

**Table 1.2-3: Route 50 Accident History - 2001 through 2004**

Location	Total Accidents	Total Fatalities	Actual Accident Rate <sup>1</sup>	Average Accident Rate <sup>1</sup>
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	145	1	<b><u>1.52</u></b>	0.55
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	70	0	<b><u>0.73</u></b>	0.55

Notes: <sup>1</sup> per million vehicles

**Bold and underline** indicates that the actual accident rate on this segment is greater than the average accident rate for similar facilities.

Source: Fehr & Peers 2003; Caltrans District 3 TASAS Table B, April 2001 to March 2004

The above table shows that the actual accident rate on eastbound Route 50 in the vicinity of the proposed interchange is nearly three times the average accident rate for similar freeway facilities. In the three-year data collection period, 145 accidents occurred on eastbound Route 50 with one fatality. Seventy accidents occurred on westbound Route 50 with no fatalities, but with a higher-than-average accident rate. Table 1.2-4 categorizes the recorded accidents by type.

**Table 1.2-4: Route 50 Accident History - Number of Accidents by Type**

Location	Accident Type				Total
	Rear End	Hit Object	Side-swipe	Other <sup>1</sup>	
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	110 (76%)	11 (8%)	16 (11%)	8 (5%)	145
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	32 (46%)	19 (27%)	7 (10%)	12 (17%)	70

Notes: <sup>1</sup> Other includes broadside, head-on, and over-turn collisions.

Source: Fehr & Peers and Caltrans District 3 TASAS Table B, April 2001 to March 2004

As shown in Table 1.2-4, the most frequent type of accident on eastbound Route 50 in the project vicinity is rear-end collisions (76 percent). A high frequency of rear-end accidents is consistent with the stop-and-go peak direction traffic conditions that exist along this section of Route 50. Rear-end collisions were also the most frequent type of accident on westbound Route 50 (46%), with hit objects being the second most frequent type of accident (27%).

Although additional vehicles will enter Route 50 at the proposed Empire Ranch Road Interchange as a result of redirecting traffic from the other Route 50 interchange, the accident rate is expected to improve. Improvement in the accident rate is anticipated

by providing motorists with acceleration and deceleration on the offramps and onramps, as well as providing auxiliary lanes for traffic exiting and entering Route 50. These improvements remove motorists from the mainline traffic flow and away from the accident potential.

As populations increase in the City of Folsom, El Dorado Hills, and El Dorado County, there will also be an increase in long distance commuting since downtown Sacramento and Sacramento County will continue to remain large employment centers. The characteristics of this development suggest increased congestion, prolonged travel times, and more accidents.

#### **1.2.2.2. Improve Route Continuity**

Route 50 is listed as a high priority route in the 1992 Caltrans District 3 System Management Plan. The Caltrans Route 50 Transportation Concept Report reflects the proposed Empire Ranch Road interchange, and shows the mainline concept facility as follows:

- Hazel Avenue to Sacramento County line: Concept of six lanes, including high occupancy vehicle (HOV) lanes, with ultimate of eight lanes including HOV lanes.
- Sacramento County line to east of the project limits: six-lane freeway with consideration of HOV lanes to Silva Valley Parkway Interchange. Ultimate facility is eight lanes with HOV lanes to west of Placerville, to be implemented concurrent with demand.

With the development of the 1993 City of Folsom General Plan Update, the City, and Caltrans identified the need for parallel capacity to Route 50. In particular, Iron Point Road was identified as a six lane arterial from Folsom Boulevard to El Dorado Hills Boulevard. Additional points of access to Route 50 were proposed as part of the General Plan process; Empire Ranch Road was one of the new interchange connections noted. Empire Ranch Road interchange provides a means of access to the newer developments and to access the parallel route (Iron Point Road).

The above listed improvements will provide congestion relief by increasing capacity due to the growth in local and regional traffic occurring along Route 50. The interchange is anticipated to work in conjunction with these other improvements to help alleviate congestion at the project location, and ultimately along the corridor, as

well as improve safety by redistributing the current traffic that heavily use other interchanges in the vicinity.

### **1.2.2.3. Redistribute Traffic along Route 50 and at the Route 50 Interchanges**

Implementation of the proposed action would provide a new connection to Route 50, thereby providing for redistribution of on-ramp/off-ramp traffic, and providing improvement of mainline operations between East Bidwell Street and El Dorado Hills.

Current mainline segments on Route 50 between East Bidwell Street and Bass Lake Road operate unacceptably at level of service F in the peak directions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour). Although the project will not alleviate all LOS F conditions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour), it will alleviate heavy use of existing interchanges and operational problems associated local access points. In addition, the State Route 50 Transportation Concept Report (Caltrans, District 3, April 1998) anticipates and has adopted a LOS F as the route concept LOS for Route 50 within the project vicinity.

### **1.2.2.4. Improve System Reliability for Commuter, Recreational and Freight Movement**

During the past several years, population and employment growth in the eastern portions of Sacramento County and the western portion of El Dorado County have substantially increased travel demand on Route 50. Specifically, increases in commute travel volumes arise from the growing communities of Folsom, El Dorado Hills, Bass Lake, Cameron Park, and Shingle Springs, which serve as residential communities to employment centers in Folsom, Rancho Cordova, and downtown Sacramento. Interregional travel demand associated with year-round recreational areas east of the project vicinity in the Lake Tahoe Basin, have also contributed to increased traffic.

The capacity of Route 50 has not increased proportionately with travel demand. According to the Metropolitan Transportation Plan (MTP) for 2027 (Sacramento Area Council of Governments 2006), the population and employment of the Sacramento region is projected to increase substantially by 2027. The City and western El Dorado County will share in this growth. The Sacramento Area is projected to add 77,880 new residents and 400,000 new jobs between 2000 and 2027. This amount of growth



represents a 37 percent increase in population and a 39 percent increase in employment. With the anticipated growth in traffic along this corridor, operational performance will continue to decline in the years to come.

Traffic operations for the freeway mainline segments and ramp junctions are shown in Table 1.2-5. As shown, overall traffic operations on Route 50 would improve but would continue to operate unacceptably at LOS E or F in westbound direction during the a.m. peak hour within the study area.

The proposed project affects the mainline as follows:

- In general, the combination of an additional interchange to distribute ramp volumes among interchanges, plus the auxiliary lanes between Empire Ranch Road and El Dorado Hills Boulevard (and a westbound auxiliary lane segment west of the Empire Ranch Road interchange), improves operations on Route 50 between El Dorado Hills and Empire Ranch Road.
- Because the new interchange will attract some traffic that otherwise would use East Bidwell Street, the volumes between Empire Ranch Road and East Bidwell Street are increased, and traffic operations are not improved substantially between these two interchanges.

The proposed interchange and improvements to Route 50 will result in mainline levels of service generally consistent with the Transportation Concept Report.

#### **1.2.2.5. Decrease Travel Time with Reduced Commuter Traffic in Residential Neighborhoods**

Past physical and circulation limitations within the project vicinity (e.g., Folsom/El Dorado Hills communities) have resulted in traffic overloading of Route 50 and the El Dorado Hills Boulevard/Latrobe Road and Route 50 Interchange. To access El Dorado Hills and residential villages north of Green Valley Road, Route 50 bound motorists are required to utilize the El Dorado Hills Boulevard/Latrobe Road and Route 50 Interchange to access El Dorado Hills Boulevard, and ultimately residential villages/neighborhoods near Green Valley Road.

**Table 1.2-5: Freeway Mainline LOS – Construction Year  
No Build and Build Alternative**

Freeway Sections	AM Peak		PM Peak	
	V/C <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>1</sup>	LOS <sup>2</sup>
<b><i>No Build</i></b>				
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	0.62	C	<b><u>1.10</u> **</b>	<b><u>F</u> **</b>
Eastbound Route 50: El Dorado Hills Boulevard to Bass Lake Road	0.42	B	<b><u>1.09</u> **</b>	<b><u>F</u> **</b>
Westbound Route 50: Bass Lake Road to El Dorado Hills Boulevard	<b><u>1.05</u> **</b>	<b><u>F</u> **</b>	0.51	C
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	<b><u>1.10</u></b>	<b><u>F</u></b>	0.59	C
<b><i>Build Alternative</i></b>				
Eastbound Route 50: East Bidwell Street to Empire Ranch Road	0.36	B	0.64	D
Eastbound Route 50: Empire Ranch Road to El Dorado Hills Boulevard	0.52	C	0.86	D
Eastbound Route 50: El Dorado Hills Boulevard to Bass Lake Road	0.39	B	0.87	D
Westbound Route 50: Bass Lake Road to El Dorado Hills Boulevard	<b><u>1.05</u> **</b>	<b><u>F</u> **</b>	0.51	C
Westbound Route 50: El Dorado Hills Boulevard to Empire Ranch Road	0.88	D	0.47	B
Westbound Route 50: Empire Ranch Road to East Bidwell Street	0.79	D	0.41	B
Notes:				
<sup>1</sup> V/C is the volume to capacity ratio.				
<sup>2</sup> LOS calculations for mainline operations based on the El Dorado County General Plan.				
<b><u>Bold and underlined</u></b> font indicates unacceptable operations.				
Double asterisks (**) denote that the expected LOS would be worse than the calculated LOS shown in the table due to downstream LOS F conditions propagating upstream.				

Source: Fehr & Peers 2003

Recent local roadway improvements have removed some of the limitations thus assisting in improving the region's traffic distribution burden. Specifically, a new roadway (Sophia Parkway) recently opened for use along the Folsom/El Dorado County boundary provides an alternative north-south facility to El Dorado Hills Boulevard. Sophia Parkway connects with Green Valley Road to the north, then extends south through the Empire Ranch community, eventually tying into Empire Ranch Road. Motorists can access Sophia Parkway/Empire Ranch Road through Folsom, and from Iron Point Road adjacent to Route 50 at the East Bidwell/Route 50 Interchange. With the proposed project (Empire Ranch Road/Route 50 Interchange)

in place, the Sophia Parkway to Green Valley Road option will provide substantial relief to the El Dorado Hills Boulevard/Latrobe Road and Route 50 Interchange.

With the additional connections and associated redistribution of traffic, there is regional benefit in reduced travel time. One quantitative measure of the area-wide benefits of a new interchange is the change in total travel distance and travel time. Table 1.2-6 below summarizes the percent change in Design Year Conditions vehicle miles of travel (VMT) and vehicle hours of travel (VHT) at a local-area, sub-regional and regional level. The boundaries for these areas are described below:

- *Local-Area* – includes the area bounded by Riley Street (in Folsom) and Serrano Parkway (in El Dorado Hills) to the north, Route 50 to the south, Silva Valley Road to the east, and Oak Avenue Parkway to the west.
- *Sub-Region* – includes the area bounded by Natoma Street and Green Valley Road to the north, White Rock Road to the south, Silva Valley Road to the east, and Folsom Boulevard to the west.
- *Regional* – includes portions of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties (essentially the entire area covered in the 2006 version of the 2027 SACMET travel demand forecasting model).

**Table 1.2-6 Percent Change in VMT and VHT – Design Year Conditions  
No Build and Build Alternative**

Performance Measure	No Build	Build Alternative	Percent Difference
<b>Local-Area</b>			
VMT	1,048,600	1,057,100	0.81%
VHT	28,860	28,770	-0.30%
<b>Sub-Regional</b>			
VMT	2,457,200	2,466,500	0.38%
VHT	72,700	72,710	0%
<b>Regional</b>			
VMT	65,666,100	65,715,300	0.07%
VHT	1,842,650	1,841,980	-0.04%
Notes: VMT – Vehicle Miles of Travel VHT – Vehicle Hours of Travel			

Source: Fehr & Peers 2004

As shown, the proposed project will slightly increase the total VMT at the local-area level, while the total VHT is reduced. This indicates the project may result in travel

routes with a slightly longer distance; however, the project will provide time savings as these routes will have reduced travel times.

The proposed project will result in a smaller reduction in total VHT on a regional scale compared to the local-area scale. The slight change in regional VMT indicates the proposed project is only a small part of the regional network (i.e., the six-county area). However, the reduction in VHT is measurable even on a regional scale, suggesting this relatively minor connection (compared to total regional lane miles) is being located in a significantly congested location, and this connection is providing regional benefits.

### **1.2.3 Project Background**

#### **Existing Facilities**

Route 50 in the project area is a divided freeway, constructed in 1965, and widened in 2000/02. The facility is six through lanes (four mixed flow, and two high occupancy vehicle lanes) from Folsom Boulevard to El Dorado Hills Boulevard. The high occupancy vehicle lanes on Route 50 were constructed in 2002, beginning at Sunrise Boulevard and ending near El Dorado Hills Boulevard. From this point, Route 50 is made up of two eastbound lanes and two westbound lanes to the Bass Lake Grade east of El Dorado Hills Boulevard. Within the project vicinity, there are two existing and two planned interchanges. The existing interchanges are a partial cloverleaf interchange at East Bidwell Street and a modified interchange at El Dorado Hills Boulevard. The two planned interchanges are at Empire Ranch Road (i.e., proposed project), and at Silva Valley Parkway, which is planned approximately 1.6 kilometer (km)/1 mile (mi) east of El Dorado Hills Boulevard interchange.

Route 50 lane widths west of El Dorado Hills Boulevard are 3.6 meter (m)/12 feet (ft), with inside and outside shoulder widths of 3.0 m (10 ft). The median width is 13.8 m (46 ft) west of El Dorado Hills Boulevard. There is an eastbound truck-climbing lane east of the East Bidwell Street interchange for slow trucks on the 7% mainline grade. This truck lane terminates at the approximate location of the proposed Empire Ranch Road interchange. East of the El Dorado Hills Boulevard interchange, lane widths are 3.6 m (12 ft), with an inside shoulder width of 1.5 m (5 ft) and an outside shoulder width of 2.4 m (8 ft). The median width from east of El Dorado Hills Boulevard to the Bass Lake Grade is 21.3 m (70 ft).

The Bass Lake Grade truck climbing lane was constructed by widening within the median of Route 50 in 2001 beginning just east of the Clarksville Road Undercrossing extending east to the Bass Lake Road interchange.

### **1.3. Project Alternatives**

This chapter describes the proposed action and the design alternatives developed by a multidisciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts.

The project is located on Route 50 between the East Bidwell Street interchange on the west and the El Dorado Hills interchange on the east. The northern project limit is the intersection of Empire Ranch Road with Iron Point Road, and the southern project limit is the cul-de-sac associated with the interchange ramps. The project is proposed to reduce existing traffic congestion and improve safety, improve traffic operations and accommodate travel demand anticipated through the year 2026 on route 50 between East Bidwell Street and Bass Lake Road. Figure 1.3-1 shows the project location.

#### **1.3.1 Interchange Alternative 1: Build Alternative**

The project consists of two elements which may be constructed as one project or in phases (Figures 1.3-2a and 1.3-2b).

- *Element 1:* Construct a new interchange on Route 50 at Empire Ranch Road
- *Element 2:* Construct auxiliary lanes between Empire Ranch Road and El Dorado Hills Boulevard, as well as a westbound auxiliary lane between Empire Ranch Road and East Bidwell Street/Scott Road (also referred to as mainline improvements).

At the project outset and in conjunction with distributing the Notice of Preparation of an Environmental Impact Report/Environmental Assessment, a third element was originally included in the project description that included extending the mainline improvements further east of the El Dorado Hills Boulevard/Latrobe Road Interchange to the base of the Bass Lake Grade. Previously referred to as Element 3, these lane improvements were proposed to extend the high occupancy vehicle (HOV or carpool) lanes in the median between El Dorado Hills Boulevard and the Bass Lake Grade truck climbing lane. However, these improvements were also included in

a Caltrans/FHWA approved project “Route 50 HOV Lanes from El Dorado Hills Boulevard to South Shingle Road/Ponderosa Road”. That project was approved in 2002 with an Initial Study/Mitigated Negative Declaration (State Clearinghouse Number 2002022065) and an Environmental Assessment/Finding of No Significant Impact (EA/FONSI). Accordingly, Element 3 was withdrawn from the proposed Route 50/Empire Ranch Road interchange project.

### **1.3.1.1. Element One: Route 50/Empire Ranch Road Interchange**

The proposed interchange is a partial cloverleaf interchange as shown in Figure 1.3-2. The interchange design includes:

- A single lane westbound diagonal off-ramp widening to two lanes beyond the ramp diverge.
- The westbound on-ramp would be a two lane diagonal ramp (one mixed flow plus one high occupancy vehicle bypass lane), merging to one lane prior to the Route 50 merge; the on-ramp would include ramp metering.
- A single lane eastbound diagonal off-ramp remaining a single lane up to the ramp terminal.
- The eastbound on-ramp would be a two-lane loop ramp (one mixed flow plus one high occupancy vehicle bypass lane), merging to one lane prior to the Route 50 merge; the on-ramp would include ramp metering.
- The westbound ramp terminal intersection would be signalized; the eastbound ramp terminal intersection would not be signalized.
- Geometric refinements to accommodate bicyclists and pedestrians include:
  - The entrance to the eastbound loop ramp is perpendicular to Empire Ranch Road. A separate right turn/deceleration lane is provided to the ramp, with appropriate curb return radius to maintain Surface Transportation Assistance Act truck movements.
  - The entrance to the westbound diagonal on-ramp is located at the ramp intersection; a separate right turn/deceleration lane is provided to the ramp, with appropriate curb return radius to maintain truck movements.
  - Pedestrian crossing movements at the westbound diagonal on-ramp would be within an exclusive signalized phase.

Potential future improvements at this interchange, should Empire Ranch Road be extended south of Route 50, would include widening of the overcrossing structure,

plus construction of a westbound loop on-ramp and an eastbound diagonal on-ramp. These features would be evaluated and confirmed through a subsequent project development and environmental review process.

The estimated project capital costs (i.e., not including support costs such as engineering, construction management, mitigation measures, etc.) for the interchange are summarized as follows:

**Table 1.3-1: Element One Interchange Capital Costs**

Roadway Items	\$17,130,000
Structure Items	\$4,851,000
<b>Subtotal Construction</b>	<b>\$21,981,000</b>
Right of Way Items	\$1,328,000
<b>TOTAL COST</b>	<b>\$23,309,000</b>

Source: Mark Thomas & Company 2006

It should be noted the interchange design is a dead-end on the south side of Route 50 and there is no connection to lands south of Route 50. If it is determined a connection to the south is needed, there would need to be a separate project development process with Caltrans, preparation of preliminary design drawings, preparation of an environmental document, preparation of a revised freeway agreement, California Transportation Commission agreement to provide a break in access control and final design drawings before a connection to the south is provided.

### **1.3.1.2. Element Two: Construct Auxiliary Lanes Between Empire Ranch Road and El Dorado Hills Boulevard**

The proposed project includes the construction of eastbound and westbound auxiliary lanes between Empire Ranch Road and El Dorado Hills Boulevard, as well as a westbound auxiliary lane between Empire Ranch Road and East Bidwell Street/Scott Road. The auxiliary lanes would connect the on-ramps to the off-ramps at both interchanges (proposed and existing, respectively). To the west of the location proposed for the Route 50/Empire Ranch Road interchange, a truck climbing lane is present on Route 50 originating at the Route 50/East Bidwell Street interchange. The truck climbing lane extends to the east up the grade, transitioning back into mixed flow lane beyond the top of the grade. This location coincides with the proposed Empire Ranch Road interchange location. Accordingly, the existing truck lane will be extended by the proposed interchange project, although evolves into the eastbound auxiliary lane.

With the addition of auxiliary lanes, the undercrossing structures over El Dorado Hills Boulevard will need to be replaced to accommodate the additional eastbound auxiliary lane. The existing lane configuration would remain, along with the median barrier rail. Because widening would occur to the outside of the existing lanes, right of way would need to be acquired along both sides of Route 50 to accommodate the narrow cuts and fills required with this widening.

The estimated project capital costs (i.e., not including support costs) for construction of the auxiliary lanes are summarized below:

**Table 1.3-2: Element Two Capital Costs- Outside Widening**

Roadway Items	\$8,651,000
Structure Items	0
<b>Subtotal Construction</b>	<b>\$8,651,000</b>
Right of Way Items	\$440,000
<b>TOTAL COST</b>	<b>\$9,091,000</b>

Source: Mark Thomas & Company 2006

### **1.3.2 Construction Staging and Transportation Management Plan**

Right-of-way acquisition is expected to occur during 2007, and construction is scheduled to begin in 2008/2009.

Even with a closely coordinated construction schedule, the proposed project cannot be constructed without some impact to traffic during construction. The high traffic demand in the study corridor and lack of alternative routes, combined with the steep and rolling terrain and limited visibility would cause potential congestion and safety issues on Route 50 during construction. However, as indicated in the following descriptions, traffic impacts can be reduced with a well-planned stage construction/traffic handling plan and aggressive public awareness during construction. Temporary railing (Type K) would be used to separate construction zones from traffic. Some work-period lane closures would be required (i.e., for removing delineation, setting K-rail, pavement conforms, etc.) and would be performed during non-peak traffic hours. A general description of construction sequencing for the various project elements follows:

- Empire Ranch Road Interchange: The ramps can be constructed without impacting traffic. Work on ramps near the mainline would need to be done during



off peak hours with closures of the outside shoulder and outside lanes. Erection and removal of falsework for the new overcrossing would require rerouting of mainline traffic; median crossovers are suggested.

- **Auxiliary Lanes:** Outside paving for accommodation of the auxiliary lanes between El Dorado Hills Boulevard and Empire Ranch Road, as well as the westbound auxiliary lane between Empire Ranch Road and East Bidwell Street/Scott Road, can be accomplished with shoulder closures and setting of temporary concrete traffic dividers. No long-term lane closures or shifting of mainline would be required.

Consistent with Caltrans policy and procedures, it is expected design of the project, especially staging and traffic control systems, would be coordinated closely with the Caltrans District 3 Transportation Management Plan (TMP) coordinator. There would also be a Construction Zone Enhanced Enforcement Program in place as part of traffic management during construction, including setting and removal of temporary concrete traffic dividers.

In addition to the TMP, the following measures are recommended to relieve congestion and improve safety during construction:

- Real-time traffic information and video images of ramps and arterials in the project area can be posted on websites such as the Route 50 Corridor site. This would enable drivers to assess traffic conditions and determine the best course of action before leaving their home or office.
- Traffic delay information can be posted on permanent or temporary changeable message signs located in advance of key alternate routes (e.g., Iron Point Road) or Route 50 ramps. This would provide adequate advance notice in the event traffic diversion is necessary.
- Traffic information can be broadcast on local Highway Advisory Radio to provide in-vehicle information throughout the project area.

### **1.3.3 Right-of-Way Acquisitions**

Implementation of the project would require acquisition of right-of-way from an estimated five parcels. Right-of-way appraisers would evaluate the fair market value of the property and determine the amount of compensation. When an appraisal is made by right-of-way personnel, some of the factors considered include:

- The loss of land, landscaping, parking, fencing, or other improvements;

- Possible damages, if any, to the remaining property;
- The need to relocate home(s) and/or businesses; and
- If necessary, the purchase of the home/business in lieu of damages payment.

Implementation of the project would require the acquisition of approximately 23-24 acres (see Table 1.3-3) and an undetermined amount of utility easement dedications from various parcels. Right-of-way acquisition for the interchange involves 94,800 m<sup>2</sup> (23.4 acres). Construction of the auxiliary lanes requires acquisition of 3,749 m<sup>2</sup> (0.93 acres). None of the parcels require relocation or purchase of any residences or businesses.

**Table 1.3-3: Estimated Right-of-Way Acquisitions**

County	Assessor Parcel Number	Location	Total Acreage of Parcel (acres)	Acreage to be Taken (acres)
Sacramento	072-1170-113	North of Route 50	19.25	7.13
Sacramento	072-1170-106	North of Route 50	33.97	5.98
Sacramento	072-2270-007	North of Route 50	20.43	0.09
Sacramento	072-0027-138	South of Route 50	64.85	7.14
Sacramento	072-0027-028	South of Route 50	88.33	2.15
El Dorado	117-051-36-10	South of Route 50	15.12	0.74
El Dorado	120-070-03-10	North of Route 50	999.98	0.04
El Dorado	120-070-02-10	North of Route 50	121.95	0.07

Source: Mark Thomas & Company, 2006

### 1.3.4 No-Build (No-Action) Alternative

The No-Build (or No-Action) Alternative is studied to ensure an objective evaluation and to offer a basis for comparison of the impacts of the Build Alternative. Under the No-Build Alternative, there would be no new interchange constructed on Route 50 and the auxiliary lanes would not be constructed. Traffic is projected to increase substantially because of the anticipated and planned growth of the area. An increasing number of vehicles would continue to use the existing local circulation routes. Therefore, the level of service (see page 1-3 for an explanation of level of service) in the project area would continue to decline over time to unacceptable levels, and additional safety issues/increase in accidents would likely arise.

Compared to the Build Alternative, the No-Build Alternative does not meet the project purpose to reduce existing and future congestion along existing roads and interchanges along Route 50, improve traffic conditions, improve safety, improve air

quality by reducing overall vehicle miles of travel and vehicle hours of travel in the project area, and accommodate anticipated travel demand through the year 2025. The No-Build Alternative would result in substantial traffic congestion and operational problems.

### **1.3.5 Alternatives Considered and Withdrawn**

In August 2003, the Notice of Preparation (CEQA scoping task) described the project using a range of alternatives, absent a preferred alternative. Four alternatives were identified for the interchange and two alternatives were identified for the auxiliary lanes. The project was divided into three elements. Elements 1 and 2 consisted of the proposed Route 50/Empire Ranch Road interchange, and Route 50 auxiliary lanes (eastbound and westbound between the Route 50/Empire Ranch Road interchange and Route 50/El Dorado Hills Boulevard/Latrobe Road interchange, and westbound between the Route 50/Empire Ranch Road interchange and the Route 50/East Bidwell Street/Scott Road interchange), respectively. Element 3 (mainline improvements from Route 50/El Dorado Hills Boulevard/Latrobe Road interchange east to the existing Bass Lake Grade Truck Climbing Lane on Route 50) was eliminated subsequent to determining Element 3 improvements were addressed in previous environmental documentation and had independent utility. Technical studies were then prepared for the project for Elements 1 and 2 evaluating impacts for the four interchange alternatives and two auxiliary lane alternatives.

#### **1.3.5.1. Interchange Alternatives Considered and Withdrawn**

After completion of the traffic and environmental technical studies, the Project Development Team (PDT) reviewed the four interchange alternatives for their feasibility potential based on safety concerns and traffic levels of service. Refer to Chapter 4, Section 4.1.1.1 for a description of the PDT. At the February 25, 2004 PDT meeting, there was discussion regarding whether or not Alternatives 2 and 3, both with an eastbound loop off-ramp (a potential safety concern), could be removed from further consideration. Caltrans design staff indicated that Interchange Alternatives 2 and 3 should be withdrawn, since Interchange Alternatives 1 and 4 satisfy the need and purpose for the project without the safety concerns associated with the loop off-ramp.

Interchange Alternative 4 was removed from further consideration because the level of service at the intersection of Empire Ranch Road with the westbound ramps was significantly worse than the level of service of this intersection with Interchange

Alternative 1. As an example, in the P.M. peak hour, this intersection operates at LOS D with Interchange Alternative 4, but is improved to LOS B with Interchange Alternative 1. As a result of withdrawing Interchange Alternatives 2, 3, and 4 from further consideration, Interchange Alternative 1 remained the only feasible interchange alternative. It should be noted that, despite withdrawing Interchange Alternatives 2, 3, and 4 from further consideration, the technical Traffic Study evaluates all four interchange alternatives. Likewise, the technical studies conducted for Air Quality, Noise, Natural Environment Study and Cultural Resources include an evaluation of Interchange Alternative 4 (withdrawn alternative) in addition to Interchange Alternative 1.

The PDT also reviewed the two auxiliary lane alternatives (inside widening and outside widening alternatives) for project feasibility. Caltrans determined that widening to the inside of the mainline (e.g., in the vacant median) could not be included in this project due to the resulting width of the freeway median (6.6m) requiring a design exception approval for a less than advisory standard of 10.8m median width. Caltrans will not approve this design exception for the project. Therefore, the inside widening alternative for auxiliary lane improvements was withdrawn from further consideration. As a consequence of this decision, the outside widening alternative remained the only feasible for the auxiliary lane portion of the project. The technical studies retain analyses for both auxiliary lane alternatives (inside and outside widening).

Accordingly, this environmental document only addresses in detail the Interchange Alternative 1 and the outside widening alternative for the auxiliary lanes.

The following describes the interchange alternatives considered and withdrawn.

### **Interchange Alternative 2**

Interchange Alternative 2 represents a partial cloverleaf interchange. In particular, following were anticipated elements of the interchange:

- Westbound ramps would be the same as the proposed project.
- Eastbound ramps would consist of a single lane loop off-ramp and a two lane diagonal on-ramp (one mixed flow plus one high occupancy vehicle bypass) merging to one lane prior to the Route 50 merge; the on-ramp would include ramp metering.

- As in the proposed interchange design, the westbound ramp terminal intersection would be signalized; the eastbound ramp terminal intersection would not be signalized.

Interchange Alternative 2 would include similar bicycle/pedestrian ramp intersections, as the proposed interchange design, by providing more controlled movements at the ramp terminal intersections. This alternative was withdrawn from further consideration due to the potential safety concerns associated with the eastbound loop off-ramp design.

### **Interchange Alternative 3**

Interchange Alternative 3 represents a modified partial cloverleaf interchange as described below:

- The westbound off-ramps would be the same as the proposed interchange design. The diagonal on-ramp with the proposed interchange design would be replaced with a two-lane loop on-ramp (one mixed flow plus one high occupancy vehicle bypass) merging to one lane prior to the Route 50 merge; the on-ramp would include ramp metering.
- Eastbound ramps would consist of a single lane loop off-ramp and two lane diagonal on-ramp (one mixed flow plus one high occupancy vehicle bypass) merging to one lane prior to the Route 50 merge; the on-ramp would include ramp metering.
- As in the proposed interchange design, the westbound ramp terminal intersection would be signalized; the eastbound ramp terminal intersection would not be signalized.

Interchange Alternative 3 would include similar bicycle/pedestrian ramp intersections as the proposed interchange design by providing more controlled movements at the ramp terminal intersections. This alternative was withdrawn from further consideration due to the potential safety concerns associated with the eastbound loop off-ramp design.

### **Interchange Alternative 4**

Interchange Alternative 4 represents a partial cloverleaf interchange as described below:

- Eastbound ramps would be the same as the proposed interchange design.
- Westbound ramps would consist of a single lane diagonal off-ramp and two lane loop on-ramp (one mixed flow plus one high occupancy vehicle bypass) merging to one lane prior to the Route 50 merge; the on-ramp would include ramp metering.
- As in the proposed interchange design, the westbound ramp terminal intersection would be signalized; the eastbound ramp terminal intersection would not be signalized.

Interchange Alternative 4 would include similar bicycle/pedestrian ramp intersections by providing more controlled movements at the ramp terminal intersections.

Interchange Alternative 4 includes a loop on-ramp in the northeast quadrant of the interchange, requiring all southbound to westbound traffic to make a left turn from Empire Ranch Road to the loop on-ramp, which represents the majority of the traffic in the a.m. peak hour. This left turn movement would result in a lower level of service at the intersection of Empire Ranch Road and the westbound interchange ramps compared to the Alternative 1 interchange design. This alternative was withdrawn from further consideration due to significantly worse level of service conditions (LOS D) when compared to interchange Alternative 1 (LOS B).

### **Auxiliary Lanes Alternatives Considered and Withdrawn**

The initial design alternative considered for the auxiliary lanes was to widen within the existing median, with a concrete median barrier, and to restripe the mainline to shift the mixed flow and high occupancy vehicle lanes over one lane to the left (in the direction of travel). The existing number 3 lane in each direction would become the auxiliary lanes. The recent high occupancy vehicle project on Route 50 constructed the median shoulder structural section to traveled way thickness, so the shoulder does not need to be replaced, but the cross slope of the median shoulder would need to be corrected so the entire section is sloped to the outside of the highway. For this inside widening alternative, because the widening of the mainline would occur within the existing median, no right of way acquisition would be required.

Both the City and Caltrans reviewed the two auxiliary lane alternatives (e.g., inside widening vs. outside widening) and have identified the outside widening alternative for the auxiliary lane portion of the project. It should be noted the new median width under the inside widening alternative would be 6.6 m, which is less than the advisory

standard of 10.8 m requiring Caltrans approval of a design exception. Caltrans staff indicated they would not approve this design exception for this project. Therefore, the inside median widening alternative for the auxiliary lane component was withdrawn and eliminated from further consideration.

The technical studies retain analyses for both auxiliary lane alternatives.

### **1.3.6 Transportation System Management and Transportation Demand Management Alternatives**

Transportation System Management strategies consist of actions to increase the efficiency of existing roadways; they are actions which increase the number of vehicle trips a roadway can carry without increasing the number of through lanes. Examples of transportation system management strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. Transportation demand management focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy. Although transportation system management measures alone could not satisfy the purpose and need of the project, the following transportation system management measures have been incorporated into the build alternatives for the project:

- Auxiliary lanes between the Empire Ranch Road interchange and the El Dorado Hills interchange, as well as a westbound auxiliary lane between Empire Ranch Road and East Bidwell Street/Scott Road.
- On-ramps would be designed to accommodate future ramp metering, high-occupancy-vehicle lanes, and California Highway Patrol enforcement areas.



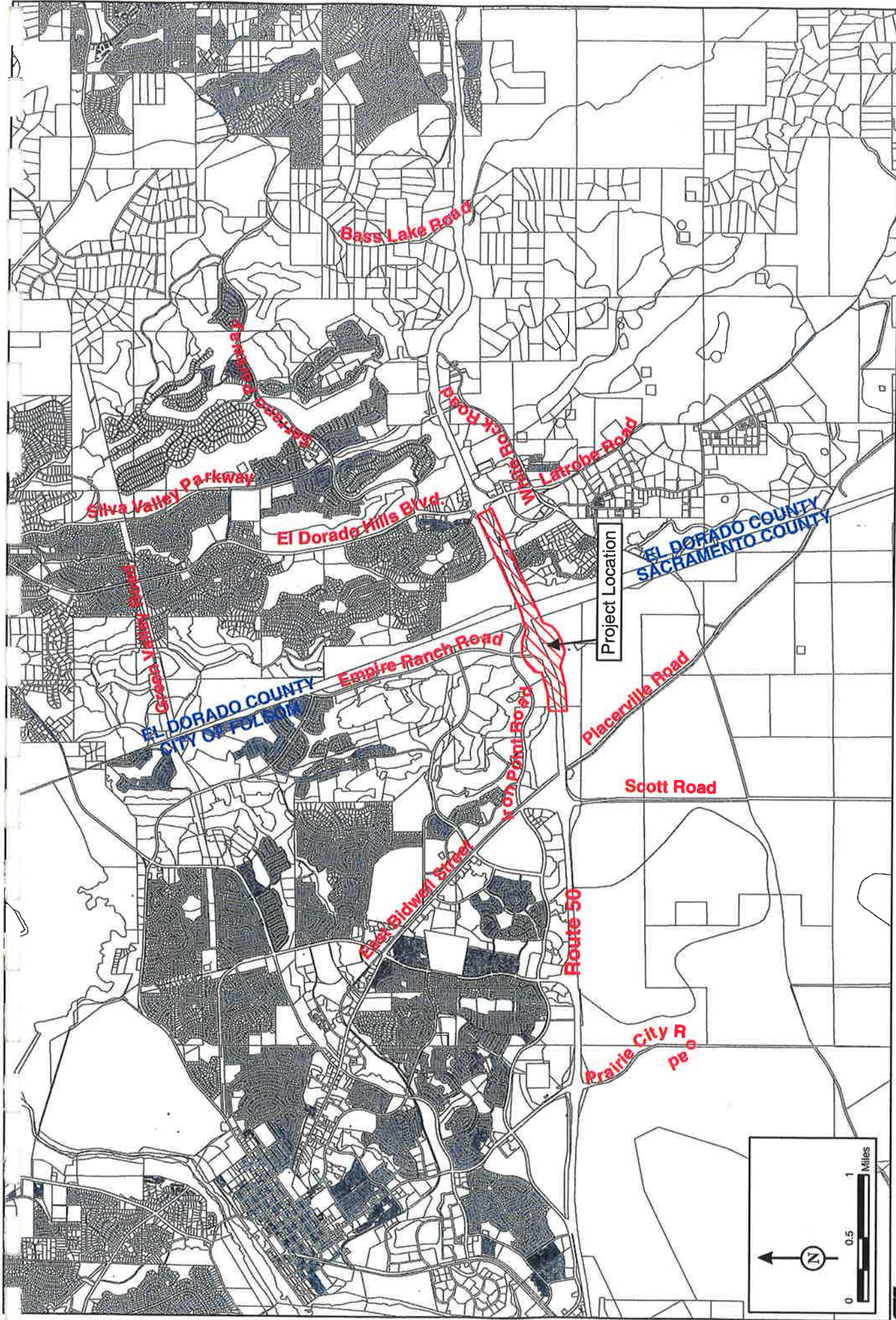


FIGURE 1.1-1

Empire Ranch Road Interchange Project  
Project Location

Source: Base - SACOG GIS, 2002  
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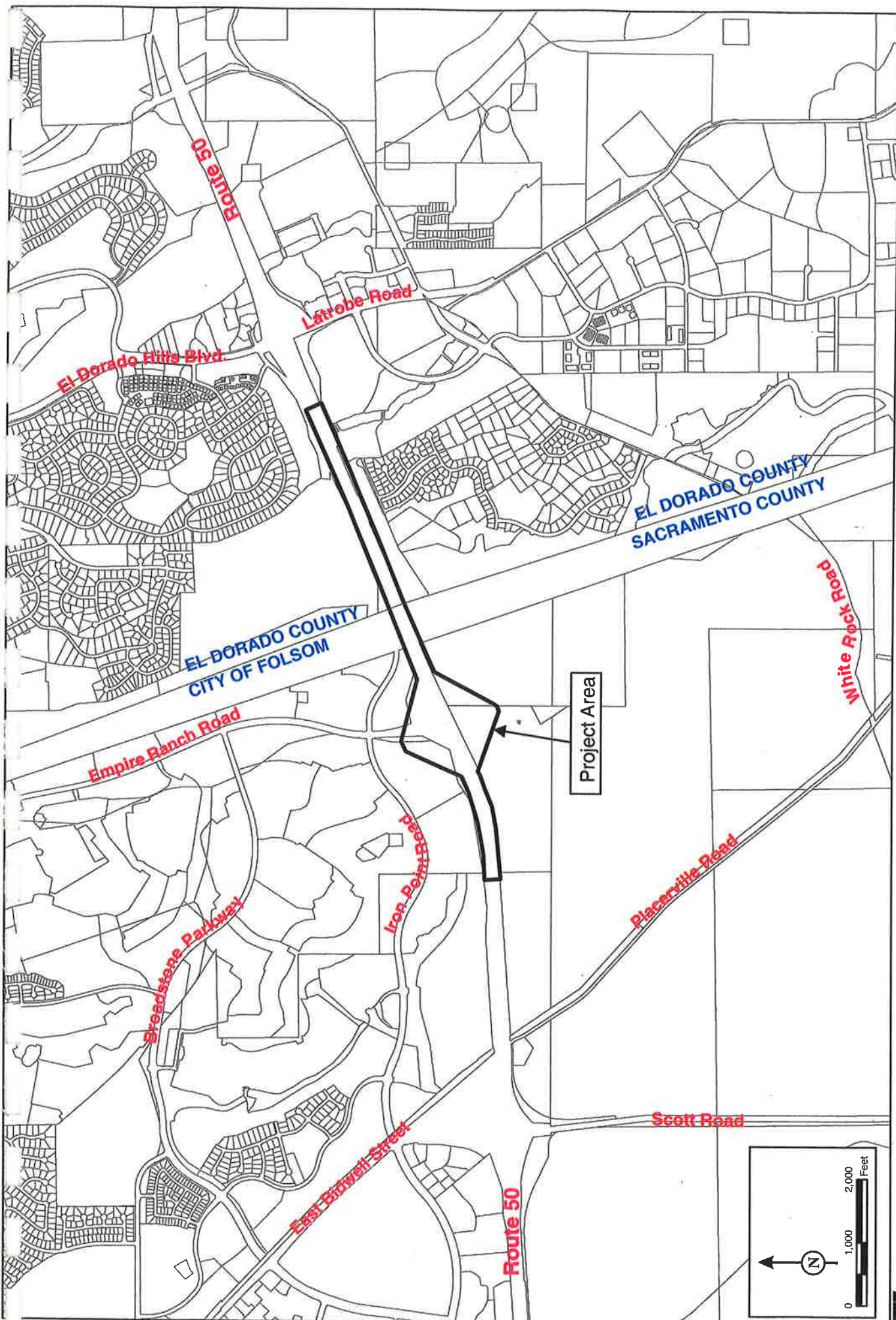


FIGURE 1.1-2

Empire Ranch Road Interchange Project  
Project Vicinity

Source: Base - SACOG GIS, 2002  
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### Level of Service for Unsignalized Intersections

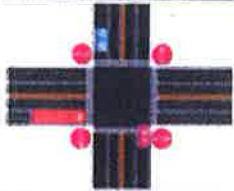

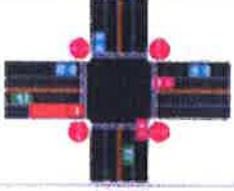
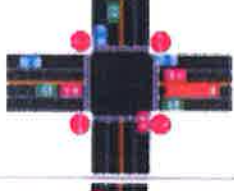

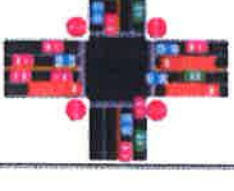
Level of Service	Flow Conditions	Delay per Vehicle (seconds)	Technical Descriptions
<b>A</b>		<10	<b>Very short delays</b>
<b>B</b>		10-15	<b>Short delays</b>
<b>C</b>		16-25	<b>Minimal delays</b>
<b>D</b>		26-35	<b>Minimal delays</b>
<b>E</b>		36-50	<b>Significant delays</b>
<b>F</b>		>50	<b>Considerable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

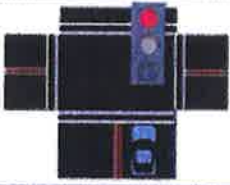

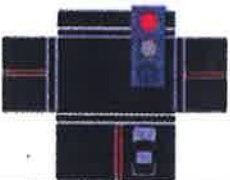


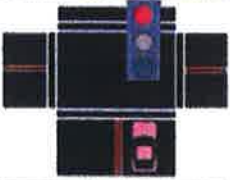


FIGURE 1.1-3

*Empire Ranch Road Interchange Project*  
 Intersection Peak Hour Traffic Volumes  
 And Lane Configurations-Levels of Service for  
Unsignalized Intersections



### Level of Service for Signalized Intersections

Level of Service	Delay per Vehicle (seconds)
<b>A</b>	 ≤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.



FIGURE 1.1-4

Empire Ranch Road Interchange Project  
 Intersection Peak Hour Traffic Volumes  
 And Lane Configurations-Levels of Service for  
 Signalized Intersections

### Level of Service for Freeways







Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
<b>A</b>		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. <b>No delays</b>
<b>B</b>		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. <b>No delays</b>
<b>C</b>		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. <b>Minimal delays</b>
<b>D</b>		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. <b>Minimal delays</b>
<b>E</b>		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. <b>Significant delays</b>
<b>F</b>		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. <b>Considerable delays</b>



FIGURE 1.1-5

*Empire Ranch Road Interchange Project*  
Intersection Peak Hour Traffic Volumes  
And Lane Configurations  
Levels of Service for Freeways

### Level of Service for Multi-Lane Highways







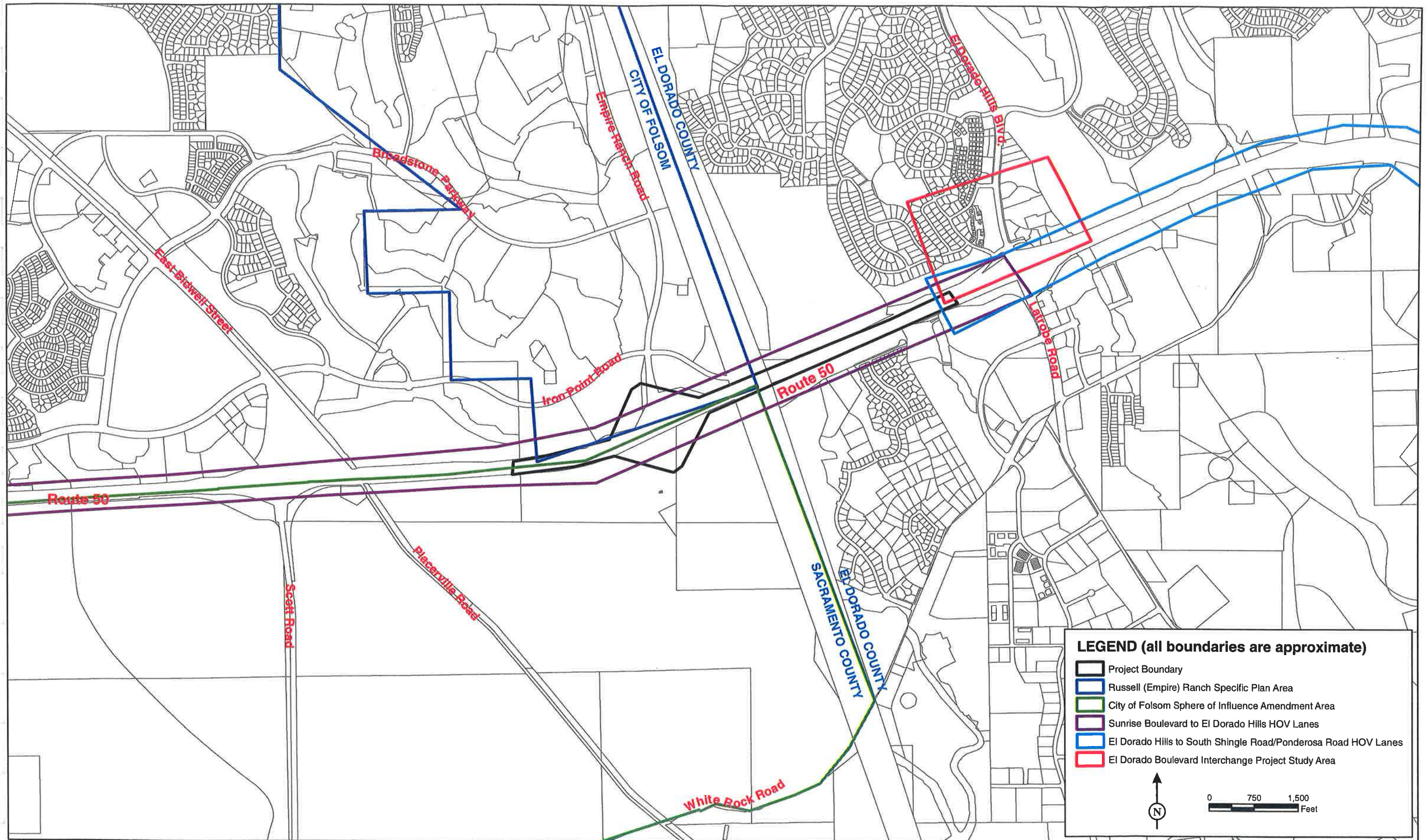
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
<b>A</b>		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. <b>No delays</b>
<b>B</b>		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. <b>No delays</b>
<b>C</b>		60	Density becomes noticeable with ability to maneuver limited by other vehicles. <b>Minimal delays</b>
<b>D</b>		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. <b>Minimal delays</b>
<b>E</b>		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. <b>Minimal delays</b>
<b>F</b>		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. <b>Significant delays</b>



FIGURE 1.1-6

*Empire Ranch Road Interchange Project*  
 Intersection Peak Hour Traffic Volumes  
 And Lane Configurations  
 Levels of Service for Multi-Lane Highways





**LEGEND (all boundaries are approximate)**

- Project Boundary
- Russell (Empire) Ranch Specific Plan Area
- City of Folsom Sphere of Influence Amendment Area
- Sunrise Boulevard to El Dorado Hills HOV Lanes
- El Dorado Hills to South Shingle Road/Ponderosa Road HOV Lanes
- El Dorado Boulevard Interchange Project Study Area

FIGURE 1.3-1

Empire Ranch Road Interchange Project  
Regional Planning Areas



Source: ESA, 1991; PAR, 1998; LAFCO, 2000; CALTRANS, 2001; BBA, 2002; LSA, 2003; Basemap - SACOG GIS, 2002

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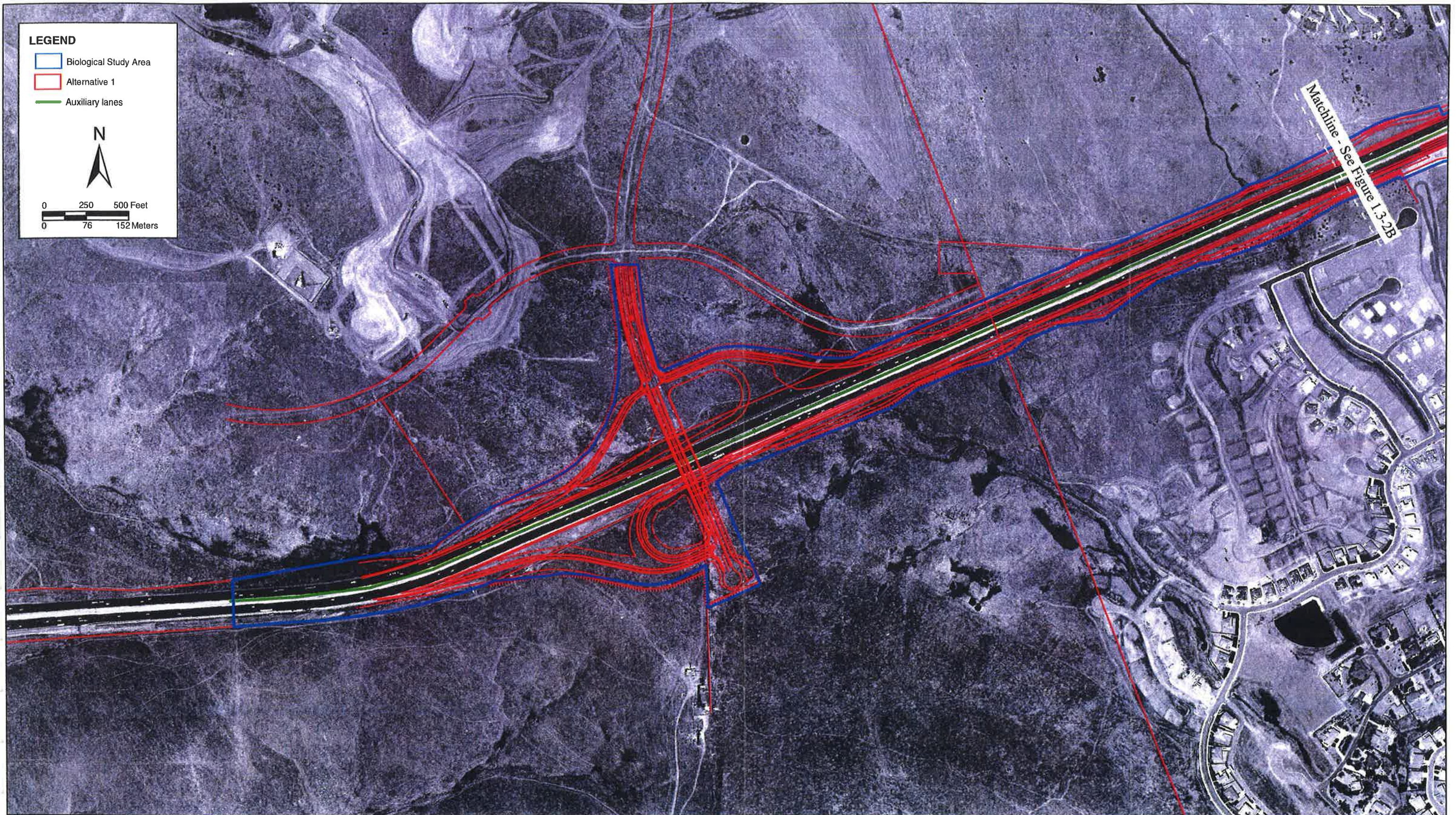


FIGURE 1.3-2A



Empire Ranch Road/State Route 50 Interchange  
03-SAC/ED-50  
EA #IC9500  
Proposed Project





FIGURE 1.3-2B



Empire Ranch Road/State Route 50 Interchange  
03-SAC/ED-50  
EA #IC9500  
Proposed Project



## **Chapter 2. Affected Environment, Environmental Consequences, and Mitigation Measures**

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This chapter provides information regarding the existing environment and potential impacts of implementing the proposed project. The potential effects include permanent, temporary (construction phase), and cumulative impacts. Avoidance and minimization measures are recommended to lessen or reduce identified impacts.

Chapter 2 is divided into three categories as follows: Human Environment, Physical Environment, and Biological Environment.

### **HUMAN ENVIRONMENT**

#### **2.1. Land Use**

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

Element 2 of the build alternative consists of constructing auxiliary lanes to the outside of Route 50. Additional right-of-way must be acquired to accommodate the additional lane width and grading requirements. Sufficient buffer area exists between the outside lanes and adjacent residential uses to avoid land use conflicts. Therefore, land use impacts will not occur because of Element 2. Other potential environmental impacts created by Element 2 (e.g. noise, air quality) are discussed in the appropriate section of this document. The following land use discussion concentrates on Element 1 - the proposed interchange at Empire Ranch Road and Route 50.

The interchange site is one of the few areas within Sacramento County along Route 50 that remains undeveloped. The area south of Route 50 is used for seasonal grazing during the winter and early spring. Livestock are moved to other areas during the dry season. Agricultural improvements in this area are limited to perimeter fencing, stock tanks, and feeding stations. Large scale agricultural improvements have not been made. The area north of Route 50 has been graded for extensive residential and commercial development associated with the Empire Ranch Specific Plan (LAFCO, 1998). Figures 2.1-1 and 2.1.4 presents the current land use (aerial photograph as of year 2003) and General Plan land use, respectively within the project area.

The planning documents that govern the interchange site north of Route 50 include the City's General Plan and Russell Ranch (Empire Ranch) Specific Plan. The area south of Route 50 is within the City's Sphere of Influence (SOI). While the City accounts for this area in its General Plan, the Sacramento County General Plan ultimately guides land use planning for the area south of Route 50.

The Empire Ranch Specific Plan identifies the area northwest of Route 50 and the proposed interchange as single family residential. The area located northeast of Route 50 and the proposed interchange is designated as commercial (ESA, 1991).

Land south of Route 50 lies within Sacramento County jurisdiction and is governed by the Sacramento County General Plan. The area is designated for General Agriculture (80 acres). The General Agriculture (80 acres) designation "identifies land that is generally used for agricultural purposes, but less suited for intensive agricultural than Agricultural Cropland. The minimum size allowable is 80 acres, large enough to maintain an economically viable farming operation. Only agricultural production is permitted within this designation" (Sacramento County, 1993).

The Sacramento County General Plan Circulation Element does not identify an interchange in the project area. The area south of Route 50 is located outside of the County's Urban Policy Area and Urban Service Boundary (refer to Figure 2.1-2). The Urban Service Boundary delineates the extent of urbanization in Sacramento County. Portions of the project are located within the City of Folsom. Lands to the south of the interchange (within unincorporated Sacramento County) are within the City of Folsom's Sphere of Influence and may be annexed in the future (refer to Figure 2.1-3). With annexation, all services would become the City's responsibility.

The following summarizes the issues associated with previously prepared environmental documents relevant to the project area.

**Russell Ranch Specific Plan and EIR, State Clearinghouse Number 89020178**

In October 1991, the City adopted the Russell Ranch (now Empire Ranch) Specific Plan project and certified the Final EIR document. The EIR evaluated an area consisting of 1,791 acres in east Folsom, adjacent to the El Dorado County boundary and north of Route 50. A total of 4,860 residential dwelling units were approved, as well as 17 acres of commercial land use in two locations (northern and southern ends of the project area). The Specific Plan outlined a plan to implement the planned community, which consisted of a land use plan and

circulation network, and supporting services, utilities and public facilities. A total of 477 acres of developed and 47 acres of undeveloped open space were designed into the land use plan.

The EIR identified the following issue areas as potentially significant effects that cannot be mitigated: cumulative loss of open space and grazing lands by year 2010; fugitive dust generation during grading; increase in air pollutant emissions; violation of air quality standards; cumulative violation of air quality standards by year 2010; construction noise effects on adjacent uses; change in visual character from El Dorado Hills<sup>1</sup>; expansion of urbanized area due to cumulative growth; loss of portions of great valley cottonwood riparian forest; loss of northern hardpan vernal pool habitat; loss of vernal marsh habitat; loss of freshwater seep habitat; loss of coastal and valley freshwater marsh; streambed alteration; impacts to waters of the U.S.; impacts on sensitive plant species; loss of blue oak woodland and riparian forest (Swainson's hawk foraging and nesting); loss of non-native grasslands (burrowing owl nesting); loss of coastal and valley freshwater marsh (northern harrier nesting); loss of vernal pool and seasonally wet areas (fairy shrimp); loss of nesting and foraging habitat for black-shouldered hawk and tricolored blackbird; depletion of groundwater resources by year 2010; exceeding school capacity; cumulative exceedance of school capacity; and increased hazards from movement of hazardous materials on Route 50.

### **City of Folsom Sphere of Influence Amendment EIR, State Clearinghouse Number 97042050**

In October 2000, the Sacramento Local Agency Formation Commission (LAFCO) certified the Final EIR for the City's Sphere of Influence Amendment (SOIA). The Final EIR was originally prepared in July 1998, and as a result of public hearings on the SOIA, LAFCO took no action. In fall 2000, LAFCO reconsidered the Final EIR to determine if re-circulation was required based on CEQA Guidelines Sections 15007 and 15088.5, concluding the re-circulation was unnecessary and certified the EIR.

The City submitted an application to LAFCO to expand the City's SOI as the "probable physical boundaries and service areas of a local agency". The proposed "project" consists of a request to extend the Sphere of Influence (SOI) to include 3,584 acres south of the existing

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<sup>1</sup> On December 1, 1992, the Folsom City Council adopted Findings and Facts and Overriding Considerations on the Russell Ranch Specific Plan project. With respect to visual effects, the City found in the Final Environmental Impact Report "*Significant Impact 4.5.4: As viewed from Highway 50, the proposed project (Russell Ranch Specific Plan) would appear as a substantial, obvious, and disharmonious modification of the landscape, to the extent that it clearly dominates the view in the project vicinity.*"

SOI boundary (which is coterminous with the existing City limits). As proposed the SOI is bounded by Route 50, Prairie City Road, White Rock Road, and the Sacramento County/El Dorado County boundary.

The City submitted an updated Master Services Element that assesses whether the City can provide adequate levels of service throughout the area within the amended SOI and the existing City. In addition, the City identified a number of major public improvements required to provide services of the potential urban area.

The EIR identified the following potentially significant or significant impacts that can not be mitigated: conversion of rangeland to urban uses, conversion of open space, increase in average daily traffic on local roadways under existing plus project conditions, increase in average daily traffic on Route 50 under existing and cumulative plus project conditions, increase in demand for transit under existing and cumulative plus project conditions, increase in demand for bikeway and pedestrian facilities under existing and cumulative plus project conditions, interference with implementation of planned bikeways under existing and cumulative plus project conditions, increase in average daily traffic on local roadways under cumulative plus project conditions, generation of short-term construction emissions, potential increase in emissions of criteria pollutants, project contribution to cumulative emissions of criteria air pollutants, loss of native, heritage or landmark trees, loss of oak woodlands, loss or disturbance of special status species, indirect effects to historic resources and districts, construction disturbance of contaminated soils and groundwater, flood hazards, and water supply development.

**U.S. Highway 50 High Occupancy Vehicle (HOV) Lanes Project, Sunrise Boulevard to El Dorado Hills Boulevard, Initial Study/Environmental Assessment, State Clearinghouse Number 98072047**

An Initial Study/Environmental Assessment (IS/EA) was prepared in September 1998 for this project to evaluate the effects from constructing HOV lanes in the median of Route 50 between Sunrise Boulevard interchange in eastern Sacramento County and El Dorado Hills interchange in western El Dorado County. The project also designates four California Highway Patrol (CHP) enforcement zones. Project construction has been completed. The addition of the HOV lanes within the median of Route 50 required modifications to open median areas at the Sunrise Bikeway Corridor Overcrossing, Natoma structure and the Whiterock overhead. Median barriers were required throughout the length of the project. A soundwall was constructed at the northeast quadrant of the Sunrise Boulevard interchange.

Also, the shoulder to the truck-climbing lane, east of Scott Road eastbound on-ramp was widened to meet Caltrans standards. This project terminates at the western limits of the proposed Empire Ranch Road interchange.

**U.S. Highway 50 High Occupancy Vehicle (HOV) Lanes Project, El Dorado Hills Boulevard to South Shingle Road/Ponderosa Road, Initial Study/Environmental Assessment, State Clearinghouse Number 2002022065**

An IS/EA document prepared in December 2001 for this project evaluated the effects from adding two HOV lanes (one eastbound and one westbound) in the median of existing Route 50 in western El Dorado County from El Dorado Hills Boulevard undercrossing to South Shingle Road/Ponderosa Road Overcrossing [KP 0.25/R14.67 (PM 0.16/R9.11)]. The project extended the existing HOV lanes that were constructed in 2002 west of the project area. Only the most westerly segment (KP 0.25 [PM 0.16] to KP 3.1 [PM 2.0]) of this project overlaps with the proposed project. The project would also include bridge modifications (Latrobe Road/El Dorado Hills Boulevard Undercrossing and Clarksville/Silva Valley Parkway Undercrossing and others), lighting improvements (El Dorado Hills Boulevard Interchange and others), new overlay, and CHP enforcement areas. As noted in the IS/EA, these improvements will have no effects on farmland, geology and soils, air quality, floodplain, community, or public services and utilities. The project is not inconsistent with any adopted community plans. With mitigation, the improvements will not result in impacts to visual quality, biological resources (including wetlands), water quality, noise, or cultural resources. The FONSI was signed June 28, 2002; the Negative Declaration was approved April 2002.

This HOV Lane project (inside widening) is a component of the larger HOV project extending east to South Shingle Springs Road/Ponderosa Road proposed by El Dorado County. At the outset of the Empire Ranch Road Interchange project, this segment of the HOV Lane project was defined as Element Three. The purpose for including this HOV Lanes segment with the Empire Ranch Road Interchange project was to improve the transition of traffic on the mainline in conjunction with the Empire Ranch Road Interchange design and operations. This segment must be constructed prior to constructing Elements One and Two, and was dropped as a project element due to the redundancy with the larger HOV Lane project. El Dorado County has indicated that the HOV Lane project is funded, and has environmental clearance, although additional environmental review is needed (due to new information) prior to construction.

**U.S. Highway 50/El Dorado Hills Boulevard-Latrobe Road Interchange Project,  
EIR/Environmental Assessment, State Clearinghouse Number 98072050**

In May 2000, the Final EIR/EA was certified by El Dorado County. This project involves the reconstruction of the El Dorado Boulevard-Latrobe Road interchange on Route 50; improving the vertical and horizontal alignment of the interchange on- and off-ramps, providing additional lanes to accommodate exclusive turn lanes at various intersections; providing dual left-turn lanes at the eastbound and westbound on-ramp intersections; and re-aligning Saratoga Way to intersect with Park Drive. The project includes reconstructing the westbound ramps with an L-8 interchange configuration, and an S-curve configuration for the relocated Saratoga Way. In the ultimate configuration, the Route 50 undercrossing structures would be replaced. The environmental document acknowledges the need for subsequent phased improvements on nearby roadways affecting the El Dorado Hills Boulevard-Latrobe Road interchange. These improvements are identified in the El Dorado County General Plan and include:

- Connection of White Rock Road to Silva Valley Parkway as a two-lane road;
- Widening White Rock Road to four lanes from Latrobe Road to Silva Valley Parkway and possible construction of an initial phase of the Silva Valley Parkway/Route 50 interchange; and
- Construction of a high-occupancy vehicle lane on Route 50 in the eastbound and westbound directions from Sunrise Boulevard to El Dorado Hills Boulevard (this project has been completed).

None of the project impacts were considered as significant and unavoidable under CEQA.

**2.1.1.1. Section 4(f) Resources**

Section 4(f) resources are generally parks, recreation areas, wildlife and waterfowl refuges, or historic sites and are subject to further evaluation if potentially affected by the project action. Section 4(f) of the Department of Transportation Act of 1966, codified in Federal law at 49 USC §303, declares “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl, and historic sites.”

Section 4(f) specifies “[t]he Secretary [of Transportation] may approve a transportation program or project...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance (as determined

by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site), only if —

- (1) There is no prudent and feasible alternative to using that land; and
- (2) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.”

Within the project area, there are no existing Section 4(f) resources present that would be directly or indirectly affected by the project. The City of Folsom’s Bikeway Master Plan identifies a Class II bike lane (on-street signed bike path) along the south side of Iron Point Road (east and west of Empire Ranch Road) and a Class II bike lane along Empire Ranch Road. The proposed Empire Ranch Road interchange connects to Iron Point Road to the north and ends in a cul-de-sac just south of Route 50 (there is no proposed connection to lands south of Route 50). The interchange design accommodates pedestrians with sidewalks and bicyclists with Class II bike lanes on both sides of Empire Ranch Road. The preliminary design of the interchange has been modified from the “standard” interchange configuration to slow vehicular traffic at potential conflict points (intersections). The on-ramps and off-ramps are almost perpendicular to the cross street (Empire Ranch Road) in order to minimize crossing lengths for pedestrians and bicyclists. In addition, the on-ramp/off-ramp intersection on the north side of Route 50 will be signalized to minimize conflicts. No impacts to the Class II bike lanes are envisioned as the interchange design accommodates bicycles as identified in the City’s Bikeway Master Plan. No evaluation of Section 4(f) resources is required.

#### **2.1.1.2. SMARA Compliance**

The extraction of minerals in a responsible manner is essential to the continued economic well-being of the state and to the needs of society, and the thoughtful reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety. The Surface Mining and Reclamation Act (SMARA) is a state law that ensures land used for mining is returned to a useful state when mining ceases. The law is administered at the local level by local government, with assistance and review by the Department of Conservation's Office of Mine Reclamation. Because of the nature of the lands in the project vicinity, a compliance permit is required unless specifically exempt under SMARA.

### **2.1.1.3. Environmental Justice/Title VI**

No minority or low-income populations have been identified that would be adversely impacted by the proposed project. Therefore, this project is not subject to the provisions of Executive Order 12898 (July 2001 Interim Guidance on Addressing Environmental Justice from FHWA's Western Resource Center).

### **2.1.2 Permanent Impacts**

The project will not physically divide an established community. In the project area, established communities have been previously defined by Route 50, and the recent development along the north side of Route 50 accommodates the proposed project with the reservation of the right of way for the interchange.

**Potential Impact 2.1.1: The project site is governed by multiple planning documents. The proposed project is consistent with applicable planning documents.**

#### ***City of Folsom General Plan/Empire Ranch Specific Plan***

The interchange concept has undergone environmental review and the entitlement process through the approval of the City's General Plan and Empire Ranch Specific Plan. As such, the proposed interchange is consistent with these planning documents. Figure 2.1-4 illustrates the General Plan Land Use. The Empire Ranch Specific Plan (formerly Russell Ranch Specific Plan) land use reflects the General Plan.

#### ***Sacramento County General Plan***

The following goals and objectives are relevant to the proposed interchange element.

##### ***Agricultural Element***

***Goal - Protect important farmlands from conversion and encroachment and conserve agricultural resources.***

***Objective - Prime farmlands (as defined by the California Department of Conservation) and lands with intensive agricultural investments (such as orchards, vineyards, dairies, and other concentrated livestock or poultry operations) protected from urban encroachment.***

***Objective - Retain agricultural land holdings in units large enough to guarantee future and continued agricultural use.***



Approximately 9.29 acres of land designated as General Agriculture would be converted to roadway right-of-way. As identified by the Natural Resource Conservation Service and California Department of Conservation, this area does not consist of Prime or Unique Farmland, or Farmland of Statewide Importance. Additionally, the Department of Conservation does not consider grazing land as important farmland (LAFCO, 1998). The interchange site is not under a Williamson Act contract and intensive agricultural investments do not exist on the area subject to conversion. Approximately 7.14 acres will be acquired from Assessor's Parcel Number (APN) 072-0027-138 and 2.15 acres from APN 072-027-028. The total acreage for these parcels are 64.85 and 88.33 acres, respectively. The amount of agricultural land to be acquired represents 11 percent and 2 percent of the total parcel size. The proposed interchange and related components (Elements 1 and 2) will not exclude the use of the remaining acres for seasonal grazing purposes. As such, the proposed interchange and related components are consistent with goals and policies identified within the Agricultural Element of the Sacramento County General Plan.

*Land Use Element*

*Land Use Element Goal - An orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, and protects the County's natural, environmental, and agricultural resources.*

*Urban Service Boundary and Urban Policy Area - Objective - Reserve the land supply to amounts that can be systematically provided with urban services and confine the ultimate urban area within limits established by natural resources.*

*Rural Towns - Objective - Limited urban growth in rural towns consistent with infrastructure capacity, natural constraints, and the economic base.*

*Agricultural Land Uses - Objective - Important farmlands protected to ensure the continuation of agricultural production and to preserve open space.*

As identified in the previous discussion, the proposed interchange is not inconsistent with relevant goals and objectives of the Agricultural Element of the Sacramento General Plan.

The remaining land use goals and objectives relevant to the proposed interchange deal primarily with urban growth and provision of services. While the interchange is urban in nature, the proposed project does not contain any aspects that promote growth or extension of

urban services. In fact, the design of the interchange does not promote growth south of Route 50. The interchange design terminates Empire Ranch Road at a dead-end on the south side of Route 50, without any break in access control. As such, the interchange would not create the need for an extension of services outside of Sacramento County's Urban Service Boundary. Additionally, numerous obstacles complicate the future development opportunities south of Route 50, including expanding the Urban Service Boundary and amending the Sacramento County General Plan and associated zoning ordinances. Therefore, the proposed interchange is not inconsistent with goals and policies identified within the Land Use Element of the Sacramento County General Plan.

#### *Circulation Element*

*Regional Perspective CI-2 Policy - Sacramento County shall conduct land use and transportation planning with a regional perspective.*

The Circulation Element of the Sacramento General Plan does not identify an interchange in the project area. From a regional perspective, however, the interchange is necessary to accommodate development north of Route 50. Previous discussions with Sacramento County staff indicate although an interchange is not identified in the project area, this does not mean the interchange is inconsistent with the Circulation Element. Since the proposed interchange and auxiliary lanes do not extend into the unincorporated area of Sacramento County (no roadways from the proposed interchange are planned to extend south of Route 50), Sacramento County Circulation consistency issues will be avoided.

The City and Sacramento County have initiated discussions regarding the potential to annex the area south of Route 50 to within the City's boundaries. Annexation would ultimately prevent conflicts with Sacramento County's General Plan because of policy differences included in the City's General Plan. If the annexation does not occur, conversations with Sacramento County staff have indicated the primary concern was the extension of the Urban Service Boundary. As previously discussed, the extension of services is not a component of the project without development south of Route 50. The interchange design terminates Empire Ranch Road at a dead-end just south of Route 50. Therefore, the proposed interchange is not inconsistent with goals and policies identified within the Circulation Element of the Sacramento County General Plan (Jones & Stokes 2001).

***South Sacramento Habitat Conservation Plan (HCP)***

The Empire Ranch Road interchange is within the planning area of the South Sacramento HCP. The intention of the HCP is to provide a “regional approach to addressing issues related to urban development, habitat conservation, and agricultural protection” (Sacramento County 2004). The voluntary HCP remains in the planning stages and, therefore, the project applicant will not be covered by the HCP. Rather, standard regulatory compliance procedures will be required. Therefore, the project is consistent with the South Sacramento HCP.

**Potential Impact 2.1.2: The proposed project is compatible with surrounding land uses.**

The project is compatible with residential and commercial uses planned north of Route 50. Construction of the interchange is essential to accommodate the proposed residential and commercial developments north of Route 50.

Land uses south of Route 50 consist of seasonal grazing activities. The proposed interchange design will terminate Empire Ranch Road just south of Route 50. Direct access to areas south of Route 50 will not occur as part of the interchange element. This will prevent an increase in traffic south of Route 50 and prevent conflicts with grazing operations. Additionally, the interchange will not exclude the agricultural/grazing use of the remainder of the parcels needed for right-of-way acquisition.

**Potential Impact 2.1.3: The proposed project will require right of way acquisition requiring fair (just) compensation to land owners and uses on these parcels.**

For the interchange and the outside widening (auxiliary lanes), approximately 98,234 m<sup>2</sup> (24.3 acres) will be required. A majority of the right-of-way acquisition will occur north of Route 50. The proposed interchange is an essential component of the developments planned north of Route 50. The area was recently developed and will not be impacted by the Interchange project. Lands involved in development have anticipated the interchange and will accommodate the interchange without affecting proposed uses.

Approximately 9.29 acres of right-of-way acquisition are required south of Route 50 on seasonal grazing lands. The area of take constitutes a small percentage (11% and 2%) of the total parcel size and will not preclude the use of the land for grazing activities. Individuals, residences, and businesses will not be displaced as part of this acquisition. All property owners will receive fair compensation for any right-of-way acquired to serve the project,

consistent with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

**Table 2.1-1: Right-of-Way Acquisitions**

County	Assessor Parcel Number	Location	Total Acreage of Parcel (acres)	Acreage to be Taken (acres)	Percentage take of total parcel acreage
Sacramento	072-1170-113	North of Route 50	19.25	7.13	37
Sacramento	072-1170-106	North of Route 50	33.97	5.98	18
Sacramento	072-2270-007	North of Route 50	20.43	0.09	>1
Sacramento	072-0027-138	South of Route 50	64.85	7.14	11
Sacramento	072-0027-028	South of Route 50	88.33	2.15	2
El Dorado	117-051-36-10	South of Route 50	15.12	0.74	5
El Dorado	120-070-03-10	North of Route 50	999.98	0.04	>1
El Dorado	120-070-02-10	North of Route 50	121.95	0.07	>1

Source: Mark Thomas & Company 2006

**Potential Impact 2.1.4: Construction of the Empire Ranch Road interchange is not expected to induce growth south of Route 50.**

As previously discussed, the interchange design includes terminating Empire Ranch Road at a dead-end on the south side of Route 50, without any break in access control. As such, the interchange would not create the need for an extension of services or growth inducement outside of Sacramento County’s Urban Service Boundary. Additionally, numerous obstacles complicate future development opportunities south of Route 50, including expanding the Urban Service Boundary and amending the Sacramento County General Plan and County zoning designations.

**2.1.3 Temporary Impacts**

Construction impacts relating to land use consist primarily of noise and air quality impacts created by traffic during construction. These are discussed in the relevant sections of this document.

**Potential Impact 2.1.5: Construction of the Empire Ranch Road will not impact seasonal grazing activities.**

Construction activities will not impact grazing operations as the construction area will be fenced off from the grazing lands. Because of the proximity of an existing highway, it is

expected grazing animals will not be negatively impacted by the presence of construction equipment or noise.

#### **2.1.4 Cumulative Impacts**

In the absence of project specific impacts, cumulative land use impacts are not expected.

#### **2.1.5 Mitigation, Minimization and Avoidance Measures**

##### **Land Use**

Potential Impacts 2.1.1 – 2.1.5 are less than significant. Therefore, no mitigation measures are required.

### **2.2. Transportation and Traffic**

The traffic section discusses the project's impacts on traffic and circulation, both during construction (construction impacts) and after completion of the project (long-term impacts). This section is based on information contained in the *Final Traffic Report for the Empire Ranch Road/Route 50 Interchange Project Report* (Fehr & Peers, April 2004) and the *Technical Memorandum for the Route 50/Empire Ranch Road Interchange Project* (June 22, 2005). The traffic report analyzes interchange alternatives 1 through 4; however, since interchange alternatives 2, 3 and 4 have been dropped from further consideration, this section only discusses interchange alternative 1 which includes construction of the interchange and auxiliary lanes. Analysis of the project includes both the interchange and auxiliary lanes. Construction of the auxiliary lanes is needed to improve operations on Route 50 and to accommodate the high traffic demand under construction year and design year conditions.

#### **2.2.1 Regulatory Setting**

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.

### 2.2.2 Affected Environment

This section describes the existing roadway system and operating conditions in the study area (Figure 2.2-1).

Level of Service is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F, with “A” indicating free-flowing conditions and “F” indicating stop-and-go traffic and delay. Figures 1-3 through 1-6 at the end of Chapter 1 illustrate Level of Service for unsignalized intersections, signalized intersections, multi-lane highways, and freeways.

According to the *State Route 50 Transportation Concept Report* (Caltrans, District 3, April 1998), Caltrans has adopted LOS F as the route concept LOS for Route 50 within the project vicinity. The *Sacramento County General Plan* (1993) establishes LOS E as the LOS standard for Route 50 within the study area. However, for the purpose of the interchange design study, LOS D or better conditions are considered desirable for freeway facilities including freeway mainline, ramp junctions, and ramp terminal intersections in the study area. The *City of Folsom General Plan* (1995) identifies LOS C for local roadways; therefore, LOS C is used for the local study intersection.

Table 2.2-1 lists the Tier 1 roadway improvements within the study area and the expected completion year. The coordination and timing of these improvements is discussed later in this section.

As shown in Table 2.2-1, no major improvements would be made to the Route 50 freeway mainline before 2006. However, the following improvements are anticipated to be in place on Route 50 within the project vicinity by 2010.

- **Silva Valley Parkway interchange:** A new interchange would be constructed on Route 50 at Silva Valley Parkway, which is located between El Dorado Hills Boulevard and Bass Lake Road.

- **High occupancy vehicle lanes:** HOV lanes would be added to Route 50 between El Dorado Hills Boulevard and South Shingle Springs Road/Ponderosa Road.

**Table 2.2-1: Route 50 Roadway Improvements in Metropolitan Transportation Plan**

Location	Roadway Improvements	Year
Route 50 at Empire Ranch Road	Construct interchange and provide auxiliary lanes from Empire Ranch Road to El Dorado Hills Boulevard (and a westbound auxiliary lane segment west of the Empire Ranch Road interchange).	2006
Route 50: El Dorado Hills Boulevard to South Shingle Springs/Ponderosa Road	Add High Occupancy Vehicle lanes	2010
Route 50: Silva Valley Parkway Interchange	Add a new interchange	2008
Route 50: El Dorado Hills Boulevard Interchange	Reconstruct interchange (phase 1) and construct new two-lane extension of Saratoga Way to Arrowhead Drive	2006
Empire Ranch Road: El Dorado County line to Iron Point Road	Construct four-lane section	2006
Iron Point Road: East of East Bidwell Street	Extend with four-lane section to El Dorado County	2005
Saratoga Way: County line (Iron Point Road) to Arrowhead Drive	Construct a new four-lane undivided road	2018
Sophia Parkway: Green Valley Road to Empire Ranch Road	Construct a new four-lane divided road	2006

Source: 2025 Metropolitan Transportation Plan, SACOG 2002

### 2.2.2.1. Roadway Description

Route 50 and the existing key roadways in the study area are described below.

- **Route 50** is a major east-west regional highway connecting Sacramento and the Central Valley with Lake Tahoe and the Sierra Nevada mountains. Beginning at the Interstate 80 separation, Route 50 travels through Yolo County, Sacramento County, El Dorado County, and the Route 50 California section ends at the California/Nevada state line. Within the study area, Route 50 is four-lane divided freeway and runs east-west through the City of Folsom. As the transportation backbone facility in the City of Folsom and El Dorado County, Route 50 carries a significant amount of commuter traffic and recreational travel to ski resorts and Nevada casinos.

- **East Bidwell Street** is a four- to six-lane north-south arterial in the City of Folsom that extends from Route 50 to Coloma Street in the Folsom Historic District. East Bidwell Street becomes Scott Road south of Route 50. The East Bidwell Street Road interchange is located west of the proposed Empire Ranch Road interchange.
- **Iron Point Road** is a four- to six-lane east-west arterial roadway in the City of Folsom that parallels Route 50 to the north from Folsom Boulevard to east of East Bidwell Street. This roadway is planned to extend east to Empire Ranch Road and eventually connect to Saratoga Way in El Dorado County.
- **El Dorado Hills Boulevard** is a four- to six-lane north-south arterial roadway in El Dorado County that extends from Route 50 to Green Valley Road. El Dorado Hills Boulevard becomes Latrobe Road south of Route 50 and Salmon Falls Road north of Green Valley Road. The El Dorado Hills Boulevard interchange is located east of the proposed Empire Ranch Road interchange.

#### 2.2.2.2. Study Locations

The operations analysis under existing conditions includes the following freeway facilities.

##### *Freeway Mainline Segments*

- Route 50 eastbound: East Bidwell Street to El Dorado Hills Boulevard
- Route 50 eastbound: El Dorado Hills Boulevard to Bass Lake Road
- Route 50 westbound: Bass Lake Road to El Dorado Hills Boulevard
- Route 50 westbound: El Dorado Hills Boulevard to East Bidwell Street

None of the study area intersections currently exist and, therefore, no analysis was required.

#### 2.2.2.3. Data Sources

The traffic analysis was conducted based on traffic flow, geometric roadway, and accident data. The following data was collected to complete the existing conditions analysis.

- The existing freeway mainline a.m. (6:30-7:30 in the westbound direction and 7:30-8:30 in the eastbound direction) and p.m. (4:00-6:00) peak period traffic volumes and lane configurations on Route 50 between East Bidwell Street and El Dorado Hills Boulevard were collected in June 2003.
- The a.m. and p.m. peak hour traffic volumes at the East Bidwell Street on- and off-ramps were collected in June 2002.



- The a.m. and p.m. peak hour traffic volumes at the El Dorado Hills Boulevard on- and off-ramps were collected in 2003.

#### 2.2.2.4. Existing Freeway Mainline Level of Service

Table 2.2-2 summarizes the a.m. and p.m. peak hour LOS on Route 50 between East Bidwell Street and El Dorado Hills Boulevard. For locations with constrained traffic volumes, Caltrans travel time analysis from the *2002 Congestion Report* (Caltrans District 3, December 2002) was used to estimate LOS.

**Table 2.2-2: Freeway Mainline LOS - Existing Conditions**

Freeway Mainline	AM Peak		PM Peak	
	V/C <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>1</sup>	LOS <sup>2</sup>
Route 50 Eastbound: East Bidwell Street to El Dorado Hills Boulevard	0.51	C	<b><u>F</u></b> <sup>3</sup>	
Route 50 Eastbound: El Dorado Hills Boulevard to Bass Lake Road	0.38	B	<b><u>&gt;1.00</u></b>	<b><u>F</u></b>
Route 50 Westbound: Bass Lake Road to El Dorado Hills Boulevard	<b><u>F</u></b> <sup>3</sup>		0.46	B
Route 50 Westbound: El Dorado Hills Boulevard to East Bidwell Street	<b><u>F</u></b> <sup>3</sup>		0.47	B

Notes:

(1) V/C is the volume to capacity ratio.

(2) LOS based on the El Dorado County General Plan.

(3) LOS F was identified at these locations based on the *2002 Congestion Report* (Caltrans District 3, December 2002).

**Bold font with underline indicates unacceptable operations.**

Source: Final Traffic Report

Table 2.2-2 shows that the Route 50 mainline segments between East Bidwell Street and Bass Lake Road operate unacceptably at LOS F in the peak directions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour). The Caltrans *2002 Congestion Report* defines congestion delay as a condition lasting for 15 minutes or longer where travel demand exceeds freeway design capacity, as evidenced by vehicular speeds of 35 mph or less during peak commute periods on a typical incident-free weekday.

### 2.2.2.5. Accident History

Table 2.2-3 shows a summary of a three-year traffic accident history on Route 50 between East Bidwell Street and El Dorado Hills Boulevard in the project vicinity. The accident database maintained by Caltrans is the source for this information.

**Table 2.2-3: Route 50 Accident History - 2001 through 2004**

Location	Total Accidents	Total Fatalities	Actual Accident Rate <sup>1</sup>	Average Accident Rate <sup>1</sup>
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	145	1	<b><u>1.52</u></b>	0.55
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	70	0	<b><u>0.73</u></b>	0.55

Notes: <sup>1</sup> per million vehicles

**Bold and underline** indicates that the actual accident rate on this segment is greater than the average accident rate for similar facilities.

Source: Final Traffic Study; Caltrans District 3 TASAS Table B, April 2001 to March 2004

The above table shows that the actual accident rate on eastbound Route 50 in the vicinity of the proposed interchange is nearly three times the average accident rate for similar freeway facilities. In the three-year data collection period, 145 accidents occurred on eastbound Route 50 with one fatality. Seventy accidents occurred on westbound Route 50 with no fatalities, but with a higher-than-average accident rate. Table 2.2-4 categorizes the recorded accidents by type.

**Table 2.2-4: Route 50 Accident History - Number of Accidents by Type**

Location	Accident Type				Total
	Rear End	Hit Object	Side-swipe	Other <sup>1</sup>	
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	110 (76%)	11 (8%)	16 (11%)	8 (5%)	145
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	32 (46%)	19 (27%)	7 (10%)	12 (17%)	70

Notes: <sup>1</sup> Other includes broadside, head-on, and over-turn collisions.

Source: Final Traffic Study and Caltrans District 3 TASAS Table B, April 2001 to March 2004.

As shown in Table 2.2-4, the most frequent type of accident on eastbound Route 50 in the project vicinity is rear-end collisions (76 percent). A high frequency of rear-end accidents is consistent with the stop-and-go peak direction traffic conditions that exist along this section

of Route 50. Rear-end collisions were also the most frequent type of accident on westbound Route 50 (46%), with hit objects being the second most frequent type of accident (27%).

As populations increase in the City, El Dorado Hills, and El Dorado County, there will also be an increase in long distance commuting since downtown Sacramento and Sacramento County will continue to remain large employment centers. The characteristics of this development suggest increased congestion, prolonged travel times, and more accidents.

#### **2.2.2.6. Construction Year Operations Analysis**

The 2006 operations analysis presents the physical and operational characteristics of the roadway system under construction year conditions.

##### ***Planned Improvements***

As mentioned earlier, the following improvements as identified in the 2027 MTP were assumed in place under build-year conditions.

- Phases 0 through 1.2B reconstruction of the El Dorado Hills Boulevard interchange is scheduled for completion by 2006. This includes the construct eastbound diagonal off-ramp, the construction of sound walls to accommodate the realignment of Saratoga Way, the realignment of Saratoga Way to Park Drive, improvements to the westbound on-ramp and off-ramp and improvements to El Dorado Hills Boulevard underneath Route 50.
- Iron Point Road would be extended east of East Bidwell Street to the El Dorado County line.
- Empire Ranch Road would be constructed as a four-lane roadway from the El Dorado County line (connecting to Sophia Parkway) south to Iron Point Road.

No freeway mainline or ramp terminal intersection improvements were assumed under 2006 analysis conditions beyond completion of the Empire Ranch Road Interchange project. As previously mentioned, the connection between Iron Point Road and Saratoga Way was not assumed to be in place by 2006.

##### ***Traffic Growth and Travel Patterns Comparison***

To evaluate the impact of the Empire Ranch Road Interchange project on traffic growth and travel patterns within the study area, the total volumes on the Route 50 ramps at the East Bidwell Street, Empire Ranch Road, and El Dorado Hills Boulevard interchanges were

compared between the Construction Year conditions No Build and Build Alternative. The results are summarized in Table 2.2-5.

**Table 2.2-5: Ramp Traffic Volume Comparison – Construction Year Conditions**

Ramps		No Build Alternative		Build Alternative	
		AM	PM	AM	PM
Eastbound Off-ramp	East Bidwell Street	630	440	630	420
	Empire Ranch Road	0	0	90	280
	El Dorado Hills Boulevard	1,670	2,090	1600	2070
	<b>Total</b>	<b>2,300</b>	<b>2,530</b>	<b>2,320</b>	<b>2,770</b>
Eastbound On-ramp	East Bidwell Street	1,280	1,570	940	1000
	Empire Ranch Road	0	0	610	790
	El Dorado Hills Boulevard	400	1,110	380	1070
	<b>Total</b>	<b>1,680</b>	<b>2,680</b>	<b>1,930</b>	<b>2,860</b>
Westbound Off-ramp	East Bidwell Street	1,310	1,240	720	810
	Empire Ranch Road	0	0	970	640
	El Dorado Hills Boulevard	1,040	510	1030	480
	<b>Total</b>	<b>2,350</b>	<b>1,750</b>	<b>2,720</b>	<b>1,930</b>
Westbound On-ramp	East Bidwell Street	510	430	470	430
	Empire Ranch Road	0	0	430	250
	El Dorado Hills Boulevard	1,990	1,730	2010	1680
	<b>Total</b>	<b>2,400</b>	<b>2,110</b>	<b>2,910</b>	<b>2,360</b>
All Ramps	East Bidwell Street	3,630	3,630	2,760	2,660
	Empire Ranch Road	0	0	2,100	1,960
	El Dorado Hills Boulevard	5,100	5,440	5,020	5,300
	<b>Total</b>	<b>8,730</b>	<b>9,070</b>	<b>9,880</b>	<b>9,920</b>

Source: Final Traffic Report

As shown in Table 2.2-5, approximately 25 percent of the ramp volume using the East Bidwell Street Road interchange would divert to the Empire Ranch Road interchange, and approximately two percent would divert from the El Dorado Hills Boulevard interchange. Overall, the Empire Ranch Road interchange ramps are expected to carry approximately 21 percent of the total ramp volumes across the three interchanges under Construction Year conditions.

In addition, the total volume of traffic at all three interchanges would increase by 1,150 vehicles during the a.m. peak hour and 850 vehicles during the p.m. peak hour under

Construction Year Build conditions when compared to Construction Year No Build conditions. Therefore, construction of the Empire Ranch Road Interchange project is expected to attract more traffic to Route 50 within the project area.

**Freeway Mainline Operations**

Freeway mainline analysis was conducted for the No Build and Build Alternative under Construction Year conditions. Traffic operations results for the study freeway segments are contained in Table 2.2-6.

**Table 2.2-6: Freeway Mainline LOS – Construction Year Conditions**

Freeway Mainline	AM Peak		PM Peak	
	V/C <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>1</sup>	LOS <sup>2</sup>
<b>No Build</b>				
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	0.62	C	<b><u>1.10</u> **</b>	<b><u>F</u> **</b>
Eastbound Route 50: El Dorado Hills Boulevard to Bass Lake Road	0.42	B	<b><u>1.09</u> **</b>	<b><u>F</u> **</b>
Westbound Route 50: Bass Lake Road to El Dorado Hills Boulevard	<b><u>1.05</u> **</b>	<b><u>F</u> **</b>	0.51	C
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	<b><u>1.10</u></b>	<b><u>F</u></b>	0.59	C
<b>Build Alternative</b>				
Eastbound Route 50: East Bidwell Street to Empire Ranch Road	0.36	B	0.64	D
Eastbound Route 50: Empire Ranch Road to El Dorado Hills Boulevard	0.52	C	0.86	D
Eastbound Route 50: El Dorado Hills Boulevard to Bass Lake Road	0.37	B	0.85	D
Westbound Route 50: Bass Lake Road to El Dorado Hills Boulevard	<b><u>1.05</u> **</b>	<b><u>F</u> **</b>	0.51	C
Westbound Route 50: El Dorado Hills Boulevard to Empire Ranch Road	0.88 **	D **	0.47	B
Westbound Route 50: Empire Ranch Road to East Bidwell Street	0.79	D	0.41	B

Notes:

(1) V/C is the volume to capacity ratio.

(2) LOS based on the El Dorado County General Plan.

**Bold font with underline** indicates unacceptable operations.

Double asterisks (\*\*) denote that the expected LOS would be worse than the calculated LOS shown in the table due to downstream LOS F conditions propagating upstream.

Source: Final Traffic Report

Table 2.2-6 shows that under the Construction Year No Build Alternative, Route 50 would continue to operate unacceptably at LOS F in the peak directions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour) within the study area. The peak hour LOS F conditions would spread to additional hours and would adversely affect traffic operations on the major arterial roadways connecting to Route 50 such as El Dorado Hills Boulevard.

Unacceptable operations under build conditions would occur on westbound Route 50 from Bass Lake Road to East Bidwell Street. Insufficient mainline capacity would create bottlenecks at the segments listed below.

- Westbound Route 50 between Bass Lake Road and El Dorado Hills Boulevard

Given that a bottleneck is projected to occur between Bass Lake Road and El Dorado Hills Boulevard, LOS F conditions on westbound Route 50 would extend at least from Bass Lake Road to Empire Ranch Road. It should be noted that this congestion and resultant queuing are improved compared to the “No Build” alternative due to a more balanced distribution of trips across three interchanges versus two interchanges under No Build conditions.

**Freeway Ramp Junction Operations**

Traffic operations for the ramp junctions were analyzed under Construction Year conditions and the results are summarized in Table 2.2-7.

**Table 2.2-7: Freeway Ramp Junction LOS – Construction Year Conditions**

Freeway Ramp Junction	AM Peak		PM Peak	
	Density <sup>1</sup>	LOS <sup>2</sup>	Density <sup>1</sup>	LOS <sup>2</sup>
Route 50 Eastbound Off-ramp to Empire Ranch Road	19	B	30	D
Route 50 Eastbound On-ramp from Empire Ranch Road	13	B	23	C
Route 50 Westbound Off-ramp to Empire Ranch Road	<b>≥43</b>	<b>F</b>	16	B
Route 50 Westbound On-ramp from Empire Ranch Road	32	D	21	C

Notes:

(1) Density in passenger cars per mile per lane.

(2) LOS calculations based on the HCM 2000 procedures.

Source: Final Traffic Report.

The LOS F conditions for the Empire Ranch Road westbound off-ramp during the a.m. peak hour are due to the Highway Capacity Manual (HCM) limitation of not accounting for additional mainline capacity associated with the continuous auxiliary lane. Due to the nature

of the HCM methodology (i.e., isolated-location analysis), the westbound Empire Ranch Road off-ramp will result in LOS F operations for the ramp junction area of influence. However, the density at the ramp junction is 21.7, or LOS C. Based on these results, the westbound Empire Ranch Road off-ramp will likely operate better than LOS F.

The LOS E conditions for the Empire Ranch Road westbound on-ramp during the a.m. peak hour are due to the mainline capacity limits described above and are not associated with the interchange design itself.

### ***Intersection Operations***

The study intersections were analyzed under Construction Year conditions for both No Build and Build Alternative. Under Construction Year conditions, Iron Point Road east of Empire Ranch Road would not be connected with Saratoga Way and other local roadways, so no traffic was assumed to be carried on Iron Point Road between Empire Ranch Road and the county line. Therefore, the Iron Point Road/Empire Ranch Road intersection was analyzed as a “L” (two-way) unsignalized intersection under the No Build Alternative and a “T” (three-way) signalized intersection under the Build Alternative. The results of the intersection operations analysis for the No Build and Build Alternative are summarized in Table 2.2-8.

As shown in Table 2.2-8, the Empire Ranch Road/Iron Point Road intersection would operate acceptably at LOS C or better under both peak hours for the Construction Year No Build Alternative. For the Build Alternative, all study intersections on Empire Ranch Road would operate acceptably at LOS C or better conditions during both peak hours.

Maximum queue lengths and available vehicle storage for critical movements at the study intersections are shown in Table 2.2-9. As shown, adequate vehicle storage would be provided under the Build Alternative for the critical movements at each study intersection.

**Table 2.2-8: Intersection LOS – Construction Year Conditions**

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS <sup>2</sup>	Delay <sup>1</sup>	LOS <sup>2</sup>
<i>No Build</i>					
Empire Ranch Road/Iron Point Road	Uncontrolled	0	A	0	A
<i>Build Alternative</i>					
Empire Ranch Road/Route 50 Eastbound Ramps	Side Street Stop	0	A	0	A
Empire Ranch Road/Route 50 Westbound Ramps	Traffic Signal	27	C	20	B
Empire Ranch Road/Iron Point Road	Traffic Signal	17	B	15	B

Notes:

(1) Control delay in seconds per vehicle.

(2) LOS calculations based on the 2000 HCM procedures.

Source: Final Traffic Report.

**Table 2.2-9: Intersection Queue Summary – Construction Year Conditions**

Intersection	Movement	Available Storage (ft)	Maximum Queue <sup>1</sup> (ft)	
			AM	PM
Empire Ranch Road/ Westbound Route 50 Ramps	Westbound Right	750	375	275
	Northbound Through	945 <sup>2</sup>	50	100
	Southbound	700	275	500
Empire Ranch Road/ Iron Point Road	Northbound Left	200	125	25
	Northbound Through	700	25	150
	Eastbound Left	300	50	100

Notes:

<sup>1</sup> The reported queue is the 95<sup>th</sup> percentile queue, which is typically used to size storage bays.

<sup>2</sup> The available storage between the eastbound and westbound Route 50 ramp terminal intersections.

Source: Final Traffic Report

**Ramp Meter Analysis**

A ramp metering analysis was conducted under 2006 conditions to determine the most restrictive metering rate for the eastbound and westbound Route 50 on-ramps that would be applied before vehicle queues exceed the available storage capacity at Empire Ranch Road. The ramp meter type for the Empire Ranch Road on-ramps was assumed to be one metered lane plus an HOV bypass.



Table 2.2-10 summarizes the results of the ramp metering analysis under Construction Year conditions. The metered on-ramps would operate within the minimum and maximum metering rates (240 and 1,000 vehicles per hour per lane, respectively) with the available storage.

**Table 2.2-10: Ramp Metering Operations – Construction Year Conditions**

On-Ramp	Number of Lanes	AM Peak Hour		PM Peak Hour	
		Peak-Hour Volume (vph)	Minimum Metering Rate (vphpl)	Peak-Hour Volume (vph)	Minimum Metering Rate (vphpl)
Empire Ranch Road Eastbound On-ramp	1 Metered Lane 1 HOV Bypass Lane	610	520	790	640
Empire Ranch Road Westbound On-ramp	1 Metered Lane 1 HOV Bypass Lane	430	370	250	240

Note: vphpl = vehicles per hour per lane  
Source: Final Traffic Report

### 2.2.2.7. Design Year Conditions Analysis

The design year analysis presents the physical and operational characteristics of the roadway system under 2026 conditions.

#### *Planned Improvements*

As mentioned earlier, the following improvements as identified in the 2027 MTP were included in the Design Year analysis (further discussion of these improvements is found later in this section):

- All roadway improvements assumed to be built by 2006 as described earlier.
- A new interchange on Route 50 at Silva Valley Parkway is scheduled for completion by Year 2008. This interchange would consist of one off-ramp and two on-ramps serving each direction of Route 50. These on- and off-ramps would be connected with the ramps at adjacent interchanges using auxiliary lanes (i.e., El Dorado Hills Boulevard interchange to the west and Bass Lake Road interchange to the east).
- HOV lanes on Route 50 between El Dorado Hills Boulevard and South Shingle Springs Road/Ponderosa Road are scheduled for completion by Year 2010.
- A four-lane roadway connection between Saratoga Way and Iron Point Road will be in place by 2018 per the 2027 MTP.

No other freeway mainline or ramp terminal intersection improvements were assumed under design year conditions beyond completion of the Empire Ranch Road Interchange project.

***Traffic Growth and Travel Patterns Comparison***

To evaluate the impact of the Empire Ranch Road Interchange project on traffic growth and travel patterns within the study area, the total volumes on the Route 50 ramps at the East Bidwell Street Road, Empire Ranch Road, and El Dorado Hills Boulevard interchanges were compared between the Design Year No Build and Build Alternatives. The results are summarized in Table 2.2-11.

Table 2.2-11 indicates that approximately 10 percent of the ramp volume using the East Bidwell Street interchange would divert to the Empire Ranch Road interchange, and approximately 12 percent would divert from the El Dorado Hills Boulevard interchange to the Empire Ranch Road interchange. Overall, the Empire Ranch Road interchange ramps are expected to carry approximately 22 percent of the total ramp volumes across the three interchanges. The addition of the Empire Ranch Road interchange would help to spread the distribution of trips among the interchanges so as not to overburden East Bidwell Street and El Dorado Hills Boulevard.

In addition, as shown in Table 2.2-11, the total volume of traffic at all three interchanges would increase by 800 vehicles during the a.m. peak hour and 500 vehicles during the p.m. peak hour under Design Year Build conditions when compared to Design Year No Build conditions. Therefore, construction of the Empire Ranch Road/Route 50 Interchange project is expected to attract more traffic to Route 50 within the project area.

Table 2.2-11 also shows the Design Year traffic demand at the Empire Ranch Road eastbound on-ramp and westbound off-ramp would decrease compared to Year Construction Year conditions. Drivers would use the connection between Saratoga Way and Iron Point Road (assumed to be in place by the design year) since it would provide a more direct connection between residential and commercial land uses in this area.

**Table 2.2-11: Ramp Traffic Volume Comparison – Design Year Conditions**

Ramps		No Build Alternative		Build Alternative	
		AM	PM	AM	PM
Eastbound Off-ramp	East Bidwell Street	860	900	840	740
	Empire Ranch Road	0	0	280	920
	El Dorado Hills Boulevard	2,000	2,030	1,850	1,510
	<b>Total</b>	<b>2,860</b>	<b>2,930</b>	<b>2,970</b>	<b>3,170</b>
Eastbound On-ramp	East Bidwell Street	1,470	1,580	1,270	1,180
	Empire Ranch Road	0	0	580	650
	El Dorado Hills Boulevard	830	1,690	690	1,430
	<b>Total</b>	<b>2,300</b>	<b>3,270</b>	<b>2,540</b>	<b>3,260</b>
Westbound Off-ramp	East Bidwell Street	1,310	1,410	990	1,260
	Empire Ranch Road	0	0	630	520
	El Dorado Hills Boulevard	1,490	1,050	1,370	830
	<b>Total</b>	<b>2,800</b>	<b>2,460</b>	<b>2,990</b>	<b>2,610</b>
Westbound On-ramp	East Bidwell Street	910	640	750	620
	Empire Ranch Road	0	0	950	590
	El Dorado Hills Boulevard	1,860	1,860	1,330	1,410
	<b>Total</b>	<b>2,770</b>	<b>2,500</b>	<b>3,030</b>	<b>2,620</b>
All Ramps	East Bidwell Street	4,550	4,530	3,850	3,800
	Empire Ranch Road	0	0	2,440	2,680
	El Dorado Hills Boulevard	6,180	6,630	5,240	5,180
	<b>Total</b>	<b>10,730</b>	<b>11,160</b>	<b>11,530</b>	<b>11,660</b>

Source: Final Traffic Report

***Freeway Mainline Operations***

Freeway mainline analysis was conducted for the No Build and Build Alternative under Design Year conditions. Traffic operations results for the study freeway sections are contained in Table 2.2-12.

Table 2.2-12 shows under the Design Year No Build Alternative, Route 50 would continue to operate unacceptably at LOS F in the peak directions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour) between El Dorado Hills Boulevard and East Bidwell Street Road. The peak hour LOS F conditions would spread to additional hours and would adversely affect traffic operations on the major arterial roadways connecting to Route 50 such as El Dorado Hills Boulevard.

Table 2.2-12: Freeway Mainline LOS – Design Year Conditions

Freeway Mainline	AM Peak		PM Peak	
	V/C <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>1</sup>	LOS <sup>2</sup>
<b><i>No Build</i></b>				
Eastbound Route 50: East Bidwell Street to El Dorado Hills Boulevard	0.83	D	<u>1.17</u>	<u>F</u>
Eastbound Route 50: El Dorado Hills Boulevard to Silva Valley Parkway	0.46	B	0.88	D
Westbound Route 50: Silva Valley Parkway to El Dorado Hills Boulevard	0.85 **	D **	0.57	C
Westbound Route 50: El Dorado Hills Boulevard to East Bidwell Street	<u>1.14</u>	<u>F</u>	0.89	D
<b><i>Build Alternative</i></b>				
Eastbound Route 50: East Bidwell Street to Empire Ranch Road	0.52	C	0.79	D
Eastbound Route 50: Empire Ranch Road to El Dorado Hills Boulevard	0.67	C	<u>0.91</u>	<u>E</u>
Eastbound Route 50: El Dorado Hills Boulevard to Silva Valley Parkway	0.48	B	<u>0.90</u>	<u>E</u>
Westbound Route 50: Silva Valley Parkway to El Dorado Hills Boulevard	0.85 **	D **	0.58	C
Westbound Route 50: El Dorado Hills Boulevard to Empire Ranch Road	0.85 **	D **	0.67	C
Westbound Route 50: Empire Ranch Road to East Bidwell Street	<u>0.90</u>	<u>E</u>	0.69	C

Notes:

(1) V/C is the volume to capacity ratio.

(2) LOS based on the El Dorado County General Plan.

Double asterisks (\*\*) denotes that the expected LOS would be worse than the calculated LOS shown in the table due to downstream LOS F conditions propagating upstream. **Bold font with underline** indicates unacceptable operations.

Source: Final Traffic Report

For the Build Alternative, the results for the freeway mainline analysis show unacceptable operations would continue under build conditions in the peak directions. Specifically, insufficient mainline capacity would create bottlenecks at the segments listed below.

- Westbound Route 50 between Empire Ranch Road and East Bidwell Street – a.m. peak
- Eastbound Route 50 between Empire Ranch Road and Silva Valley Parkway – p.m. peak

Congestion between Empire Ranch Road and East Bidwell Street would cause mainline queuing that would extend upstream (with or without the Empire Ranch Road interchange constructed). The queuing may be severe enough to affect operations in the vicinity of the El Dorado Hills Boulevard interchange. Given another bottleneck is projected to occur between

El Dorado Hills Boulevard and Bass Lake Road, LOS F conditions on westbound Route 50 would extend from Bass Lake Road to Empire Ranch Road.

**Freeway Ramp Junction Operations**

Traffic operations for the ramp junctions were analyzed under Design Year conditions and the results are summarized in Table 2.2-13. Table 2.2-13 shows all ramp junctions at Empire Ranch Road would operate at LOS D or better under 2026 Build conditions during both peak hours except for the following locations:

- The eastbound off-ramp would operate at LOS E during the p.m. peak hour due to the high volume on the ramp.
- The westbound off-ramp would operate unacceptably at LOS F during the a.m. peak hour due to the capacity constraint on the westbound Route 50 mainline segment between El Dorado Hills Boulevard and Empire Ranch Road.
- The westbound on-ramp would operate unacceptably at LOS F during the a.m. peak hour due to the capacity constraint on the westbound Route 50 mainline segment at the Empire Ranch Road interchange.

**Table 2.2-13: Freeway Ramp Junction LOS – Design Year Conditions**

Freeway Ramp Junction	AM Peak		PM Peak	
	Density <sup>1</sup>	LOS <sup>2</sup>	Density <sup>1</sup>	LOS <sup>2</sup>
Route 50 Eastbound Off-ramp to Empire Ranch Road	25	C	<u>36</u>	<u>E</u>
Route 50 Eastbound On-ramp from Empire Ranch Road	17	B	24	C
Route 50 Westbound Off-ramp to Empire Ranch Road	<u>&gt;43</u>	<u>F</u>	<u>38</u>	<u>E</u>
Route 50 Westbound On-ramp from Empire Ranch Road	<u>&gt;43</u>	<u>F</u>	27	C

Notes:

(1) Density in passenger cars per mile per lane.

(2) LOS calculations based on the HCM 2000 procedures.

**Bold font with underline** indicates unacceptable operations.

Source: Final Traffic Report

As stated earlier, the LOS F conditions for the Empire Ranch Road westbound off-ramp during the a.m. peak hour are due to the Highway Capacity Manual (HCM) limitation of not accounting for additional mainline capacity associated with the continuous auxiliary lane. Due to the nature of the HCM methodology (i.e., isolated-location analysis), the westbound Empire Ranch Road off-ramp will result in LOS F operations for the ramp junction area of influence. However, the density at the ramp junction is 20.2, or LOS C. Based on these results, the westbound Empire Ranch Road off-ramp will likely operate better than LOS F.

The LOS F condition for the Empire Ranch Road westbound on-ramp during the a.m. peak hour is due to the mainline capacity limits described above and is not associated with the interchange design itself.

**Intersection Operations**

The study intersections were analyzed under Design Year conditions. The results of the intersection operations analysis are summarized in Table 2.2-14.

**Table 2.2-14: Intersection LOS – Design Year Conditions**

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS <sup>2</sup>	Delay <sup>1</sup>	LOS <sup>2</sup>
<b>No Build</b>					
Empire Ranch Road/Iron Point Road	Signal	18	B	30	C
<b>Build Alternative</b>					
Empire Ranch Road/Route 50 Eastbound Ramps	Side- Street Stop	0	A	0	A
Empire Ranch Road/Route 50 Westbound Ramps	Signal	15	B	13	B
Empire Ranch Road/Iron Point Road	Signal	<b><u>44</u></b>	<b><u>D</u></b>	<b><u>57</u></b>	<b><u>E</u></b>

Notes:

(1) Delay in seconds per vehicle.

(2) LOS calculations based on the 2000 HCM procedures.

**Bold** font with underline indicates unacceptable operations.

Source: Final Traffic Report

As shown in Table 2.2-14, the Empire Ranch Road/Iron Point Road intersection would operate acceptably during both the a.m. and p.m. peak hours under No Build Alternative. For the Build Alternative, the two ramp terminal intersections would operate acceptably at LOS D or better during both peak hours. Unacceptable operations for the Build Alternative would occur at the Iron Point Road/Empire Ranch Road intersection during both peak hours.

Maximum queue lengths and available vehicle storage for critical movements at the study intersections are shown in Table 2.2-15.

**Table 2.2-15: Intersection Queue Summary – Design Year Conditions**

Intersection	Movement	Available Storage (ft)	Maximum Queue <sup>1</sup> (ft)	
			AM	PM
<b>No Build</b>				
Empire Ranch Road/ Iron Point Road	Southbound Left	300	225	250
	Southbound Right	300	150	75
	Eastbound Left	300	50	275
<b>Build Alternative</b>				
Empire Ranch Road/ Westbound Route 50 Ramps	Westbound Right	750	300	125
	Northbound Through	945 <sup>2</sup>	125	575
	Southbound	700	75	75
Empire Ranch Road/ Iron Point Road	Northbound Left	200	125	25
	Northbound Through	700	225	600
	Northbound Right	250	100	250
	Southbound Left	300	225	225
	Eastbound Left	300	50	150
	Westbound Left	300	175	225

Notes:

(1) The reported queue is the 95<sup>th</sup> percentile queue, which is typically used to size storage bays.

(2) The available storage between the eastbound and westbound Route 50 ramp terminal intersections.

Source: Final Traffic Report

As shown in Table 2.2-15, adequate vehicle storage would be provided for the critical movements at the Iron Point Road/Empire Ranch Road intersection under Design Year No Build conditions.

**Ramp Meter Analysis**

A ramp metering analysis was conducted under Design Year conditions to determine the most restrictive metering rate that the eastbound and westbound Route 50 on-ramps from Empire Ranch Road would accommodate before the vehicle queue exceeds available storage capacity. The ramp meter type for Empire Ranch Road on-ramps was assumed to be one metered lane plus an HOV bypass.

Table 2.2-16 summarizes the results of the ramp metering analysis under Design Year conditions. The metered on-ramps would operate within the minimum (240 vphpl) and maximum (1,000 vphpl) metering rates with the available storage assuming that Route 50

operates below capacity. Ramp queuing would be more extensive and may exceed available storage if Route 50 operates at LOS F.

**Table 2.2-16: Ramp Metering Operations – Design Year Conditions**

On-Ramp	Number of Lanes	AM Peak Hour		PM Peak Hour	
		Peak-Hour Volume (vph)	Minimum Metering Rate (vphpl)	Peak-Hour Volume (vph)	Minimum Metering Rate (vphpl)
Empire Ranch Road Eastbound On-ramp	1 Metered Lane 1 HOV Bypass Lane	580	500	650	530
Empire Ranch Road Westbound On-ramp	1 Metered Lane 1 HOV Bypass Lane	950	820	590	470

Notes: vphpl = vehicles per hour per lane.  
Source: Final Traffic Report

**Circulation Performance**

The interchange project is intended to improve accessibility to planned development in eastern Folsom and El Dorado Hills and to divert traffic away from other nearby congested Route 50 interchanges. Therefore, this project is expected to provide circulation benefits both regionally and locally. One quantitative measure of the area-wide benefits of a new interchange is the change in total travel distance and travel time.

Table 2.2-17 summarizes the percent change in Design Year vehicle miles of travel (VMT) and vehicle hours of travel (VHT) at a local-area, sub-regional and regional level. The boundaries for these areas are described below:

- **Local area** – includes the area bounded by Riley Street (in Folsom) and Serrano Parkway (in El Dorado Hills) to the north, Route 50 to the south, Silva Valley Road to the east, and Oak Avenue Parkway to the west.
- **Sub-Regional** – includes the area bounded by Natoma Street and Green Valley Road to the north, White Rock Road to the south, Silva Valley Road to the east, and Folsom Boulevard to the west.
- **Regional** – includes portions of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties.



**Table 2.2-17: Percent Change in VMT and VHT – Design Year Conditions**

Performance Measure	No Build	Build Alternative	Percent Difference
<b>Local-Area</b>			
Vehicle miles of travel	1,048,600	1,057,100	0.81%
Vehicle hours of travel	28,860	28,770	-0.30%
<b>Sub-Regional</b>			
Vehicle miles of travel	2,457,200	2,466,500	0.38%
Vehicle hours of travel	72,700	72,710	0%
<b>Regional</b>			
Vehicle miles of travel	65,666,100	65,715,300	0.07%
Vehicle hours of travel	1,842,650	1,841,980	-0.04%

Notes:

VMT – vehicle miles of travel

VHT – vehicle hours of travel

Source: Final Traffic Report

As shown, the proposed project will slightly increase the total VMT at the local-area level, while the total VHT reduces. This indicates the project may result in travel routes with a slightly longer distance; however, the project will provide some timesaving since these routes will have quicker travel times.

The proposed project will result in a smaller reduction in total VHT on a regional scale compared to the local-area scale. The slight change in regional VMT indicates that the proposed project is only a small part of the regional network (i.e., the six-county area). However, the reduction in VHT is measurable even on a regional scale, suggesting that the relatively minor connection (compared to total regional lane miles) is being located in a significantly congested location.

***Route 50 Corridor Improvement Issues***

As discussed earlier, there are a number of improvements planned for Route 50 from 2006 to 2010. Caltrans, the City of Folsom and El Dorado County have been working on the timing of the various improvements in order to match the improvements with the planned population and employment growth. Without a coordinated construction schedule, mainline Route 50 would be disrupted almost continually between about 2005 and 2010.

The proposed Empire Ranch Road interchange project includes both the interchange and the auxiliary lanes between Empire Ranch Road and El Dorado Hills Boulevard and a westbound auxiliary lane segment west of the Empire Ranch Road interchange. The intent of the

auxiliary lanes is to mitigate impacts to the traffic operations on Route 50 due to the construction of the interchange. The likely order of construction based on current funding is construction of the auxiliary lanes followed by construction of the interchange. Interchange construction should also consider the need for alternative routes into El Dorado Hills when reconstruction of the El Dorado Hills Boulevard interchange begins. At a minimum, the planned improvement projects listed above should not be advanced through the final steps of the project development process as independent projects. Instead, the segment of Route 50 between Bass Lake Road and East Bidwell Street should be considered an integrated system when developing final construction phasing plans.

Even with a closely coordinated construction schedule, the high traffic demand in the study corridor and lack of alternative routes would cause potential congestion and safety issues on Route 50 in the near term. The steep and rolling terrain severely limits visibility in this area and construction activity would exacerbate these conditions. In addition, congestion on Route 50 would prohibit traffic merging onto the mainline from ramps and cause queues back onto arterials such as East Bidwell Street and El Dorado Hills Boulevard. To address these potential congestion and safety issues, other mitigation measures besides alternative routes need to be considered.

### **2.2.3 Permanent Impacts**

**Potential Impact 2.3.1: Construction of the project would result in a change in traffic patterns by diverting ramp volumes from both the East Bidwell Street interchange (25 percent) and the El Dorado Hills Boulevard/Latrobe Road interchange (2 percent) to the Empire Ranch Road interchange in 2006. In total, traffic is forecast to increase at all three interchanges by approximately 10 percent in 2006 and approximately 12 percent in the Design Year.**

Construction of the Empire Ranch Road interchange is expected to attract more traffic to Route 50 in the project area due to traffic diversions from adjacent congested interchanges. The total volume of traffic at all three interchanges would increase by 1,150 vehicles during the a.m. peak hour and 850 vehicles during the p.m. peak hour under Construction Year Build conditions when compared to Construction Year No Build conditions. In the Design Year, the Empire Ranch Road interchange is expected to carry approximately 22 percent of the total ramp volumes across the three interchanges. The addition of the Empire Ranch Road interchange would help to spread the distribution of trips among the interchanges to as not to

overburden East Bidwell Street and El Dorado Hills Boulevard. In addition, the total volume of traffic at all three interchanges would increase by 800 vehicles during the a.m. peak hour and 500 vehicles during the p.m. peak hour under Design Year Build conditions when compared to Design Year No Build conditions.

**Potential Impact 2.3.2: Construction of the project would result in increased traffic on Route 50 and continued unacceptable conditions on Route 50 in the peak directions in Construction Year and Design Year conditions; however, an improvement over the No Build condition would occur since there would be a more balanced distribution of trips across three interchanges versus two interchanges under the No Build conditions.**

Under the Construction Year No Build conditions, Route 50 would continue to operate unacceptably at LOS F in the peak directions (i.e., westbound during the a.m. peak hour and eastbound during the p.m. peak hour) within the study area. The peak hour LOS F conditions would spread to additional hours and would adversely affect traffic operations on the major arterial roadways connecting to Route 50 such as El Dorado Hills Boulevard.

For the Build Alternative, the results for the freeway mainline analysis indicate unacceptable operations under build conditions would occur on westbound Route 50 from Bass Lake Road to East Bidwell Street. Insufficient mainline capacity would create bottlenecks at the segments listed below

- Westbound Route 50 between Empire Ranch Road and East Bidwell Street
- Westbound Route 50 between Bass Lake Road and El Dorado Hills Boulevard

Congestion between Empire Ranch Road and East Bidwell Street (during the a.m. peak period) would cause mainline queuing that would extend upstream. The queuing may be severe enough to affect operations in the vicinity of the El Dorado Hills Boulevard interchange. Given another bottleneck is projected to occur between Bass Lake Road and El Dorado Hills Boulevard, LOS F conditions on westbound Route 50 would extend at least from Bass Lake Road to Empire Ranch Road. It should be noted that this congestion and resultant queuing are improved compared to the “No Build” alternative due to a more balanced distribution of trips across three interchanges versus two interchanges under No Build conditions.

Under the Design Year No Build Alternative, Route 50 would continue to operate unacceptably at LOS F in the peak directions (i.e., westbound during the a.m. peak hour and

eastbound during the p.m. peak hour) between El Dorado Hills Boulevard and East Bidwell Street Road. The peak hour LOS F conditions would spread to additional hours and would adversely affect traffic operations on the major arterial roadways connecting to Route 50 such as El Dorado Hills Boulevard.

The results for the freeway mainline analysis in Design Year conditions are the same under the build alternative. Unacceptable operations would continue under the build condition in the peak directions. Specifically, insufficient mainline capacity would create bottlenecks at the segments listed below.

- Westbound Route 50 between Empire Ranch Road and East Bidwell Street – a.m. peak
- Eastbound Route 50 between Empire Ranch Road and Silva Valley Parkway – p.m. peak

Congestion between Empire Ranch Road and East Bidwell Street would cause mainline queuing that would extend upstream (with or without the Empire Ranch Road interchange). The queuing may be severe enough to affect operations in the vicinity of the El Dorado Hills Boulevard interchange. Given that another bottleneck is projected to occur between El Dorado Hills Boulevard and Bass Lake Road, LOS F conditions on westbound Route 50 would extend from Bass Lake Road to Empire Ranch Road.

**Potential Impact 2.3.3: Construction of the project would result in unacceptable traffic operations at the Route 50 westbound ramps at Empire Ranch Road during a.m. peak hour (Construction Year Build Alternative) and during the a.m. peak hour and the p.m. peak hour (Design Year Build Alternative) due to mainline capacity limits.**

Traffic operations under Construction Year conditions result in LOS F/E for the Empire Ranch Road westbound ramps during the a.m. hour; however, these conditions are due to the mainline capacity limits and are not associated with the interchange design. All ramp junctions at Empire Ranch Road would operate at LOS D or better under Design Year Build conditions during both peak hours except for the following locations:

- The eastbound off-ramp would operate at LOS E during the p.m. peak hour due to the high volume on the ramp.
- The westbound off-ramp would operate unacceptably at LOS F during the a.m. peak hour due to the capacity constraint on the westbound Route 50 mainline segment between El Dorado Hills Boulevard and Empire Ranch Road.

- The westbound on-ramp would operate unacceptably at LOS F during the a.m. peak hour due to the capacity constraint on the westbound Route 50 mainline segment at the Empire Ranch Road interchange.

Similar to Construction Year conditions, the LOS F conditions in the Design Year for the Empire Ranch Road westbound ramps during the a.m. peak hour are due to the mainline capacity limits and are not associated with the interchange design itself.

**Potential Impact 2.3.4: Construction of the project would result in acceptable traffic operations at most of the study intersections (Construction Year and Design Year Build Alternatives); however, unacceptable operations at the Iron Point Road/Empire Ranch Road intersection.**

All study intersections on Empire Ranch Road would operate acceptably at LOS C or better during both peak hours for the Construction Year No Build Alternative as well as the Construction Year Build Alternative. Most of the study intersections on Empire Ranch Road would operate acceptably during both the a.m. and p.m. peak hours for the Design Year No Build Alternative and would operate acceptably at LOS D or better during both peak hours for the Design Year Build Alternative with the exception of the Iron Point Road/Empire Ranch Road intersection due to the signal phasing at the westbound Route 50 ramps.

#### **2.2.4 Temporary Impacts**

**Potential Impact 2.3.5: Construction of the project would cause a temporary disruption of traffic patterns and emergency services during construction.**

Construction activities associated with the proposed project would result in disruption of traffic patterns in the project area. Temporary construction impacts are anticipated to result from construction of the interchange, construction of the auxiliary lanes, and blasting that may be required to remove hard rock in the construction area.

The proposed Empire Ranch Road interchange is one of four major projects along the Route 50 corridor currently programmed to be constructed by 2010. These projects are listed below.

- Construct new Route 50 interchange at Empire Ranch Road
- Reconstruct the El Dorado Hills Boulevard Interchange
- Construct new Route 50 interchange at Silva Valley Parkway

- Extend HOV lanes from their current terminus at El Dorado Hills Boulevard to Shingle Springs/Ponderosa Road interchange

Excluding the Empire Ranch Road interchange, each interchange project includes auxiliary lanes that extend the full length of Route 50 in both directions between East Bidwell Street and Bass Lake Road. The timing of these improvements is intended to match with the planned population and employment growth but introduce implementation and construction challenges for Caltrans, City, and El Dorado County. Without a coordinated construction schedule, mainline Route 50 would be disrupted almost continually between about 2005 and 2010.

Even with a closely coordinated construction schedule, the high traffic demand in the project area would contribute to delays from these corridor improvements; however, these delays are temporary in nature and mitigation measures are listed in the following mitigation section.

#### **2.2.4.1. Cumulative Impacts**

Cumulative traffic impacts are discussed throughout this section.

#### **2.2.5 Mitigation, Minimization and Avoidance Measures Transportation and Traffic**

No measures are required for Potential Impact 2.3-1.

No measures are required for Potential Impact 2.3.2.

No measures are required for Potential Impact 2.3-3.

1. Modify the design of the Iron Point Road/Empire Ranch Road intersection to provide acceptable level of service through construction of the following improvements (Potential Impact 2.3-4):

- a. Provide a third through lane on Iron Point Road that extends a minimum of 305 m (1,000 feet) in each direction (east and west) of Empire Ranch Road.
- b. Provide a “free” right-turn movement for the northbound and westbound approaches to the Iron Point Road/Empire Ranch Road intersection.

2. Implement traffic control measures to reduce disruption of traffic patterns during construction activities. Caltrans will require the following measures to reduce construction-related traffic impacts (Potential Impact 2.3-5).

- a. The segment of Route 50 between Bass Lake Road and East Bidwell Street will be considered an integrated system when developing final construction phasing plans.
- b. The contractor will be required to prepare and implement a TMP that identifies the locations of possible detours and signage to facilitate traffic patterns and through-traffic requirements.
- c. ITS field elements will monitor traffic and provide real-time information to transportation officials. This information will enable them to effectively manage traffic, clear incidents, and inform drivers of potential delays.
- d. Real-time traffic information and video images of ramps and arterials in the project area can be posted on websites such as the Highway 50 Corridor site. This will enable drivers to assess traffic conditions and determine the best course of action before leaving their home or offices.
- e. Traffic delay information can be posted on permanent or temporary changeable message signs located in advanced of key alternate routes (e.g., Iron Point Road) or Route 50 ramps. This is designed to provide adequate advanced notice in the event that traffic diversion is necessary.
- f. Traffic information can also be broadcast on local Highway Advisory Radio to provide in-vehicle information throughout the subject area. By 2006, information may also be broadcast using images to vehicles equipped with navigation systems.
- g. ITS improvement in the future may also take advantage of E911 capability to be available on cellular telephone network. This GPS-based service is expected to improve incident detection and response time.

## **2.3. Cultural Resources**

A Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR) were prepared for the proposed project and are available for review by qualified individuals at the City of Folsom Public Works Department. Study methods and regulatory background are presented in the HPSR and ASR.

### **2.3.1 Affected Environment**

An Area of Potential Effects (APE) map was prepared to assist in defining the project limits involved in the cultural analyses. The APE is intended to encompass the maximum limit of any potential physical disturbances that result from construction activities associated with the proposed undertaking as described in the project description, including temporary construction easements, disposal sites, equipment parking/staging areas, utility relocations, and all existing and proposed new right-of-way.

The APE was established as approximately 3 kilometers (2 miles) long and varies in width from approximately 600 meters (2,000 feet) at the proposed Empire Ranch Road Interchange to 70 meters (200 feet) along the highway in southeastern Folsom, Sacramento, and El Dorado counties. The vertical extent of ground disturbing activities varies throughout the APE, depending on the type of construction activity. Ground disturbing activities include driven piles at the north overcrossing abutment, and drilled piles at the center column within the median of the freeway.

No cultural resources were identified in the APE.

### **2.3.2 Permanent Impacts.**

No cultural resources were identified in the APE. Therefore, no permanent impacts to cultural resources will result from the proposed project.

### **2.3.3 Temporary Impacts.**

No cultural resources were identified in the APE. Therefore, no temporary impacts to cultural resources will result from the proposed project.



### **2.3.4 Cumulative Impacts.**

No cultural resources were identified in the APE. Therefore, no cumulative impacts to cultural resources will result from the proposed project.

### **2.3.5 Mitigation, Minimization and Avoidance Measures**

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

## **PHYSICAL ENVIRONMENT**

### **2.4. Hydrology and Water Quality**

#### **2.4.1 Affected Environment**

The project site is located in the Central Valley Region of the Regional Water Quality Control Board (RWQCB) for the State of California. This region includes the Sacramento and San Joaquin River drainage basins. The region is bounded on the east by the Sierra Nevada Mountains and on the west by the Coast Range and Klamath Mountains. The Central Valley region extends from the California/Oregon border, south to the headwaters of the San Joaquin River. Within this context, the project site is located within the Sacramento River basin. This basin covers 27,210 square miles and includes all areas drained by the Sacramento River and its tributaries. The major tributaries to the Sacramento River are the Pit, Feather, Yuba, Bear, American, Cottonwood, Stony, Cache, and Putah (RWQCB 1994).

The Porter-Cologne Water Quality Control Act of 1969 (P-C) requires that each Regional Water Quality Control Board within the State formulate or adopt water quality control plans for all areas in the region. The Water Quality Control Plan for the Central Valley Region was adopted by the Regional Water Quality Control Board in 1994. The Central Valley Region Basin Plan (Basin Plan), which includes the project area, contains standards and recommended control measures for use by other local, State, or federal agencies to avoid degrading water quality.

Tributaries to Carson Creek cross the project site. Carson Creek is tributary to Deer Creek which is ultimately tributary to the Cosumnes River. Beneficial uses for the Cosumnes River basin are identified as: municipal and domestic supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, migration, spawning, and wildlife habitat. Table 2.4-1 presents the definitions of these beneficial uses (RWQCB 1994).

The drainage system in the project area is primarily influenced by the hills and valleys surrounding the Route 50. Site drainage appears to be by gravity flow to the west side of the project towards the Sacramento Valley, or is collected in local drainage systems or nearby creeks and tributaries (Parikh 2003a). The local drainages, including Carson Creek and Deer Creek, flow in a southwest direction.

Under the guidelines set forth within the Clean Water Act (CWA), the U.S. Environmental Protection Agency (EPA) has promulgated the National Pollutant Discharge Elimination System (NPDES) to control the discharge of wastewater to surface water. Under the NPDES program, federal regulations require construction projects encompassing one or more acres to obtain a NPDES permit for the discharge of stormwater to surface waters. These regulations require the implementation of Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT). The intent of the NPDES program is to reduce or eliminate stormwater pollution relating to construction activities. Within California, the State Water Resources Control Board (SWRCB) administers the NPDES program. Prior to the commencement of construction activities, authorization of stormwater discharge requires issuance of a Notice of Intent, permit, and payment of fees. Developers must also prepare a Storm Water Pollution Prevention Plan (SWPPP) to implement BATs, BCTs, and Best Management Practices (BMP). Discharge limitations imposed by the NPDES permit will require compliance with water quality standards outlined within the Central Valley Basin Plan.

The City is a permittee to the Sacramento County NPDES Municipal Stormwater Permit. The permit was renewed in 2002 and prescribes “activities and performance standards designed to reduce pollutants in stormwater discharges to the maximum extent practicable.”

As part of the NPDES program, the City has prepared a SWPPP to address stormwater discharges and construction activities. Generally, the SWPPP requires the maintenance of existing pre-development stormwater discharge levels and preventing pollutant runoff

through integration of BMPs and/or installation and maintenance of source control. BMP are expected to control peak flows, remove pollutants to certain levels, and function post-construction. El Dorado County also implements a SWPPP which requires maintaining pre-existing stormwater discharge levels and implementing BMPs.

**Table 2.4-1: Beneficial Uses for the Cosumnes River**

<p>MUN (municipal and domestic supply) = Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.</p>
<p>AGR (agricultural supply) = Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.</p>
<p>REC-1 (water contact recreation) = Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, whitewater activities, fishing, or uses of natural hot springs.</p>
<p>REC-2 (non-contact water recreation) = Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beach combing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.</p>
<p>WARM (warm freshwater habitat) = Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.</p>
<p>COLD (cold freshwater habitat) = Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.</p>
<p>MIGR (migration of aquatic organisms) = Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.</p>
<p>WILD (wildlife habitat) = Uses of waters that support terrestrial or wetland ecosystems including, but not limited to, the preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g. mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.</p>
<p>SPWN (spawning, reproduction, and/or early development) = Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.</p>

Source: RWQCB 1994

## **2.4.2 Permanent Impacts**

### **Potential Impact 2.4.1: The proposed project will increase the amount of stormwater runoff and pollutants discharged into nearby waterways.**

Route 50 crosses over tributaries of Carson Creek at multiple locations within the project corridor. The proposed project intends to widen the highway which will increase existing paved surface areas. In turn, this will increase the volume of stormwater runoff that comes in contact with roadway surfaces. Roadways contain oil, grease, petroleum products, zinc, copper, lead, cadmium, iron, or other trace metals. Concentrations of these pollutants in stormwater runoff would be greatest during the “first flush” storm event, generally the first major rains of the season.

Cut and fill areas are subject to soil erosion. Because these areas are exposed to wind and rain, the potential for soil erosion is greater than on vegetated slopes. Increased soil erosion would exacerbate sedimentation within the watershed and downstream waterways.

Implementation of the proposed project will necessitate construction or extension of culverts at tributary crossings. Culverts tend to increase water velocities as water is funneled through the culvert and therefore proper design is critical. With proper design of culverts, increases in water velocity can be controlled and downstream bank erosion or channel scouring can be minimized. Sedimentation and siltation can occur as a result of these impacts.

Pollutants and sediment impact aquatic systems in a variety of ways. For example, toxic pollutants can kill aquatic species outright or cause physiological damage over the long term. Sediments can decrease visibility, alter channel substrates, and contribute excess nutrients to the system. These nutrients can cause excessive plant growth or “algal blooms” that deplete oxygen resources as plants die and decompose. Algal blooms can ultimately cause major die-offs of aquatic species.

### **Potential Impact 2.4.2: The proposed project is not expected to impact ground water recharge.**

Implementation of the proposed project would entail construction of impervious roadway surfaces. Although these surfaces will prevent immediate groundwater infiltration, the proposed project is not expected to impede groundwater recharge because of the narrow and linear nature of the project. Likewise, the project is not in an area underlain by an important

aquifer or underground water resources. The proposed project does not propose to use groundwater supplies.

### **2.4.3 Temporary Impacts**

#### **Potential Impact 2.4.3: Construction of the proposed project would create soil erosion due to exposure of soils that would negatively impact water quality if discharged to nearby waterways.**

Construction of the proposed project will cause disturbances to the ground surface from earthwork, including excavating and grading. These activities would potentially increase the amount of sediments entering Carson Creek and other drainages. Runoff during the winter season is of greater concern because of the potential erosion of unprotected or graded surfaces. Sediments suspended in runoff would be carried downstream, where, if not controlled, would accumulate in downstream water courses, potentially harming downstream aquatic resources and water quality.

Materials used during construction of roadways have chemicals potentially harmful to aquatic resources and water quality. Accidents or improper use of these materials would release contaminants to the environment. Additionally, oil and other petroleum products used to maintain and operate construction equipment could be accidentally released. These compounds would be acutely toxic to aquatic species. To prevent the release of these compounds, measures and BMPs have been provided to mitigate potential impacts. As stated below, specific mitigation measures and BMPs will be identified on the SWPPP which will be prepared in consultation with appropriate agencies to assure adequacy of mitigation measures and BMPs. Appropriate measures will be in place prior to the commencement of construction to prevent potential water quality related impacts.

### **2.4.4 Cumulative Impacts**

Other projects located within the Carson Creek watershed, specifically the Russell (Empire) Ranch Specific Plan and the extension of Iron Point Road could have adverse impacts to water quality. These projects will be required to mitigate impacts according to local regulations and state and federal law. Compliance with applicable regulations and laws will minimize cumulative impacts to less than significant.

## 2.4.5 Mitigation, Minimization and Avoidance Measures

### Hydrology and Water Quality

1. The proposed project shall comply with any relevant City, El Dorado County, and Caltrans requirements for stormwater discharge, including maintaining existing stormwater discharge volumes. Additionally, the contractor will prepare and submit a SWPPP and Notice of Intent (NOI) to the RWQCB for approval. Compliance with the requirements of the NPDES program is required and will minimize impacts to water quality within Carson Creek and other drainages (Potential Impacts 2.4.1 and 2.4.3).

The following measures should be considered when preparing the SWPPP:

- a. Scheduling of construction activities near Carson Creek shall avoid the rainy season.
- b. Land disturbing activities and the installation of erosion and sedimentation control practices shall be coordinated to reduce on-site erosion and off-site remediation. These measures include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, sediment desilting basins, sediment traps, and check dams.
- c. Existing vegetation shall be protected where feasible to provide an effective form of erosion and sediment control, as well as watershed protection, dust and pollution control, and shade.
- d. Loose bulk materials applied to the soil surface as a temporary cover to protect bare soils from rainfall impact, increase infiltration, and reduce runoff and erosion.
- e. Stabilizing materials shall be applied to the soil surface to prevent the movement of dust at the project site due to traffic, wind, and grading activities.
- f. Roughening and terracing shall be implemented, as feasible, to reduce erosion potential, decrease runoff velocities, and trap sediment, aiding in the establishment of vegetative cover from seed and increasing infiltration into soil.
- g. Where possible, all areas shall be restored to pre-construction contours and revegetated with native species. Hydroseeding will be implemented as a temporary measure, if feasible.
- h. Provide berms along the tops of slopes to prevent water from running uncontrolled down the slopes.
- i. Collect water in berms at the tops of slopes and control the flow in an erosion-proof drainage system. Sediment that is collected within these berms will be allowed to “settle out” and will be removed from the site.



- j. Provide energy dissipaters and erosion control pads at the bottom of slope drains. Other flow conveyance control mechanisms include earth dikes, swales, or ditches. Streambank stabilization measures shall also be implemented.
- k. All demolished and unused material will be hauled off-site.
- l. All erosion control measures and water pollution control measures will be properly maintained until the site has been returned to a pre-construction state. The condition and effectiveness of the measures will be monitored until they are removed. At a minimum, all measures shall be inspected after every rain event and weekly throughout the rainy season.
- m. Construction roadways will be properly protected to prevent excess erosion and sedimentation.
- n. All vehicle and equipment maintenance procedures will be conducted off-site. In the event of an emergency, maintenance will occur away from the river channel.
- o. Any concrete curing activities will be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
- p. All construction materials, vehicles, stockpiles, and staging areas will be situated away from waterways, as feasible. All stockpiles will be covered, as feasible.
- q. The SWPPP will include spill prevention and counter measures.
- r. The area of construction and disturbance will be limited to as small an area as feasible.
- s. The SWPPP will include measures to avoid creating contaminants, minimize the release of contaminants, and water quality control measures to minimize contaminants from entering surface water or percolating into the ground.
- t. The water quality control measures shall address both construction and operation periods.
- u. Fluvial erosion and water pollution related to construction is controlled by a pollution control program which shall be filed with the appropriate agency and kept current throughout site development.
- v. The SWPPP shall include BMPs as appropriate, given the specific circumstances of the site and project.
- w. The RWQCB may request to comment and approve the SWPPP.
- x. The contractor will consult with the Caltrans, City of Folsom, and El Dorado County to ensure compliance with SWPPPs.

No measures are required for Potential Impact 2.4.2.

## 2.5. Noise

A Noise Impact Analysis has been prepared for the project and is available for review at the City of Folsom Public Works Department.

### 2.5.1 Affected Environment

#### 2.5.1.1. Fundamental Traffic Noise Concepts

Sound pressure level (SPL) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called bels: a bel is subdivided into 10 decibels, abbreviated dB. Decibels are logarithmic units; SPL cannot be added or subtracted by ordinary arithmetic means. In other words, sound energy must be doubled to produce a 3 dBA increase. If two sound levels differ by 10 dBA or more, the combined SPL is equal to the higher SPL; in other words, the lower sound level does not increase the higher sound level. Noise levels for traffic noise reports are typically reported in terms of A-weighted dBs. In environmental noise studies, A-weighted SPLs are commonly referred to as noise levels. It is widely accepted that the average healthy ear can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Various noise descriptors have been developed to describe time-varying noise levels. These noise descriptors are defined at length in the Noise Impact Analysis.

*Equivalent Sound Level ( $L_{eq}$ ):*  $L_{eq}$  is the steady-state sound level that, in a stated period, would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The one-hour A-weighted equivalent sound level,  $L_{eq}(h)$ , is the energy average of the A-weighted sound levels occurring during a one-hour period and is the basis for the Noise Abatement Criteria (NAC) used by Caltrans and FHWA.

*Maximum Sound Level ( $L_{max}$ ):*  $L_{max}$  is the highest instantaneous sound level measured during a specified period.

### **2.5.1.2. Federal and State Regulations, Standards, and Policies**

Federal and State regulations, standards, and policies relating to traffic noise are discussed in detail in the Protocol (Caltrans, 1998a). Detailed information is also provided in the Noise Impact Analysis. Transportation projects affected by the Protocol are referred to as Type 1 projects, defined as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes. Federal regulations require that Caltrans must identify noise abatement measures that are feasible and reasonable as well as noise impacts for which no apparent solution is available. FHWA NAC are identified in the Noise Impact Analysis.

Section 216 of the California Streets and Highways Code states that if the interior noise level produced by freeway traffic or the construction of a freeway exceeds 52 dBA  $L_{eq}$ , Caltrans shall undertake a noise abatement program in any such classroom, library, multipurpose room, or space used for pupil personnel services to reduce the freeway traffic noise level therein to 52 dBA  $L_{eq}$  or less.

The Protocol defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA  $L_{eq}(h)$ . The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within one dBA of the NAC.

### **2.5.1.3. Study Methods and Procedures**

Sensitive receptors were identified in each of the land use categories identified within the project vicinity. These land uses include single family residential and commercial structures. A total of forty two receptor locations were modeled to represent the land uses in the project vicinity. These modeled receptor locations are shown in Figure 2.5-1.

Noise modeling information is provided in the Noise Impact Analysis.

### **2.5.1.4. Existing Noise Environment**

Ambient (20-minute) noise measurements were conducted to document existing noise levels at six representative sensitive receptor locations along the project alignment (see Figure 2.5-1) and are presented in Table 2.5-1. Table 2.5-3 describes the physical location of the noise monitoring. These noise measurements were used to calibrate the noise model and to predict

the noise levels at all thirty-five modeled sensitive receptors in the project area. The noise monitoring results, traffic counts, and calibration are included in Noise Impact Analysis.

**Table 2.5-1: Short-term Ambient Noise Monitoring Results**

Receptor #	Date	Start Time	Duration (minutes)	L <sub>eq</sub>
M-1	11/11/2003	8:58 a.m.	20	59
M-2	11/11/2003	10:00 a.m.	20	59
M-3	11/11/2003	10:41 a.m.	20	58
M-5	11/11/2003	12:07 p.m.	20	51

Source: LSA 2003

**Table 2.5-2: Physical Location of Noise Level Measurements**

Receptor #	Location Description	Major Noise Sources
M-1	804 Belhaven Way. In the backyard. Residential units in current development.	Traffic on Route 50
M-2	357 Platt Circle. In the backyard.	Traffic on Route 50
M-3	707 Platt Circle. In the backyard.	Traffic on Route 50
M-5	Corner of Carpenter Hill and Branding Iron. Residential community in current development.	Traffic on Route 50

Source: LSA 2003

All of the modeled receptor locations in the project area are located 85 to 220 m (278 to 722 ft) from Route 50. The Sound32 noise model is known to overestimate the noise levels at distant receptor locations.

The existing noise levels at all 35 receptor locations are shown in Table 2.5-3. As shown, no receptors currently approach or exceed the NAC.

**Table 2.5-3: Existing Traffic Noise Levels (dBA Leq)**

Rec #	Location	Type of Development	# of Units Represented	Noise Abatement Category	Measured Existing Noise Level	Modeled Existing Noise Level
R-1	Empire Ranch (Village 63)	Residential	2	B (67)	N/A <sup>1</sup>	54
R-2	Empire Ranch (Village 63)	Residential	2	B (67)	N/A	54
R-3	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	56
R-4	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	58
R-5	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	57
R-6	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	57
R-7	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	57
R-8	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	58
R-9	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	59
R-10	Empire Ranch (Village 63)	Residential	3	B (67)	N/A	59
R-11	Empire Ranch (Village 63)	Residential	2	B (67)	N/A	58
R-12	Empire Ranch (Village 63)	Residential	2	B (67)	N/A	57
R-13	Empire Ranch	Residential	N/A <sup>2</sup>	B (67)	N/A	48
R-14	Empire Ranch	Residential	N/A	B (67)	N/A	53
R-15	Empire Ranch	Residential	N/A	B (67)	N/A	52
R-16	Empire Ranch	Residential	N/A	B (67)	N/A	53
R-17	Empire Ranch	Residential	N/A	B (67)	N/A	48
R-18	Empire Ranch	Residential	N/A	B (67)	N/A	54
R-19	Empire Ranch	Residential	N/A	B (67)	N/A	54
R-20	Empire Ranch	Residential	N/A	B (67)	N/A	56
R-21	Empire Ranch	Residential	N/A	B (67)	N/A	56
R-22	Dunnwood Drive	Residential	2	B (67)	59	61
R-23	Dunnwood Drive	Residential	2	B (67)	N/A	61
R-24	Dunnwood Drive	Residential	1	B (67)	N/A	61
R-25	Dunnwood Drive	Residential	2	B (67)	N/A	61
R-26	Dunnwood Drive	Residential	2	B (67)	N/A	61
R-27	Dunnwood Drive	Residential	2	B (67)	N/A	61
R-28	Dunnwood Drive	Residential	2	B (67)	N/A	61
R-29	Platt Circle	Residential	2	B (67)	N/A	56
R-30	Platt Circle	Residential	2	B (67)	N/A	59
R-31	Platt Circle	Residential	2	B (67)	59	60
R-32	Platt Circle	Residential	2	B (67)	N/A	59
R-33	Platt Circle	Residential	2	B (67)	58	59
R-34	Kings Canyon Drive	Residential	3	B (67)	N/A	59
R-35	Kings Canyon Drive	Residential	3	B (67)	N/A	59

Notes: <sup>1</sup> N/A - Not applicable, ambient noise monitoring was not conducted at this receptor location.

<sup>2</sup> Number of units represented unknown.

Numbers in bold represent noise levels that approach or exceed the NAC.

Source: LSA 2003

## **2.5.2 Permanent Impacts**

### **Impact 2.5.1: The project may create long-term noise impacts from traffic noise.**

#### **2.5.2.1. Traffic Noise Assessment**

The Sound32 model is sensitive to the volume of trucks on the roadway, as they contribute disproportionately to the traffic noise. Traffic volumes, speeds, and truck percentages on Route 50 were obtained from Caltrans truck traffic study (Annual Average Daily Truck Traffic on California State Highways 2001). The model input and output data for the calibration model runs are included in the Noise Impact Analysis.

Future year Design Year sound levels at the representative sensitive receptor locations were determined using the LOS D/E volumes and peak hour traffic volumes. The model input and output data for the Design Year No Build Condition and the Build Condition are included in the Noise Impact Analysis. Table 2.5-4 presents the traffic noise model results for existing conditions and Design Year No Build and Build Conditions. The modeled future traffic noise levels were compared to the modeled existing noise levels (after calibration) from Sound32 to determine whether a substantial noise increase would occur.

The modeled future traffic noise levels were also compared to the NAC to determine whether a traffic noise impact would occur.

If the peak hour traffic noise level at a sensitive receptor location is predicted to “approach or exceed” the NAC, or if the predicted traffic noise level is 12 dBA or more higher than the existing modeled noise level at the sensitive receptor location analyzed, noise abatement measures must be considered. For the future build condition, of the 35 receptor locations modeled, no receptors would “approach or exceed” the NAC. Therefore, no additional sound walls need to be considered. Of the 35 modeled receptor locations modeled, 2 receptor locations would experience a “substantial increase” over their corresponding existing modeled noise levels. These two receptors are future sensitive land uses outside the project boundaries along the proposed Empire Ranch Road. Because the Empire Ranch Road interchange has been planned for many years, it is assumed that traffic noise impact issues in these off-site areas have been addressed in the Russell Ranch Specific Plan and EIR. Therefore, mitigation for these off-site receptors is not required.



**Table 2.5-4: Projected Design Year Traffic Noise Levels (dBA L<sub>eq</sub>)**

Rec #	Existing Modeled Noise Level	Future No Build Condition	Future Build Condition	Change from Existing Level
R-1	54	55	64	10
R-2	54	56	65	11
R-3	56	58	64	8
R-4	58	60	64	6
R-5	57	59	62	5
R-6	57	59	62	5
R-7	57	59	61	4
R-8	58	60	62	4
R-9	59	61	63	4
R-10	59	60	62	3
R-11	58	60	61	3
R-12	57	59	61	4
R-13	48	50	63	<u>15</u>
R-14	53	55	62	9
R-15	52	53	56	4
R-16	53	55	57	4
R-17	48	50	64	<u>16</u>
R-18	54	56	62	8
R-19	54	56	59	5
R-20	56	58	60	4
R-21	56	58	60	4
R-22	61	63	64	3
R-23	61	63	64	3
R-24	61	63	64	3
R-25	61	63	64	3
R-26	61	63	64	3
R-27	61	63	64	3
R-28	61	62	64	3
R-29	56	57	59	3
R-30	59	61	62	3
R-31	60	62	63	3
R-32	59	61	62	3
R-33	59	61	63	4
R-34	59	61	62	3
R-35	59	61	63	4

Notes:

1. Underlined numbers represent substantial noise increase of 12 dBA or more over existing noise levels.

Source: LSA 2003

Under future traffic conditions, an existing 2.4 m (8 ft) to 3.35 m (11 ft) wall protecting Receptors R1 through R-12 would not meet the City's noise objective of 62 dBA  $L_{dn}$ . Nevertheless, the City previously approved the construction of noise walls at these heights consistent with mitigation requirements included in prior environmental review for the adjacent development project (Village 63). The walls have been constructed and serve as baseline conditions for noise assessment purposes. Using the modeled  $L_{eq}$  to obtain the  $L_{dn}$ , the future Design Year Build Condition in the project area shows a range of up to 64 dBA  $L_{dn}$ .

### 2.5.2.2. Modeling of Sound Barriers

Sound wall heights were then modeled to determine the minimum wall height that would reduce traffic noise levels to 62 dBA  $L_{dn}$ . Table 2.5-5 shows the sound wall modeling for the Design Year Build Condition, with mainline improvements, with wall heights between 3.35 m (11 ft) and 4.3 m (14 ft). As shown in Table 2.5-5, a minimum wall height of 3.7 m (12 ft) would reduce traffic noise levels to 62 dBA  $L_{dn}$  or below. In light of the City's previous approval and subsequent construction of wall heights from 2.4 m (8 ft) to 3.35 m (11 ft), the future Build Condition in the project area will experience sound levels that range of up to 64 dBA  $L_{dn}$ . The existing wall heights (for Village 63) provide satisfactory attenuation to meet the City's maximum exterior noise standard of 64 dBA  $L_{dn}$  or below. Additional attenuation is not required to meet Caltrans/FHWA standards for exterior noise levels.

### 2.5.3 Temporary Impacts

#### **Potential Impact 2.5.2: Construction of the proposed project will result in temporary noise increases at noise receptor locations.**

Three types of short-term noise impacts would occur during construction of the project. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site and would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities will be moved on site, will remain for the duration of each construction phase, and will not add to the daily traffic volume in the project vicinity. A high single event noise exposure potential at a maximum level of 87 dBA  $L_{max}$  from trucks passing at 15 m (50 ft) will exist. However, the projected construction traffic will be small when compared to existing traffic volumes on Route 50 and other affected streets, and its associated long-term

noise level change will not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would be less than substantial.

**Table 2.5-5: Design Year Sound Barrier Modeling, Leq, dBA (Build Condition)**

Rec #	Future Build Conditions	With Wall H = 3.35 m (11 ft)		With Wall H = 3.7 m (12 ft)		With Wall H = 4.0 m (13 ft)		With Wall H = 4.3 m (14 ft)	
		Leq	I.L.	Leq	I.L.	Leq	I.L.	Leq	I.L.
R-1	64	62	2	61	3	60	4	59	5
R-2	65	63	2	62	3	62	3	61	4
R-3	64	62	2	61	3	61	3	60	4
R-4	64	61	3	60	4	60	4	59	5
R-5	62	61	1	60	2	60	2	59	3
R-6	62	61	1	60	2	59	3	59	3
R-7	61	61	0	60	1	59	2	59	2
R-8	62	62	0	61	1	60	2	60	2
R-9	63	63	0	62	1	61	2	60	3
R-10	62	62	0	61	1	61	1	60	2
R-11	61	61	0	61	0	60	1	60	1
R-12	61	61	0	60	1	60	1	59	2
R-13	63	63	0	63	0	63	0	63	0
R-14	62	62	0	62	0	62	0	62	0
R-15	56	56	0	56	0	56	0	56	0
R-16	57	56	1	56	0	56	1	56	1
R-17	64	64	0	64	0	64	0	64	0
R-18	62	62	1	62	0	62	0	62	0
R-19	59	59	0	59	0	59	0	59	0
R-20	60	60	0	60	0	60	0	60	0
R-21	60	60	0	60	0	60	0	60	0
R-22	64	64	0	64	0	64	0	64	0
R-23	64	64	0	64	0	64	0	64	0
R-24	64	64	0	64	0	64	0	64	0
R-25	64	64	0	64	0	64	0	64	0
R-26	64	64	0	64	0	64	0	64	0
R-27	64	64	0	64	0	64	0	64	0
R-28	64	64	0	64	0	64	0	64	0
R-29	59	59	0	59	0	59	0	59	0
R-30	62	62	0	62	0	62	0	62	0
R-31	63	63	0	63	0	63	0	63	0
R-32	62	62	0	62	0	62	0	62	0
R-33	63	63	0	63	0	62	0	62	0
R-34	62	62	0	62	0	62	0	62	0
R-35	63	63	0	63	0	62	0	62	0

Notes:

1. I.L. = Insertion Loss

Source: LSA 2003

The second type of short-term noise impact is related to noise generated during excavation, grading, and roadway construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 2.5-6 lists typical construction equipment noise levels ( $L_{max}$ ) recommended for noise impact assessments, based on a distance of 15 m (50 ft) between the equipment and a noise receptor.

Typical noise levels at 15 m (50 ft) from an active construction area range up to 91 dBA  $L_{max}$  during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

Noise associated with the use of construction grading equipment is estimated between 79 and 89 dBA  $L_{max}$  at a distance of 15 m (50 ft) from the active construction area. As seen in Table 2.5-6 the maximum noise level generated by each earthmover is assumed to be approximately 88 dBA  $L_{max}$  at 15 m (50 ft) from the earthmover in operation. Each bulldozer would also generate approximately 88 dBA  $L_{max}$  at 15 m (50 ft). The maximum noise level generated by water and pickup trucks is approximately 86 dBA  $L_{max}$  at 15 m (50 ft) from these vehicles. Each doubling of the sound source with equal strength increases the noise level by 3 dBA. Each piece of construction equipment operates as an individual point source. The worst case composite noise level at the nearest residence during this phase of construction would be 91 dBA  $L_{max}$  (at a distance of 15 m [50 ft] from an active construction area).

**Table 2.5-6: Typical Construction Equipment Noise Levels**

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	68 to 80	77
Dozers	85 to 90	88
Tractors	77 to 82	80
Front-End Loaders	86 to 90	88
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 86	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman 1971

In addition to the standard construction equipment, the proposed project will require the use of pile drivers. As shown in Table 2.5-6 pile driving generates noise levels of approximately 93 dBA  $L_{max}$  at 50 ft. If the pile driving is conducted concurrently with the site preparation, the construction site would potentially generate noise levels of 93 dBA  $L_{max}$  at a distance of 15 m (50 ft).

The closest sensitive receptor locations are located 15 m (50 ft) from the project construction areas. Therefore, these receptor locations may be subject to short-term noise reaching 93 dBA  $L_{max}$  generated by construction activities along the project alignment.

## **2.5.4 Cumulative Impacts**

No cumulative impacts are expected.

## **2.5.5 Mitigation, Minimization and Avoidance Measures**

### **Noise**

1. To minimize the construction noise impact for sensitive land adjacent to the project site, construction noise is regulated by Caltrans Standard Specifications, Section 5-1, "Sound Control Requirements," in the Standard Special Provisions (Potential Impact 2.5.2). These provisions follow:

"Sound control shall conform to the provisions in Section 7-1.01I, Sound Control Requirements, of the Standard Specifications and these special provisions. The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA at a distance of 15 m (50 ft). This requirement in no way relieves the contractor from responsibility for complying with local ordinances regulating noise level. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixer, or transient equipment that may or may not be owned by the contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore."

## **2.6. Air Quality**

An Air Quality Analysis was prepared for the proposed project and is available for review at the City of Folsom Public Works Department.

### **2.6.1 Affected Environment**

#### ***Air Basins***

The proposed project is located within two air basins: Mountain Counties Air Basin (El Dorado County portion) and Sacramento Valley Air Basin (Sacramento County portion). The Sacramento County portion of the project is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD).



Air quality in the Sacramento Valley Air Basin (SVAB) is heavily influenced by the weather conditions. Generally, pollutants from the Sacramento metropolitan area are transported into Placer County and other northern counties via wind patterns. The primary source of emissions in the metropolitan area is on-road vehicles.

Air quality in the Mountain Counties Air Basin (MCAB) is influenced by topography and meteorology. Generally, the strong upwind valley air flowing into the MCAB from Central Valley to the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin Valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the State and federal ozone ambient air quality standards in the MCAB.

### ***Current Energy Consumption***

Energy resources currently used through the project area mainly consists of minor electricity used for illumination on the roadway and fuels used by vehicles traveling along Route 50, and adjacent local roadways.

#### **2.6.1.1. Regional Air Quality**

The air quality attainment plans (AQAP) prepared by each of the two air districts contain district-wide control measures to reduce carbon monoxide and ozone precursor emissions. The State standards for these pollutants are more stringent than the national standards. Definitions of State and federal designations are provided in the Air Quality Analysis.

### ***Attainment Status***

#### ***El Dorado County***

The MCAB portion of the El Dorado County is classified as follows: 1-hour O<sub>3</sub> is listed as severe nonattainment for the federal standard and nonattainment for the State standard; eight-hour ozone is listed as serious nonattainment for the federal standard; CO, SO<sub>2</sub>, and NO<sub>2</sub> are in attainment or unclassified with both the federal and State standards; PM<sub>10</sub> is listed as unclassified for the federal standard and nonattainment for the State standard; and PM<sub>2.5</sub> is listed as unclassified for the federal standard. Sulfates, lead, and hydrogen sulfide are in attainment with State standards, and visibility reducing particulates are unclassified.

#### ***Sacramento County***

The Sacramento County portion of the SVAB, which is within the Sacramento urbanized area that is designated a CO maintenance area, is classified as follows: O<sub>3</sub> is listed as serious nonattainment for the federal standard and nonattainment for the State standard; eight-hour

ozone is listed as serious nonattainment for the federal standard; CO, SO<sub>2</sub>, and NO<sub>2</sub> are in attainment with both the federal and State standards; and PM<sub>10</sub> is listed as nonattainment for both federal and State standards. Sulfates, lead, and hydrogen sulfide are in attainment with State standards, and visibility reducing particulates are unclassified; and PM<sub>2.5</sub> is listed as unclassified for the federal standard.

### ***Conformity Status***

#### **2.6.1.2. Local Air Quality**

The major pollutants of concern in the project area—ozone, carbon monoxide, and particulate matter—are monitored at a number of locations. There are several air quality monitoring stations in the project vicinity. Table 2.6-1 summarizes the last three years of published data from these monitoring stations. Not all pollutants are monitored at each station.

Regulatory information is provided in the Air Quality Analysis. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are listed in Table 2.6-2. The Sacramento County area of the SVAB is currently classified as a nonattainment area for two criteria pollutants: O<sub>3</sub> and PM<sub>10</sub>.

#### **2.6.1.3. Regional Air Quality Planning Framework**

The 1976 Lewis Air Quality Management Act established the SMAQMD, El Dorado County Air Quality Management District (EDCAQMD), and other air districts throughout the State. The FCAA Amendments of 1977 required that each State adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The California Air Resources Board (CARB) coordinates and oversees both State and federal air pollution control programs in California. CARB oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for federal EPA approval. The CCAA provides the SMAQMD and EDCAQMD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions.

**Table 2.6-1: Ambient Air Quality at Nearby Air Monitoring Stations**

	Carbon Monoxide			Ozone			Coarse Suspended Particulate (PM10)			Fine Suspended Particulate (PM2.5)			Nitrogen Dioxide	
	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded	Max. 8-Hour Conc. (ppm)	Number of Days Exceeded	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded	Max. 8-Hour Conc. (ppm)	Number of Days Exceeded	Max. 24-Hour Conc. (µg/m3)	Number of Days Exceeded	Max. 24-Hour Conc. (µg/m3)	Number of Days Exceeded	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded
<b>State Stds.</b>	> 20 ppm/1-hr	≥ 9.1 ppm/8-hr	> .09 ppm/1-hr	None	> 50 µg/m3, 24 hrs	None	> .08 ppm/8-hr	> 150 µg/m3, 24 hrs	None	> .25 ppm/1-hr				
<b>2004</b>	7.3	0	4.1	0	0.11	14	0.09	NA	0	47	0	NA	0.052	0
<b>2003</b>	4.4	0	2.1	0	0.14	30	0.12	NA	1	64	1	NA	0.044	0
<b>2002</b>	3.7	0	3.1	0	0.14	27	0.12	NA	1	56	1	NA	0.053	0
<b>MAXIMUM</b>	4.4		3.2		0.14		0.12			82		75	0.102	
<b>Federal Stds.</b>	> 35 ppm/1-hr	≥ 9.5 ppm/8-hr	> .12 ppm/1-hr	> .08 ppm/8-hr	> 150 µg/m3, 24 hrs	> 65 µg/m3	0.053 ppm, annual average							
<b>2004</b>	7.3	0	4.1	0	0.11	0	0.09	7	0	47	0	51	0	0.008
<b>2003</b>	4.4	0	2.1	0	0.14	3	0.12	26	0	64	0	65	0	0.009
<b>2002</b>	3.7	0	3.1	0	0.14	3	0.12	23	0	56	0	77	3	0.008
<b>MAXIMUM</b>	4.4		3.2		0.14		0.12			82		75		0.01

Notes: CO and PM10 monitoring data from North Highlands-Blackfoot Way Air Monitoring Station. O3 and NO2 monitoring data from Folsom-Natoma Street Air Monitoring Station. PM2.5 monitoring data from Sacramento-Del Paso Manor Air Monitoring Station. NA: Not applicable.  
Source: ARB Air Quality Data 2002to 2004

**Table 2.6-2: Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>1</sup>		Federal Standards <sup>2</sup>			
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>2,5</sup>	Secondary <sup>2,6</sup>	Method <sup>7</sup>	
Ozone (O <sub>3</sub> )	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	0.12 ppm (235 µg/m <sup>3</sup> ) <sup>8</sup>	Same as Primary Standard	Ultraviolet Photometry	
	8 Hour	–		0.08 ppm (157 µg/m <sup>3</sup> )			
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		50 µg/m <sup>3</sup>			
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	No Separate State Standard		65 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	15 µg/m <sup>3</sup>			
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m <sup>3</sup> )	None	Non-dispersive Infrared Photometry (NDIR)	
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )			
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		–			
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	–	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemiluminescence	
	1 Hour	0.25 ppm (470 µg/m <sup>3</sup> )		–			
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m <sup>3</sup> )	–	Spectrophotometry (Pararosaniline Method)	
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (365 µg/m <sup>3</sup> )			
	3 Hour	–		–			0.5 ppm (1300 µg/m <sup>3</sup> )
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )		–			–
Lead <sup>9</sup>	30 days average	1.5 µg/m <sup>3</sup>	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption	
	Calendar Quarter	–		1.5 µg/m <sup>3</sup>			Same as Primary Standard
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer, visibility of ten miles or more (0.07–30 miles or more for Lake Tahoe), due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards			
Sulfates	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography				
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence				
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography				

Notes: See following page

Notes for Table 2.6-2: <sup>1</sup> California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter, PM<sub>10</sub>; and visibility-reducing particles are values not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

<sup>2</sup> National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

<sup>3</sup> Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

<sup>4</sup> Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

<sup>5</sup> National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

<sup>6</sup> National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

<sup>7</sup> Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

<sup>8</sup> New federal 8-hour ozone and fine particulate matter standards were promulgated by EPA on July 18, 1997. Contact EPA for further clarification and current federal policies.

<sup>9</sup> The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2003

The air quality assessment for the proposed project includes estimating emissions associated with short-term construction and long-term operation of the proposed project. Due to the characteristics of the proposed project, regional air quality impacts include only mobile source emissions, i.e., no stationary emission sources. Mobile emissions include vehicle trips using the interchange. In addition, localized air quality impacts (higher carbon monoxide concentrations) along Route 50 and Empire Ranch Road would potentially occur due to the proposed changes. Potential hot spot impacts for particulates are also analyzed. PM<sub>10</sub> hot spot analysis is required by the EPA Transportation Conformity Rule (40 CFR 93.116 and 40 CFR 93.123) in order to determine project level conformity in PM<sub>10</sub> nonattainment or maintenance areas (for federal standards).

All projects that add capacity under current EPA approved analysis methods (AP-42) for re-entrained dust and similar materials will increase PM<sub>10</sub>. It is not possible at this time to unequivocally demonstrate that normal mitigation measures (paved shoulders, curbs, sweeping, etc.) can reduce this impact to insignificance.

Regional transportation plan air quality analyses usually show that the transportation system will not increase PM<sub>10</sub> overall, considering all sources (direct, indirect, and secondary formation). Unusual circumstances (high concentration of diesel vehicles,

high silt loading, or regular wintertime sanding, etc.) can also suggest a need for a higher level document and evaluation of possible mitigation measures for localized impacts.

#### *El Dorado County Air Quality Management District*

The EDCAQMD has established emissions thresholds for construction activities associated with a proposed project similar to emissions associated with project operations.

Project operation emissions refer to the pollutants generated by the stationary/area (direct) sources and mobile (indirect) sources. Stationary sources include electricity and natural gas consumption; mobile sources are the motor vehicle trips associated with the project. These sources would contribute to the deterioration of air quality and potentially delay the region from complying with the Clean Air Act. Hence, pollutants' thresholds are created to determine the significance of a project's impact on air quality. The evaluation criteria from operational emissions are as follows:

#### *Emissions Thresholds for Ozone*

The following are emissions thresholds for ozone precursor pollutants.

- 82 pounds per day of ROG
- 82 pounds per day of NO<sub>x</sub>

#### *Emissions Thresholds for Other Criteria Pollutants*

For the other criteria pollutants, including CO, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, sulfates, lead, and hydrogen sulfide (H<sub>2</sub>S), a project is considered to have an impact on air quality if it will cause or contribute significantly to a violation of the applicable national or State ambient air quality standards. For example, the project would have an adverse impact if it will result in the exceedance of the following standards:

- California State one hour CO standard of 20.0 parts per million (ppm)
- California State eight hour CO standard of 9.0 ppm

#### *Criteria for Visibility*

A project in the MCAB portion of El Dorado County will be considered to have an impact on visibility if it will cause or contribute significantly to a violation of the State visibility standard, which is ten miles (when relative humidity is less than 70 percent).



*Criteria for Determining Cumulative Impacts*

A proposed project is considered to have cumulative effects if one or more of the following conditions is met:

1. The project requires a change in the existing land use designation (i.e., General Plan amendment, rezone), and projected emissions (ROG, NO<sub>x</sub>, CO, or PM<sub>10</sub>) are greater than the emissions anticipated for the site if developed under the existing land use designation;
2. The project would individually exceed any criteria in the EDCAQMD guidelines;
3. For impacts that are determined to exceed the EDCAQMD guidelines, the Lead Agency for the project does not require the project to implement the emission reduction measures contained in and/or derived from the AQAP; or
4. The project is located in a jurisdiction that does not implement the emission reduction measures contained in and/or derived from the AQAP.

*Sacramento Metropolitan Air Quality Management District*

On March 28, 2002, the Board of Directors of the SMAQMD approved the following revised criteria/thresholds for pollutants emitted into the air.

*Mass Emissions Thresholds*

Table 2.6-3 shows emissions thresholds for ozone precursor pollutants.

**Table 2.6-3: Mass Emission Thresholds**

Project Type	Ozone Precursor Emissions (pounds/day)	
	ROG	NO <sub>x</sub>
Short-Term Effects (Construction)	None	85
Long-Term Effects (Operation)	65	65

Source: SMAQMD 2002

According to SMAQMD, projects in the region with operation related emissions will have an impact if they exceed any of the above emission thresholds.

*Emission Concentration Thresholds*

The CAAQS emissions criteria are applied to all phases of a project in addition to the above mass emission thresholds.

### *Substantial Contribution Threshold*

A project is considered to contribute substantially to an existing or projected violation of CAAQS if it emits pollutants at a level equal to or greater than five (5) percent of the CAAQS.

Potential significant impacts associated with energy encourage activities that result in the use of large amounts of electricity or natural gas or use electricity or natural gas in a wasteful manner.

## **2.6.2 Permanent Impacts**

### **Potential Impact 2.6.1: Implementation of the proposed project would improve traffic conditions and thereby improve long-term regional air quality impacts.**

Long-term air emission impacts are those associated with stationary sources and mobile sources related to any change in permanent usage of the project site. Because of the characteristics of the proposed project (i.e., an interchange project to accommodate the circulation capacity in the project area), there are no project related stationary sources of emissions associated with the usage of electricity and natural gas. In addition, the proposed project would not result in new vehicular traffic trips. Therefore, there would be no new mobile source emissions from the vehicle use associated with the proposed project. The proposed project would not have adverse regional air quality impacts.

### **Potential Impact 2.6.2: The proposed project would not create carbon monoxide hot spots.**

Although there are no new project related regional vehicular trips expected, the improved interchange may attract traffic from alternative routes in the project vicinity (see Traffic Section 2.3). Therefore, there is potential for the traffic on nearby El Dorado Hills Boulevard-Latrobe Road and East Bidwell Street-Scott Road in the interchange area to decrease. The increase in traffic volume associated with the proposed addition of the Empire Ranch Road Interchange would result in an increase in CO concentrations along the Empire Ranch Road. However, as discussed earlier, there are no existing sensitive receptors, such as residences or schools, that are located directly adjacent to the segment of Empire Ranch Road and the Route 50 ramps that would be affected by the proposed interchange improvements.

The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the North Highlands station, the closest station with monitored CO data, showed a highest recorded one hour concentration of 4.4 ppm (State standard is 20 ppm) and a highest eight hour concentration of 3.2 ppm (State standard is 9 ppm) during the past three years (see Table 2.6-2).

The flow chart in the Caltrans' Transportation Project Level Carbon Monoxide Protocol for the Local Analysis was used to determine the CO impacts:

- Is the project in a CO nonattainment area? – NO
- Was the area redesignated as “attainment” after the 1990 Clean Air Act? – YES
- Has “continued attainment” been verified with the local Air District if appropriate? – YES
- Does project worsen air quality? – NO
- Project Satisfactory. No further analysis needed.

Therefore, based on the above analysis, no adverse local CO impacts would occur as a result of the proposed interchange improvements. No mitigation measures are required.

Because the project is adding a new interchange to a developing area, a CO hotspot analysis was performed. The highest CO concentrations occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst case analysis. Modeling of the CO hot spot analysis was based on traffic volumes generated by the project traffic study (Fehr & Peers 2003), which identified the peak traffic levels generated in the project area with and without the proposed project.

The impact on local carbon monoxide levels was assessed with the CARB approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of carbon monoxide, often termed “hot spots.” A brief discussion of input to the CALINE4 model follows. The analysis was performed for the worst case wind angle and wind speed conditions and is based upon the following assumptions:

- Selected modeling locations represent the intersections closest to the project site, with the highest project related vehicle turning movements and the worst level of service deterioration;
- Receptor locations near intersections and along roadways were modeled to determine carbon monoxide concentrations;
- The calculations assume a meteorological condition of almost no wind (0.5 meter/second), a suburban topographical condition between the source and receptor, and a mixing height of 1,000 meters, representing a worst case scenario for CO concentrations;
- CO concentrations are calculated for the one hour averaging period and then compared to the one hour standards. CO eight hour averages are extrapolated using a persistence factor of 0.7 and compared to the eight hour standards;
- Concentrations are given in ppm at each of the receptor locations;
- The “at-grade” link option with speed adjusted based on average cruise speed and number of vehicles per lane per hour was used rather than the “intersection” link selection in the CALINE4 model. (Caltrans has suggested that the “intersection” link should not be used due to an inappropriate algorithm based on outdated vehicle distribution), and
- The higher of the second highest CO concentrations from the past two years of monitoring at the North Highlands station were used as background concentrations, as recommended by the EPA. The “background” concentrations are then added to the model results for with and without the proposed project conditions. The projected ambient CO concentrations are 4.3 ppm for the one hour CO and 3.1 ppm for the eight hour CO.

The proposed project would contribute to increased CO concentrations at intersections in the project vicinity. As shown in Table 2.6-4, under the existing conditions, all areas analyzed would have the one-hour and eight-hour CO

concentrations below the federal and State standards. The existing CO concentrations are from current traffic in the vicinity of the project.

Two future (2026) year scenarios were evaluated for traffic impacts from the proposed project: No Build, and Build Conditions. It is anticipated that emissions, including CO, in the future years will decrease with technology advancement. The increase in traffic volumes would not outweigh the decrease in emission factors.

Table 2.6-5 shows that, in the year 2026 scenarios, none of the intersections analyzed would exceed either the one-hour or the eight-hour CO concentration federal and State standards. The lower overall CO concentrations, even though higher traffic volumes are anticipated, are generally due to lower future vehicular emissions from advanced technology. The proposed project would contribute at most a 0.2 ppm increase to the one-hour CO concentrations and 0.1 ppm increase to the eight-hour CO concentrations at these intersections. The proposed project would not have an adverse effect on CO hot spots.

**Potential Impact 2.6.3: Implementation of the proposed project would not create any PM<sub>10</sub> hot spots.**

The proposed project is located in a nonattainment area for State and federal PM<sub>10</sub>. This project will not contribute to a PM<sub>10</sub> hot spot that will cause or contribute to violations of the PM<sub>10</sub> NAAQS.

Transportation facilities generate localized high concentrations of air pollutants. This would occur where large amounts of traffic operate under heavily congested conditions, or where unusually large numbers of diesel powered vehicles can be expected to operate, especially if they will be idling for a substantial period of time. Hot spot analysis concentrates on air quality impacts that occur as a direct result of transportation facility operation, and in the immediate vicinity of the facility. Projects are only subject to hot spot analysis requirements for PM<sub>10</sub> if they are located in a PM<sub>10</sub> nonattainment or maintenance area (for federal standards), for purposes of transportation conformity.

**Table 2.6-4: Existing Roadway Carbon Monoxide Concentrations (ppm)**

Intersection	#	One-Hour CO Concentration (ppm)	Eight-Hour CO Concentration (ppm)	Exceeds State Standards	
				1-Hr	8-Hr
Along west side of Empire Ranch Road and the On-Ramp to WB 50	1	5.3	3.8	No	No
	2	5.3	3.8	No	No
	3	5.4	3.9	No	No
	4	5.5	4.0	No	No
	5	5.6	4.0	No	No
	6	5.9	4.3	No	No
	7	5.9	4.3	No	No
	8	6.0	4.3	No	No
	9	5.1	3.7	No	No
	10	5.1	3.7	No	No
	11	5.2	3.8	No	No
Iron Point Road west of Empire Ranch Road	12	5.2	3.8	No	No
	13	5.2	3.8	No	No
	14	5.2	3.8	No	No
Along east side of Empire Ranch Road	15	5.1	3.7	No	No
	16	5.1	3.7	No	No
	17	5.2	3.8	No	No
	18	5.3	3.8	No	No
Iron Point Road east of Empire Ranch Road	19	5.3	3.8	No	No
	20	5.6	4.0	No	No
	21	5.8	4.2	No	No
Dunnwood Drive	22	5.7	4.1	No	No
	23	5.8	4.2	No	No
	24	5.8	4.2	No	No
	25	5.8	4.2	No	No
	26	5.8	4.2	No	No
	27	5.8	4.2	No	No
	28	5.8	4.2	No	No
Platt Circle	29	5.6	4.0	No	No
	30	5.8	4.2	No	No
	31	5.9	4.3	No	No
	32	5.8	4.2	No	No
	33	5.8	4.2	No	No
	34	5.8	4.2	No	No
	35	5.9	4.3	No	No
Penela Way	36	5.4	3.9	No	No
	37	5.5	4.0	No	No
	38	5.4	3.9	No	No
Park near Penela Way	39	5.6	4.0	No	No
Ponta Delgado Court	40	5.5	4.0	No	No
	41	5.5	4.0	No	No
Joerger Cutoff Road	42	5.9	4.3	No	No

Source: LSA 2003



**Table 2.6-5: Future Design Year Roadway Carbon Monoxide Concentrations**

Receptor	#	Project Related 1-Hour Increase (ppm)	One-Hour CO Concentration No Project/Project (ppm)	Project Related 8-Hour Increase (ppm)	Eight-Hour CO Concentration No Project/Project (ppm)	Exceeds State Standards	
						1-Hr	8-Hr
Along west side of Empire Ranch Road and the On-Ramp to WB 50	1	0.1	4.5/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	2	0.1	4.5/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	3	0.1	4.5/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	4	0.1	4.5/4.6/4.7	0.0/0.1	3.3/3.3/3.4	No	No
	5	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	6	0.1	4.6/4.7/4.7	0.1/0.1	3.3/3.4/3.4	No	No
	7	0.1	4.6/4.7/4.7	0.1/0.1	3.3/3.4/3.4	No	No
	8	0.1	4.6/4.7/4.7	0.1/0.1	3.3/3.4/3.4	No	No
	9	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	10	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	11	0.1	4.5/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
Iron Point Road west of Empire Ranch Road	12	0.0	4.5/4.5/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	13	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	14	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
Along east side of Empire Ranch Road	15	0.1	4.5/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	16	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	17	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	18	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
Iron Point Road east of Empire Ranch Road	19	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	20	0.0	4.5/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	21	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
Dunnwood Drive	22	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	23	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	24	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	25	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	26	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	27	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	28	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
Platt Circle	29	-0.1	4.6/4.5/4.5	0.0/0.0	3.3/3.3/3.3	No	No
	30	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	31	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	32	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	33	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	34	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No
	35	0.0	4.6/4.6/4.6	0.0/0.0	3.3/3.3/3.3	No	No

Source: LSA 2003

As stated previously, the proposed project is expected to improve traffic flow and reduce delays and congestion. It is not expected that new vehicular traffic trips will occur as a result of the proposed project. The proposed project is included in the currently approved version of SACOG MTIP. Regional PM<sub>10</sub> SIP budget compliance was accounted for during the MTIP conformity determination adverse impact on local air quality for CO, and no mitigation measures would be required.

The University of California Davis has performed studies indicating that, absent unusual circumstances or existing conditions (monitored) that are above or within 80 percent of the federal PM<sub>10</sub> standard, a transportation facility in California is unlikely to cause or experience a localized PM<sub>10</sub> problem unless the immediate vicinity is already at or above standard. The maximum averaged PM<sub>10</sub> concentration monitored at the North Highlands station (see Table 2.6-2) in the latest three years was 56  $\mu\text{g}/\text{m}^3$  (averaged from 56, 64, and 47  $\mu\text{g}/\text{m}^3$ , respectively, for the years 2002, 2003, and 2004). This level is approximately 37 percent of the federal PM<sub>10</sub> standard (150  $\mu\text{g}/\text{m}^3$ ).

**Potential Impact 2.6.4: Implementation of the proposed project would not result in hazardous air pollutants.**

The proposed Interchange project is not expected to generate any hazardous air pollutants that would result in adverse air quality impacts. No mitigation measures are required.

**Potential Impact 2.6.5: Implementation of the project would not result in the accidental release of acutely hazardous air emissions.**

The proposed project is not expected to result in any accidental release of acutely hazardous air emissions. No mitigation measures are required.

**Potential Impact 2.6.6: The project conforms with relevant regional planning documents.**

Consideration of the Empire Ranch Road Interchange project is included in the conforming 2003/05 MTIP (SACOG, July 2002, and FHWA/FTA, February 2003). FHWA and FTA made a conformity determination on the 2003/05 MTIP on February 6, 2003.

The proposed Empire Ranch Road Interchange project is included in the 2003/05 MTIP. The proposed Empire Ranch Road Interchange Improvements project is not

different from the project included in the 2003/05 MTIP. The proposed Empire Ranch Road Interchange project would not create any new CO violations or decrease the frequency and severity of any existing CO violations.

Therefore, it is determined that the proposed Empire Ranch Road Interchange project is in conformance with the SIP and is consistent with the requirements of the Transportation Conformity Rule.

**Potential Impact 2.6.7: The project will serve vehicles from Route 50, Empire Ranch Road and other local roadways potentially consuming significant additional energy resources through fuel consumption.**

As a new project, the proposed interchange and auxiliary lanes will serve vehicles in the region consistent with the forecast traffic volumes for this location. Gasoline, diesel and other fuels will be consumed by vehicles using the project features to access the new enhanced transportation network. However, the consumption of these fuels (e.g., energy) is not expected to be significant for several reasons:

- Forecast traffic volumes will occur with or without the project. The vehicle trips would already occur in the region and would not be considered new trips. Therefore, the fuel energy would be consumed in the region irrespective of the project.
- The proposed project will improve the levels of traffic service in the region when compared with the No Project alternative. An improvement in the levels of traffic service will provide more efficient transportation and use less energy.

**2.6.3 Temporary Impacts**

**Potential Impact 2.6.8: Equipment used to construct the proposed project will temporarily increase exhaust emissions and energy consumption.**

Construction activities for the proposed project would result in short-term impacts on ambient air quality in the area. Temporary construction emissions would result directly from grading and site preparation activities, and indirectly from construction equipment emissions and construction worker commuting patterns. Pollutant emissions would vary from day to day, depending on the level of activity, the specific operations, and the prevailing weather. Caltrans Standard Specifications for construction (Sections 10 and 18 for dust control and Section 39-306 for asphalt

concrete plant) will be adhered to in order to reduce emissions as a result of construction equipment.

Construction of the new interchange and auxiliary lanes was broken down into three phases: Bridge Work, Pile Work, and Approach Work. Construction emissions would result from material handling and heavy equipment operations.

The following emissions estimates, summarized in Table 2.6-6, were based on assumptions made for construction equipment for projects similar to the proposed project. The SMAQMD has established emissions thresholds for construction activities associated with a proposed project. As shown in Table 2.6-6, construction equipment emissions during the three construction phases (Bridge Work, Pile Work, and Approach Work) would not exceed the SMAQMD daily operational threshold of 85 pounds for the criteria pollutant of NO<sub>x</sub>. Construction equipment exhausts shown in the table assumed a peak day operation. Emissions for an average day's construction operation would be lower. For projects that exceed these levels, project applicants must implement as many feasible mitigation measures as possible to substantially lessen or avoid significant air quality impacts. As noted in the table, none of the thresholds will be exceeded with phased project construction resulting in a less-than-significant impact. SMAQMD's rule on cutback and emulsified asphalt paving materials shall be abided by during the construction of the Empire Ranch Road Interchange project. Measures listed below should be implemented to reduce emissions generated from site grading and equipment exhaust.

Energy consumed during project construction would mainly consist of petroleum used by construction equipment, with smaller amounts of electricity used in the creation of construction materials or welding processes. Short-term energy consumption required by construction equipment, vehicles used by construction crews to drive to the project site, or from the processing of construction materials would not be large enough to be considered adverse.

**Table 2.6-6: Peak Day Emissions from Construction Equipment Exhaust**

Source/ Equipment Type (no.)	Hours/Day or Miles/Day	Pollutants (pounds/day)				
		CO	ROG	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>
<i>Bridge Work</i>						
Crane (1)	8 hours/day	7.4	2.5	19.0	1.7	1.2
Rubber Tire Loader (1)	8 hours/day	9.7	1.8	20.3	1.8	1.3
Backhoe Loader (1)	8 hours/day	4.5	0.8	9.4	0.8	0.6
Forklift (2)	8 hours/day	3.1	0.7	7.4	0.5	0.4
Tractor/Crawler (1)	8 hours/day	6.6	1.3	9.7	0.9	0.4
Concrete Pump (1)	8 hours/day	3.9	0.7	6.4	0.7	0.4
Haul Trucks (20 trips)	20 miles/day	5.7	1.0	8.3	0.0	0.6
Water Trucks (2)	20 miles/day	1.6	0.1	0.6	0.0	0.0
Worker Commute (16)	40 miles/day	4.8	0.3	0.9	0.0	0.0
<i>Subtotal Bridge Work</i>		47.3	9.2	82.0	6.4	4.9
<i>Pile Work</i>						
Crane (1)	8 hours/day	7.4	2.5	19.0	1.7	1.2
Rubber Tire Loader (1)	8 hours/day	9.7	1.8	20.3	1.8	1.3
Auger (1)	8 hours/day	12.6	4.2	32.3	2.8	2.1
Water Truck (1)	20 miles/day	0.8	0.1	0.3	0.0	0.0
Haul Trucks (20 trips)	20 miles/day	5.7	1.0	8.3	0.0	0.6
Worker Commute (12)	40 miles/day	3.6	0.2	0.7	0.0	0.0
<i>Subtotal Pile Work</i>		39.8	9.8	80.9	6.3	5.2
<i>Approach Work</i>						
Scraper (1)	8 hours/day	15.5	1.4	26.8	2.8	2.1
Paver (1)	8 hours/day	8.3	1.5	17.5	1.5	0.8
Roller (1)	8 hours/day	3.7	1.4	9.7	0.9	0.5
Skip Loader (1)	8 hours/day	4.3	0.8	8.9	0.8	0.6
Water Truck (1)	20 miles/day	0.8	0.1	0.3	0.0	0.0
Haul Trucks (20 trips)	20 miles/day	5.7	1.0	8.3	0.0	0.6
Worker Commute (12)	40 miles/day	3.6	0.2	0.7	0.0	0.0
<i>Subtotal Approach Work</i>		41.9	6.4	72.2	6.0	4.6
SMAQMD Threshold		None	None	85	None	None

Notes: Emission factors included in EPA AP-42 Report, September 1985, were used for construction equipment exhaust.

Source: LSA 2003

**Potential Impact 2.6.9: Implementation of the proposed project would result in fugitive dust emissions in excess of SMAQMD standards during construction.**

Fugitive dust would be generated from soil disturbance, such as grading, cut and filling, and from vehicle travel over unpaved surfaces. Although the EPA has

suggested emission factors for construction activities, this analysis did not quantify the potential fugitive dust emissions due to the lack of specific construction information for the proposed project. The SMAQMD indicated that projects with a construction area smaller than five acres would not be considered to have an adverse impact on fugitive dust generation. Therefore, construction of the proposed project would not result in adverse impacts on fugitive dust. However, measures that can be used to reduce fugitive dust emissions during project construction have been identified in the Mitigation, Minimization, and Avoidance Measures section.

**Potential Impact 2.6.10: Implementation of the proposed project would generate odors during construction; however, there are no nearby sensitive receptors that would be affected.**

The project would emit potential odors from heavy duty construction equipment. However, there are no sensitive receptors located directly adjacent to the proposed interchange area. No adverse odor impacts would occur. No measures are required.

**Potential Impact 2.6.11: Implementation of the proposed project would result in fugitive dust emissions that may contain naturally occurring asbestos.**

The proposed project is located in Sacramento and El Dorado Counties. The geology of the Sierra Foothills of El Dorado County includes an abundance of serpentine rock and soils that often contain naturally occurring asbestos. As a result, dust created by construction of the project may generate harmful levels of asbestos. However, measures that can be used to reduce dust emissions, and the hazard of asbestos, during project construction have been identified below.

**Potential Impact 2.6.12: Implementation of the proposed project could cause a direct temporary increased health risk resulting from exposure to diesel exhaust from construction activities.**

Based on information provided by the project engineers, it is anticipated that construction activities would continue for approximately 24 months. The assessment of cancer risk typically is based on a 70-year exposure period. Construction activities are sporadic, transitory, and short-term in nature, and once construction activities have ceased, so too have emissions from construction activities. Because exposure to diesel exhaust will be well below the 70-year exposure period, construction and operation of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction-related diesel

exposure. Consequently, the estimation of diesel risks associated with construction activities is not anticipated to result in any adverse health risk. This impact would be considered less-than-significant. No measures are required.

#### **2.6.4 Cumulative Impacts**

Because the proposed project would not result in any individually adverse air quality impacts, it is not expected to result in any cumulative air quality impacts. No mitigation measures are required for air quality. The proposed project would result in some long-term savings of energy as vehicles traveling along Route 50 would no longer experience long delays from deteriorating levels of service.

#### **2.6.5 Mitigation, Minimization and Avoidance Measures**

##### **Air Quality**

No measures are required for Potential Impacts 2.6.1 through 2.6.7, and 2.6.10.

1. The construction contractor shall adhere to the requirements of the SMAQMD rule on cutback and emulsified asphalt paving materials (Potential Impact 2.6.8).
2. In addition, the following measures are recommended for implementation to reduce air pollutants, especially NO<sub>x</sub>, generated by vehicle and equipment exhaust during the project construction phase (Potential Impact 2.6.8):
  - a. The construction contractor provide a plan for approval by the SMAQMD demonstrating that the heavy-duty (50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet average 20% NO<sub>x</sub> reduction and 45% particulate reduction compared with the most recent California Air Resources Board fleet average at the time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

The contractor shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected number hours of use or fuel throughput



for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the contractor shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

Caltrans recognizes the City of Folsom, as project sponsor and CEQA lead agency, has the right to make its own determinations regarding use of the SMAQMD protocol and the measures designed to reduce NO<sub>x</sub> and particulates. On the other hand, as a responsible agency, Caltrans must make an independent judgment regarding the adequacy of the lead agency's EIR to support issuance of an encroachment permit authorizing work on the State highway system.

- b. The contractor shall ensure emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that a monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other SMAQMD or State rules or regulations<sup>1</sup>.
- c. The construction contractor shall utilize electric or diesel powered equipment in lieu of gasoline powered engines, where feasible<sup>2</sup>.
- d. The construction contractor shall ensure construction grading plans include a statement that work crews will shut off equipment when not in use.
- e. The construction contractor shall time the construction activities so as not to interfere with peak hour traffic, and to minimize obstruction of through traffic

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<sup>2</sup> It should be noted that Caltrans cannot concur with any mitigation measure that requires the contractor to use a construction fleet emitting 20 percent lower emissions than the average fleet at the time of construction. In view of Caltrans' obligations under the California Public Contract Code, if this measure were included as a requirement of the contract, Caltrans would be unable to advertise, award, and administer the contract for the project.

lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.

- f. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.

3. Because the project is located in an ozone nonattainment area, the measures listed above will be implemented, where feasible, to reduce air pollutants generated during the project construction phase (Potential Impact 2.6.8).

- a. The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency. The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications<sup>1</sup>.
- b. The construction contractor shall utilize electric or diesel powered equipment in lieu of gasoline powered engines where feasible<sup>1</sup>.
- c. The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use.
- d. The construction contractor shall time the construction activities so as not to interfere with peak hour traffic and to minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.
- e. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.

4. The project will be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SMAQMD Regulation 403 requires that fugitive dust be controlled with best available control measures and requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site (Potential Impact 2.6.9).

5. Caltrans Standard Construction Specifications shall also be adhered to, to reduce emissions. Below is a list of Caltrans standard measures provided to reduce the emission of fugitive dust. Compliance with these standard measures will lessen the fugitive dust (PM<sub>10</sub>) impact during construction (Potential Impact 2.6.9).

- a. All disturbed areas, including storage piles, not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover.

- b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/suppressants.
  - c. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions utilizing applications of water, or by presoaking.
  - d. When materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emission; or at least six inches of freeboard space from the top of the container shall be maintained.
  - e. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited, except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly forbidden.
  - f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.
  - g. Traffic speeds on unpaved roads shall be limited to 15 mph.
  - h. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
  - i. Wheel washers for all exiting trucks shall be installed, or all trucks and equipment washed off before leaving the site.
  - j. Excavation and grading activity shall be suspended when winds exceed 20 miles per hour (mph).
  - k. Area subject to excavation, grading, and other construction activity shall be limited at any one time.
6. Construction or construction-related activities that disturb or potentially disturb naturally occurring asbestos are subject to specific construction requirements within El Dorado County. Primarily, the owner/operator shall submit an Asbestos Dust Mitigation Plan to the Air Pollution Control Officer prior to the start of any construction activity. Construction activities shall not commence until the Air Pollution Control Officer has approved or conditionally approved the Asbestos Dust Mitigation Plan. The owner/operator shall retain a copy of the approved plan at the project site, which shall remain valid until the termination of all dust generating

activities. The Asbestos Dust Mitigation Plan must include the Best Management Practices listed in Table 2.6-7 (Potential Impact 2.6.11):

**Table 2.6-7: Best Management Practices For Asbestos Dust Mitigation**

Source Category	Control Measure	Guidance
<b>Construction And Other Earthmoving Activities</b>		
Backfilling	<ul style="list-style-type: none"> <li>Stabilize backfill material when not actively handling; and</li> <li>Stabilize backfill material during handling; and</li> <li>Stabilize soil at completion of activity.</li> </ul>	<ul style="list-style-type: none"> <li>Mix backfill soil with water prior to moving</li> <li>Dedicate water truck or high capacity hose to backfilling equipment.</li> <li>Empty loader bucket slowly so that no dust plumes are generated.</li> <li>Minimize drop height from loader bucket.</li> </ul>
Clearing and grubbing	<ul style="list-style-type: none"> <li>Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and</li> <li>Stabilize soil during clearing and grubbing activities; and</li> <li>Stabilize soil immediately after clearing and grubbing activities.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain live perennial vegetation where possible.</li> <li>Apply water in sufficient quantity to prevent generation of visible dust.</li> </ul>
Clearing forms	<ul style="list-style-type: none"> <li>Use water spray to clear forms; or</li> <li>Use sweeping and water spray to clear forms; or</li> <li>Use vacuum system to clear forms.</li> </ul>	<ul style="list-style-type: none"> <li>Use of high pressure air to clear forms may cause exceedance of Rule requirements.</li> </ul>
Crushing	<ul style="list-style-type: none"> <li>Crushing asbestos containing material is expressly prohibited.</li> </ul>	
Cut and fill	<ul style="list-style-type: none"> <li>Pre-water soils prior to cut and fill activities; and</li> <li>Stabilize soil during and after cut and fill activities.</li> </ul>	<ul style="list-style-type: none"> <li>For large site, pre-water with sprinklers or water trucks and allow time for penetration.</li> <li>Use water as necessary to keep dust down.</li> </ul>
Demolition – mechanical/manual	<ul style="list-style-type: none"> <li>Stabilize wind erodible surfaces to reduce dust; and</li> <li>Stabilize surface soil where support equipment and vehicles will operate; and</li> <li>Stabilize loose soil and demolition debris.</li> </ul>	<ul style="list-style-type: none"> <li>Apply water in sufficient quantities to prevent the generation of visible dust.</li> </ul>
Disturbed soil	<ul style="list-style-type: none"> <li>Stabilize disturbed soil throughout the construction site; and</li> <li>Stabilize disturbed soil between structures</li> </ul>	<ul style="list-style-type: none"> <li>Limit vehicular traffic and disturbances on soils where possible.</li> <li>If interior block walls are planned, install as early as</li> </ul>

Source Category	Control Measure	Guidance
		<p>possible.</p> <ul style="list-style-type: none"> <li>Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</li> </ul>
Earth-moving activities	<ul style="list-style-type: none"> <li>Pre-apply water; and</li> <li>Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 25 feet or beyond property line in any direction; and</li> <li>Stabilize soils once earth-moving activities are complete.</li> </ul>	<ul style="list-style-type: none"> <li>Grade each project phase separately, timed to coincide with construction phase.</li> <li>Upwind fencing can prevent material movement on site</li> <li>Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</li> <li>Suspend operations when winds generate visible dust emissions despite control measures</li> </ul>
Importing/exporting of bulk materials	<ul style="list-style-type: none"> <li>Stabilize or adequately wet material while loading to reduce fugitive dust emissions; and</li> <li>Maintain at least six inches of freeboard on haul vehicles traveling off-site; and</li> <li>Stabilize or adequately wet material while transporting to reduce fugitive dust emissions; and</li> <li>Stabilize material while unloading to reduce fugitive dust emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Use tarps or other suitable enclosures on haul trucks.</li> <li>Comply with track-out prevention/mitigation requirements.</li> <li>Provide water while loading and unloading to reduce visible dust plumes.</li> <li>Maintain trucks and cargo compartments, to prevent any spillage of material.</li> <li>If excavated material is classified as a hazardous waste/material, off-site transport must comply with pertinent State and Federal rules and regulations.</li> </ul>
Landscaping	<ul style="list-style-type: none"> <li>Stabilize soils, materials, and slopes.</li> </ul>	<ul style="list-style-type: none"> <li>Apply water to materials to stabilize.</li> <li>Maintain materials in a crusted condition.</li> <li>Maintain effective cover over materials</li> <li>Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes.</li> <li>Hydroseed prior to rainy season.</li> </ul>
Road shoulder maintenance	<ul style="list-style-type: none"> <li>Apply water to unpaved shoulders prior to clearing; and</li> </ul>	<ul style="list-style-type: none"> <li>Installation of curbing and/or paving of road shoulders can reduce recurring maintenance</li> </ul>

Source Category	Control Measure	Guidance
	<ul style="list-style-type: none"> <li>Apply chemical dust suppressants and/or other appropriate material in accordance with DOT specifications to maintain a stabilized surface after completing road shoulder maintenance.</li> </ul>	<p>costs.</p> <ul style="list-style-type: none"> <li>Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.</li> </ul>
Staging areas	<ul style="list-style-type: none"> <li>Stabilize staging areas during use; and</li> <li>Stabilize staging area soils at project completion.</li> </ul>	<ul style="list-style-type: none"> <li>Limit size of staging area.</li> <li>Limit vehicle speeds to 15 miles per hour.</li> <li>Limit number and size of staging area entrances/exits.</li> </ul>
Stockpiles/bulk material handling	<ul style="list-style-type: none"> <li>Stabilize stockpiled materials</li> <li>Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed or the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.</li> </ul>	<ul style="list-style-type: none"> <li>Add or remove material from the downwind portion of the storage pile.</li> <li>Maintain storage piles to avoid slides.</li> </ul>
Traffic areas for construction activities	<ul style="list-style-type: none"> <li>Stabilize or maintain adequate moisture on all off-road traffic and parking areas; and</li> <li>Stabilize or maintain adequate moisture on all haul routes; and</li> <li>Direct construction traffic over established haul routes.</li> </ul>	<ul style="list-style-type: none"> <li>Apply gravel/paving to all haul routes as soon as possible to all future roadway areas.</li> <li>Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.</li> </ul>
Trenching	<ul style="list-style-type: none"> <li>Stabilize surface soils where trencher or excavator and support equipment will operate; and</li> <li>Stabilize soils at the completion of trenching activities.</li> </ul>	<ul style="list-style-type: none"> <li>Pre-watering of soils prior to trenching is an effective preventive measure.</li> <li>Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.</li> </ul>
Truck loading	<ul style="list-style-type: none"> <li>Material must be adequately wet prior to loading; and</li> <li>Freeboard must be 6 inches or greater.</li> </ul>	<ul style="list-style-type: none"> <li>Empty loader bucket such that no visible dust plumes are created.</li> <li>Ensure that the loader bucket is close to the truck to minimize drop height while loading.</li> </ul>
Unpaved roads/parking lots	<ul style="list-style-type: none"> <li>Stabilize soils to meet the applicable performance standards (surface crusting); and</li> <li>Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.</li> </ul>	<ul style="list-style-type: none"> <li>Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.</li> </ul>
Vacant land	<ul style="list-style-type: none"> <li>In instances where vacant lots are 0.10 acre or larger and have a cumulative</li> </ul>	<ul style="list-style-type: none"> <li>Installing barriers, curbs, fences, gates, posts, signs,</li> </ul>

Source Category	Control Measure	Guidance
	<p>area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access.</p>	<p>shrubs, tress or other effective control measures to prevent access to motor or off-road vehicles.</p>
<p>Onsite Disposal of asbestiform containing soils</p>	<ul style="list-style-type: none"> <li>• If possible, place excavated soils into fills constructed elsewhere on the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Fills with NOA content equal to or greater than 1.0%, or when visually evident fibrous materials likely to be asbestos are present, in residential landscaping areas must be covered by at least 24 inches of clean fill.</li> <li>• Document location and quantities of fills.</li> </ul>
<p>Offsite disposal of asbestiform containing soils</p>	<ul style="list-style-type: none"> <li>• Management and disposition of excavated soils transported offsite must be in accordance with federal, state, and local regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• For excavated soils transported offsite, information must be documented by owner/operator and retained for a period of 3 years.</li> </ul>
<p>Post construction stabilization of disturbed areas</p>	<ul style="list-style-type: none"> <li>• Must be completed no later than 30 days following completion of the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of vegetative cover; or</li> <li>• Placement of at least 3 inches of clean fill; or</li> <li>• Placement of a total of at least 12 inches, or maximum depth of irrigation improvements, whichever is higher, of clean fill in residential landscaping areas with NOA greater than 0.25%; or</li> <li>• Paving, foundations, retaining walls; or</li> <li>• Other measures as approved by APCO.</li> </ul>
<p>Signage</p>	<ul style="list-style-type: none"> <li>• Post warning signs at the main entrance to the project for the duration of soil disturbance activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Signs to be in compliance with current OSHA requirements.</li> <li>• Proposition 65 (H&amp;S Code 25249.5-25249.13) may apply.</li> </ul>
<p><b>Bulk Material Handling</b></p>		
<p>Handling of bulk materials</p>	<ul style="list-style-type: none"> <li>• When handling bulk materials, apply water or chemical/organic stabilizers/suppressants.</li> </ul>	
<p>Storage of bulk materials</p>	<ul style="list-style-type: none"> <li>• When storing bulk materials, comply with the conditions for a stabilize surface; or</li> <li>• Cover bulk materials stored outdoors</li> </ul>	



Source Category	Control Measure	Guidance
	<p>with tarps, plastic or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or</p> <ul style="list-style-type: none"> <li>• Construct and maintain wind barriers with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants; or</li> <li>• Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.</li> </ul>	
<p>On-site transporting of bulk materials</p>	<ul style="list-style-type: none"> <li>• Limit vehicular speed while traveling on work site; or</li> <li>• Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road; or</li> <li>• Apply water to the top the load; or</li> <li>• Cover haul trucks with a tarp or other suitable cover.</li> </ul>	
<p>Off-site transporting bulk materials</p>	<ul style="list-style-type: none"> <li>• Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and</li> <li>• Material must be adequately wet prior to loading; and</li> <li>• Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides and/or tailgate; and</li> <li>• Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved road, and apply water to the top of the load;</li> <li>• Cover haul trucks with a tarp or other suitable cover.</li> <li>• If excavated material is classified as a hazardous waste/material, off-site transport must comply with pertinent State and federal rules and regulations.</li> </ul>	
<p>Outdoor transport of bulk materials with a chute or conveyor.</p>	<ul style="list-style-type: none"> <li>• Fully enclose the chute or conveyor; or</li> <li>• Operate water spray equipment; or</li> <li>• Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less.</li> </ul>	

Source Category	Control Measure	Guidance
Removal of trackout material	<ul style="list-style-type: none"> <li>Manually wet sweeping and picking-up; or</li> <li>Operating HEPA filter equipped vacuum device; or</li> <li>Flushing with water, where the use of water will not result in adverse impacts on storm water drainage systems or violate any National Pollutant discharge Elimination System permit program; and</li> <li>The use of blower devices, or dry rotary brushes or dry brooms is expressly prohibited.</li> </ul>	
Frequency of trackout material removal	<ul style="list-style-type: none"> <li>Visible trackout must be immediately removed from paved public roads; and</li> <li>On interior paved roads trackout must be removed at least once per workday.</li> </ul>	
Trackout prevention for large operations or sites with more than 150 vehicle trips/day.	<ul style="list-style-type: none"> <li>Installation of grizzlies, or similar devices designed to remove dirt/mud from tires; or</li> <li>Installation of gravel pad; or</li> <li>Paving of interior roads.</li> </ul>	
<b>Blasting Activities</b>		
Site preparation (drilling, setting charges, burial of charges)	<ul style="list-style-type: none"> <li>Reduce dust from drilling operation.</li> <li>Pre-wet blast area.</li> <li>Cover charges to minimize dust.</li> </ul>	<ul style="list-style-type: none"> <li>Control rate of drilling.</li> <li>Apply water fog.</li> <li>Place blast mats over charges.</li> <li>Place soil mounds over charges.</li> <li>Wet entire area prior to blasting.</li> </ul>
Blasting activities	<ul style="list-style-type: none"> <li>Dust cannot exceed 25 feet or cross the project property line.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct blasting on calm days.</li> <li>Consider wind direction with respect to your property line, nearby residences and other receptors.</li> </ul>
Post-blasting activities	<ul style="list-style-type: none"> <li>Follow Best Management Practices for all construction activities.</li> </ul>	
<b>Dust Control Measures for Large Operations</b>		
Earth-moving (except construction cutting and filling areas, and mining operations)	<ul style="list-style-type: none"> <li>Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other</li> </ul>	

Source Category	Control Measure	Guidance
	<p>equivalent method approved by the Air Pollution Control Officer. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations;</p> <p>or</p> <ul style="list-style-type: none"> <li>For any earth-moving which is more than 25 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 25 feet in length in any direction. Visible emissions must not extend beyond property boundary.</li> </ul>	
Earth-moving: construction fill areas	<ul style="list-style-type: none"> <li>Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Air Pollution Control Officer. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Air Pollution Control Officer complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four hour period of active operations.</li> <li>For any earth-moving which is more than 25 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 25 feet in length in any direction. Visible emissions must not extend beyond property boundary.</li> </ul>	
Earth-moving: construction cut areas	<ul style="list-style-type: none"> <li>Conduct watering as necessary to prevent any visible emissions from extending beyond property boundary.</li> </ul>	
Disturbed surface areas: (except completed grading areas)	<ul style="list-style-type: none"> <li>Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.</li> </ul>	
Disturbed surface areas: completed grading areas	<ul style="list-style-type: none"> <li>Apply chemical stabilizer within five working days of grading completion; or</li> <li>Take actions as listed first and third as</li> </ul>	

Source Category	Control Measure	Guidance
	<p>specified for inactive disturbed surface areas.</p>	
<p>Inactive disturbed surface areas</p>	<ul style="list-style-type: none"> <li>• Apply water at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; or</li> <li>• Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; or</li> <li>• Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all time thereafter; or</li> <li>• Utilize any combination of control actions listed in this section such that, in total, these actions apply to all inactive disturbed surface areas.</li> <li>• Establishment and maintenance of surface crusting sufficient to satisfy the test in Section 223-2.10.C.</li> <li>• Approved mixture and tackifier and fiber mulch, applied per manufacturer's recommendation.</li> </ul>	
<p>Unpaved roads</p>	<ul style="list-style-type: none"> <li>• Water all roads used for any vehicular traffic at least once per every two hours of active operations or as often as necessary; or</li> <li>• Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface; and</li> <li>• Restrict vehicle speeds to 15 miles per hour.</li> </ul>	
<p>Open storage piles</p>	<ul style="list-style-type: none"> <li>• Apply chemical stabilizers; or</li> <li>• Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; or</li> <li>• Install temporary coverings; or</li> <li>• Install a three-sided enclosure with walls with no more than 50 percent porosity which extends, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.</li> </ul>	

Source Category	Control Measure	Guidance
All categories	<ul style="list-style-type: none"> <li>Any other control measures approved by the Air Pollution Control Officer as equivalent to the methods specified in this section may be used.</li> </ul>	
<b>Contingency Dust Control Measures For Large Operations</b>		
Earth-moving	<ul style="list-style-type: none"> <li>Cease all active operations except for dust mitigation activities; or</li> <li>Apply water to soil not more than 15 minutes prior to moving such soil; and</li> <li>Apply water during soil moving or disturbance operations.</li> </ul>	
Disturbed surface areas	<ul style="list-style-type: none"> <li>On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; or</li> <li>Apply chemical stabilizers prior to wind event; or</li> <li>Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; or</li> <li>Take the actions specified in the third control measure listed for "Inactive disturbed surface areas" in the "Dust Control Measures For Large Operations" section of this table; or</li> <li>Utilize any combination of control actions listed in this category such that, in total, these actions apply to all disturbed surface areas.</li> </ul>	
Unpaved roads	<ul style="list-style-type: none"> <li>Apply chemical stabilizers prior to the wind event; or</li> <li>Apply water twice per hour during active operations; or</li> <li>Stop all vehicular traffic, except for dust mitigation equipment.</li> </ul>	
Open storage piles	<ul style="list-style-type: none"> <li>Apply water twice per hour; or</li> <li>Install temporary coverings.</li> </ul>	
Bulk material transport	<ul style="list-style-type: none"> <li>Cover all haul vehicles; or</li> <li>Freeboard must be 6 inches or greater.</li> </ul>	

Source Category	Control Measure	Guidance
All categories	<ul style="list-style-type: none"> <li>Any other control measures approved by the Air Pollution Control Officer as equivalent to the methods specified in this section may be used.</li> </ul>	

Source: El Dorado County Air Quality Management District

## 2.7. Hazards and Hazardous Materials

A Preliminary Environmental Site Assessment has been prepared for the proposed project and is available for review at the City of Folsom Public Works Department.

### 2.7.1 Affected Environment

The project area consists of vacant land, Route 50, and residences. The area surrounding the El Dorado Hills Boulevard-Latrobe Road interchange is characterized by a shopping center in the northeast corner. Four gas stations are located near the interchange. Groundwater monitoring wells and remediation systems were not observed at these gas stations. A Pacific Gas and Electric substation is located along Route 50 west of White Creek Road (Clarksville Substation). This substation is located 100 m south of the highway right-of-way. The area surrounding the proposed Empire Ranch Road interchange is vacant. Grading activities are occurring in the area, north of Route 50, in preparation of residential development.

During site reconnaissance, no evidence of PCB-containing transformers, lead-based paints, underground storage tanks, above ground storage tanks, or other spills or releases were identified. No other areas of concern were identified.

A government database search was conducted to locate risk sites within 4.5 kilometers of the proposed project. Only one site of concern was located near the project corridor. A service station contained a leaking underground storage tank, however, the site has been cleaned and the case is closed.

### 2.7.2 Permanent Impacts

The project will not involve the routine transport, use, or disposal of hazardous materials. The project will not emit hazardous materials, substances, or waste near an existing or proposed school. No permanent impacts have been identified.

### **2.7.3 Temporary Impacts**

**Potential Impact 2.7.1: Soils within the project boundary may be contaminated with aerially deposited lead. The project area is not expected to contain asbestos-containing materials or lead-based paint.**

The project vicinity is located along Route 50 which has supported vehicular traffic since 1950. Due to the age of the roadway, the soils along Route 50 are likely contaminated with lead from car exhaust burning leaded gasoline. The lead in surface soils along highways can reach concentrations in excess of the hazardous waste threshold. These soils require disposal at a Class I landfill or on-site stabilization.

Due to the lack of structures at the proposed interchange site, asbestos containing materials and lead-based paint are not expected to occur within the project site.

**Potential Impact 2.7.2: The project area may contain Naturally Occurring Asbestos.**

Naturally Occurring Asbestos (NOA) is found in serpentinite material and soils and can be released during disturbance such as recreation or excavation. The serpentinite materials are usually found in ultramafic rocks. The proposed interchange and auxiliary lane construction work will require rock excavation. Review of site geology and field visits indicate the site is not mapped with ultramafic rocks. Additionally, consultation occurred with government and private entities that have worked within the project vicinity. Visual mapping conducted for the Empire Ranch residential subdivision and along Route 50 from the county line to El Dorado Hills Boulevard-Latrobe Road indicates the area does not contain ultramafic rock. Therefore, NOA is not expected to occur within the proposed interchange site. Consultation with El Dorado County Public Health Department also indicated the interchange site and Route 50 corridor in El Dorado Hills does not contain NOA. It should be noted, however, there is a possibility of finding serpentinite material in the fault zone or to the east of the fault zone (Bear Mountains Fault) during excavation of rock material, and could contain NOA. The Environmental Site Assessment recommends a geologist be present to observe construction activities (grading/excavation) so appropriate testing can be conducted if necessary. Also, refer to measure 2.6.11 for detailed procedures involving NOA.

### **2.7.4 Cumulative Impacts**

No cumulative impacts have been identified.



## **2.7.5 Mitigation, Minimization and Avoidance Measures**

### **Hazards and Hazardous Materials**

1. Special health and safety procedures should be implemented to protect construction workers near the potentially lead contaminated areas. A workplan for investigation of aerially deposited lead should be submitted prior to the start of construction activities. All work should be performed according to this workplan. The workplan should also provide for soil sampling and analysis for total lead (Potential Impact 2.7.1).
2. Project plans should include provisions for a Registered Geologist to observe construction activities in order to perform appropriate testing. If serpentinite material is discovered, proper health and safety precautions should be implemented. This includes preparing a health and safety plan, observing appropriate permits, and wetting areas during excavation (Potential Impact 2.7.2).

## **2.8. Geology**

A Preliminary Geotechnical Report has been prepared for the proposed project and is available for review at the City of Folsom Public Works Department.

### **2.8.1 Affected Environment**

The proposed project is located at the eastern foothill of Sierra Nevada. The existing ground elevations within the project area vary from Elevation 198 m (650 ft) to Elevation 238 m (780 ft) based on existing plans. At the proposed interchange location, Route 50 is located in a small valley bounded by two hills that are up to Elevation 247 m (810 ft) on the north and south side of the highway. The approximate distance between these two hills is about 152 m (500 ft).

The major stream in the area is Carson Creek, which is located east of the eastern end of the project limits.

The project area is located in the foothills of the Sierra Nevada Mountains just east of the eastern edge of the Sacramento Valley. The project is situated in the west-central part of a northwest-trending belt of metamorphic rocks that underlies the western slope of the Sierra Nevada between Mariposa and Lake Almanor. Farther to the east, plutonic rock (mainly granite, quartz monzonite, granodiorite and quartz diorite) make up the bulk of the Sierra Nevada Mountain Range.

The bedrock beneath the hills west of El Dorado Hills Boulevard consists of Mesozoic-age volcanic and metavolcanic rocks. East of El Dorado Hills Boulevard, bedrock consist of metavolcanic and ultramafic rocks. The Sierra Nevada metamorphic belt is dominated by a series of northwest trending fault systems that extend through the length of the foothill region. Most of the faults in the area are characterized as normal faults.

The project is located in a seismically active part of northern California. Many faults exist in the Central Valley area, which are capable of producing earthquakes, which may cause strong ground shaking at the site. The Bear Mountains fault zone is the closest fault to the project area and is located approximately one mile east of the interchange site. Potential seismic hazards may arise from three sources: surface fault rupture, ground shaking, and liquefaction. Because no active faults pass through the project site, the potential for fault rupture is relatively low. Also, based on the available data, the liquefaction potential of the site is low. Based on available geologic and seismic data, the possibility of the site to experience strong ground shaking may be considered high.

## **2.8.2 Permanent Impacts**

### **Potential Impact 2.8.1: Construction of the project would require grading and earth-moving activities.**

Construction of the project would require grading and possibly some cut and fill sections into the bedrock in order to accommodate the bridge structure and ramps. New fill materials may be required for the construction of the approach embankment for the overcrossing as well as the widening of Route 50. The foundation system for the overcrossing may consist of standard cast-in-drilled-hole piles. Caltrans standard driven piles, cast-in-steel-shell piles or driven steel H piles will be evaluated during design, but may not be considered feasible because of the hard rock subsurface condition, which generally results in hard driving.

Embankment construction may be required for the roadway widening and/or for the abutments of the proposed construction of the overcrossing. Some of these embankments may only be placed as sliver fills. However, these sliver fills are expected to be benched into the existing slopes for overall stability.

The embankment fill will be placed in accordance with the guidelines provided in the Caltrans Highway Design Manual. These guidelines require a detailed site-specific

geotechnical investigation, including exploration and assessment of subsurface geologic conditions, to evaluate cut- and fill slope stability and to provide soil engineering criteria for project grading and construction. The investigation will be based on surface and subsurface exploration, sampling, laboratory testing, and analyses. Compliance with standard Caltrans requirements would reduce this impact to a less-than-significant level.

**Potential Impact 2.8.2 Construction of the project would occur in an area subject to seismic activity.**

Construction of the project would occur in an area considered seismically active. There are several faults in the region which are capable of producing earthquakes that may cause strong ground shaking at the site. The design of the project will be based on additional site-specific geotechnical investigations and will be required to comply with standard Caltrans requirements for seismic safety. Compliance with these requirements would reduce this impact to a less-than-significant level.

**2.8.3 Temporary Impacts**

**Potential Impact 2.8.3 Construction of the project could require blasting or presplitting to assist in cutting the rock surface.**

The project may involve cutting into hard rocks and hard excavation may be encountered. Blasting or presplitting may be required for assisting the cutting of the rock surface. The need for blasting will be based on additional site-specific geotechnical investigation, including seismic refraction tests, which will be conducted during the design phase. Caltrans standard procedures require special precautions for handling, usage, and storage of blasting (explosive) material. Compliance with standard Caltrans requirements would reduce this impact to a less-than-significant level.

**2.8.4 Cumulative Impacts**

No cumulative impacts have been identified.

**2.8.5 Mitigation, Minimization and Avoidance Measures**

Compliance with standard Caltrans requirements would reduce geologic impacts to a less-than-significant level. No measures are required.

## BIOLOGICAL ENVIRONMENT

### 2.9. Biological Resources

A Natural Environment Study Report (NESR) was prepared for the proposed project and is available for review at the City of Folsom Public Works Department. Study methods and regulatory background are presented in the NESR.

Prior to conducting any field studies, the limits of the Biological Study Area (BSA) were established, as shown in Figure 2.1-1. The BSA, totaling 33.9 hectare (ha)/83.6 acres (ac) includes all lands within the proposed project right-of-way that would be affected by project construction.

#### 2.9.1 Affected Environment

Most of the BSA is within existing State right-of-way along the Route 50 corridor. Typical habitats within the BSA include primarily developed and disturbed ruderal roadside habitat. Smaller acreages of nonnative grassland and vernal marsh plant communities are also present. Within the project vicinity, the Route 50 corridor is characterized by a majority of upland nonnative grassland habitat along both the north and south shoulders.

Several natural intermittent and ephemeral drainages flow generally north to south through the BSA.

Land uses surrounding the BSA are comprised primarily of residential and commercial development.

##### 2.9.1.1. Plant Communities in the Biological Study Area

The vegetation within the project area was characterized in accordance with *Preliminary Descriptions of the Terrestrial Vegetation of California* (Holland 1986). According to Holland (1986), vegetation in the BSA consists of primarily nonnative grassland, vernal marsh, and disturbed/ruderal communities. Developed areas also occur within the BSA. Plant communities are shown in Figures 2.9-1A to 2.9-C.

##### *Nonnative Grassland*

Nonnative grassland occurs in undeveloped areas within much of the BSA on the shoulders and embankments of Route 50. This plant community is dominated by nonnative grasses such as medusa head (*Taeniatherum caput-medusae*), soft chess

(*Bromus hordeaceus*), and wild oat (*Avena barbata*). Other species found in this community include radish (*Raphanus sativus*), yellow star-thistle (*Centaurea solstitialis*), soaproot (*Chlorogalum pomeridianum*), blue dicks (*Dichelostemma capitatum*), fillaree (*Erodium* sp.), and bluegrass (*Poa* sp.).

A total of 6.4 ha (15.8 ac) of nonnative grassland occur in the BSA.

#### ***Vernal Marsh***

According to Holland, the vernal marsh community consists primarily of annual herbs and displays many similarities with vernal pool vegetation, though is generally larger and less ephemeral. Vernal marsh habitat is seasonal in nature and plants can often be seen flowering behind the retreating water's edge as the marsh dries. Vernal marsh occurs primarily within the drainages flowing through the BSA. Plant species that occur in this community include broad-leaf cattail (*Typha latifolia*), soft rush (*Juncus effusus*), water primrose (*Ludwigia peploides*), annual rabbit-foot grass (*Polypogon monspeliensis*), monkeyflower (*Mimulus guttatus*), bitter-cress (*Cardamine* sp.), and sedge (*Carex* sp.).

A total of 0.53 ha (1.31 ac) of vernal marsh occurs in the BSA.

#### ***Disturbed/Ruderal***

Disturbed/ruderal areas are lands that have been severely degraded by human actions and generally consist of ruderal species or are unvegetated. Dominant species in the BSA include medusa head, yellow star-thistle, milk thistle (*Silybum marianum*), fillaree, rancher's fireweed (*Amsinkia menziesii*), sow thistle (*Sonchus arvensis*), filaree, and other upland weedy species. Disturbed/ruderal areas within the BSA occur along the roadway edges on both the north and south side of Route 50 and in close proximity to developed areas within the BSA.

A total of 8.9 ha (21.9 ac) of disturbed/ruderal area occurs in the BSA.

#### ***Developed***

Developed areas consist of all artificial structures within the BSA including the paved portion of Route 50, adjacent roadways, and residential and commercial developments along the length of the BSA.

A total of 18.1 ha (44.6 ac) of developed area occurs in the BSA.

### **2.9.1.2. General Wildlife Usage/Movement in the Biological Study Area**

There are no terrestrial migratory wildlife corridors within the BSA. Existing culvert crossings beneath Route 50 provide limited value as movement corridors due to their small size. Typical wildlife usage in the BSA is limited to birds and mammals occurring along the project corridor.

Bird species observed in the BSA included red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), red-winged blackbird (*Agelaius phoeniceus*), horned lark (*Eremophila alpestris*), western meadow lark (*Sturnella neglecta*), and killdeer (*Charadrius vociferus*). Minimal nesting habitat is available for raptors and tree nesting migratory birds. No nests were observed. Other typical wildlife expected to utilize the existing habitats within the BSA include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), burrowing rodents, opossum (*Didelphis marsupialis*), deer, bobcat (*Linx rufus*), and other wildlife typically found in this region.

### **2.9.1.3. Aquatic Resources in the Biological Study Area**

Aquatic resources within the BSA are limited to ephemeral and intermittent drainages and other tributaries to Carson Creek. Vernal marsh habitat typically occurs in these natural drainages. Man-made water quality control ponds are also located near the proposed interchange as part of a large residential development under construction north of Route 50 in the City.

### **2.9.1.4. Special Status Species**

The following species were determined to have a real potential to occur within the BSA based on specific habitat requirements.

#### ***Cooper's Hawk***

The Cooper's hawk (*Accipiter cooperii*) is a State species of concern; it has no federal status. The Cooper's hawk generally nests in stands of riparian vegetation and forages in open woodlands.

Potential nesting trees are present at the western end of the alignment north of Route 50. Though potential suitable nesting trees are present in two small stands of cottonwood trees and one large willow in the western portion of the project, the proximity to Route 50 and urban development makes it unlikely that Cooper's

hawk would nest in the area. No raptor nests were identified during any of the surveys. The nearest California Natural Diversity Data Base (CNDDDB) occurrence is approximately 8 kilometer (km)/5 mile (mi) northwest of the BSA on the west side of Lake Natoma (1990).

### ***Swainson's Hawk***

The Swainson's hawk (*Buteo swainsoni*) is listed as threatened by the State and is fully protected under the Migratory Bird Treaty Act; it has no federal status.

Swainson's hawks migrate from their wintering habitat in South America to nesting grounds in Mexico, western U.S., and Canada. These hawks typically return to their nesting grounds in early March. The Central Valley is one of two primary nesting areas in California (the other being in northeastern California, primarily Modoc, Siskiyou, and Lassen Counties). Within the Central Valley, Swainson's hawks require fields or grasslands for foraging and breed in stands with few trees, riparian areas, and oak savannah.

Suitable foraging habitat for Swainson's hawk is present most of the length of the BSA on the north and south sides of Route 50. Foraging habitat within the BSA and surrounding vicinity consists of predominantly nonnative grassland. Potential nesting trees are limited to the western portion of the BSA in two stands of mature Fremont's cottonwoods (*Populus fremontii* ssp. *fremontii*) (one north of Route 50, the other on the southern shoulder), and a willow on the north shoulder opposite the second cottonwood stand. No nests were observed. Consequently, Swainson's hawk could potentially nest within or in close proximity to the BSA.

The closest recorded (1982) occurrence of Swainson's hawk is approximately 3.2 km (2 mi) southwest of the BSA at the intersection of Scott Road and White Rock Road (CNDDDB 2003). The closest known nesting Swainson's hawk is approximately 19 km (12 mi) southwest of the BSA along Deer Creek (1998).

### ***White-tailed kite***

The white-tailed kite (*Elanus leucurus*) is a federal species of concern and is classified by the California Department of Fish and Game (CDFG) as a "special animal" because of declines in their population. White-tailed kites build stick nests in the tops of trees and eggs are laid from January to June. They forage for small rodents over grassland and open savannah habitat.



Suitable foraging habitat is present in nonnative grassland habitat within the BSA. Potential nesting trees within the BSA include a stand of cottonwood at the western end of the alignment, and second stand of cottonwoods on the south shoulder of Route 50 near the interchange location, and a large willow on the north side of Route 50 opposite the second cottonwood stand. No other potential nesting habitat occurs in the BSA. No nests were observed.

#### ***Loggerhead Shrike***

The loggerhead shrike (*Lanius ludovicianus*) is a federal and State species of concern. This species inhabits open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Shrikes nest in densely-foliated shrubs or trees.

One adult individual loggerhead shrike was observed perching on a fence post within the BSA during the July 7, 2004 survey. The BSA also contains potentially suitable nesting and foraging habitat for the loggerhead shrike. No nests or nest sites were observed.

#### ***Nuttall's Woodpecker***

The Nuttall's woodpecker (*Picoides nuttallii*) is a federal species of local concern. It inhabits oak forests and woodlands, chaparral and riparian woodlands, especially areas dominated by willows and cottonwoods. In the Sierra Nevada foothills, the Nuttall's woodpecker prefers interior live oak and blue oak, and will use foothill pine outside of the breeding season.

Suitable habitat is present for this species within the BSA. This species could potentially occur within the cottonwood and willow trees near the Route 50 roadway shoulders. The oak trees in the BSA proposed for removal were not large enough to provide habitat for this species. No nests or individuals were observed during the surveys.

### **2.9.1.5. Waters of the U.S. and California Department of Fish and Game Waters (CDFG)**

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (CWA) 33 U.S.C. 1344 is the primary law regulating wetlands and waters. The CWA regulates the discharge of dredged or fill material into Waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the

purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states a federal agency cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the State level, wetlands and waters are regulated primarily by the CDFG and the CVRWQCB. Sections 1600-1607 of the CDFG Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement (Section 1602) will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the ACOE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG. The Regional Water Quality Control Boards were established under the California Porter-Cologne Water Quality Control Act to oversee water quality. In this case the CVRWQCB also issues water quality certifications in compliance with Section 401 of the CWA. Please see the Hydrology and Water Quality section 2.4 for additional details.

Waters of the U.S. and CDFG waters in the BSA are limited to several intermittent tributaries to Carson Creek and associated vernal marsh habitat west of the El Dorado Hills Boulevard-Latrobe Road interchange. A wetland delineation was conducted on February 6, 2004 and July 7, 2004 to determine the extent of jurisdictional waters within the BSA. The delineation has been forwarded to the ACOE for verification.

Per the delineation results, the BSA contains a total of approximately 0.53 ha (1.31 ac) of jurisdictional waters. All jurisdictional waters within the BSA were classified

as vernal marsh, and are both Waters of the U.S. and CDFG Waters (see Figures 2.9-1A to 2.9-1C).

**2.9.2 Permanent Impacts**

**Potential Impact 2.9.1: Implementation of the proposed project would result in permanent impacts to vegetation within natural communities adjacent to and on the shoulders of Route 50 within the new interchange footprint and highway ramp approaches.**

As shown in Table 2.9-1, the proposed project will result in permanent impacts to vegetation within natural communities adjacent to and on the shoulders of Route 50 within the new interchange footprint and highway ramp approaches.

**Table 2.9-1: Permanent Impacts to Natural Communities (Hectares/Acres)**

Plant Community	Project Impacts
Nonnative Grassland	5.26 ha (13.01 ac)
Vernal Marsh	0.15 ha (0.37 ac)
Disturbed/Ruderal	7.84 ha (19.38 ac)

Project impacts also include the loss of five valley oak trees (*Quercus lobata*), four Fremont’s cottonwood trees (*Populus fremontii*), and five arroyo willow trees (*Salix lasiolepis*) totaling 14 trees project wide.

The City of Folsom maintains a protective ordinance for tree removal and has developed mitigation ratios for replacement of certain “protected trees” (see Section 4.5). The proposed project will result in the removal of five protected valley oak trees between 15-25 cm (6-10 in) in diameter within City limits. Removal of the cottonwood and willow trees mentioned above will not be mitigated, as they do not fall under the City’s definition of “protected trees”.

**Potential Impact 2.9.2: Implementation of the proposed project would result in the loss of habitat used by special status species.**

Construction of the new interchange will result in the loss of 5.26 ha (13.01 ac) of nonnative grassland. This area is considered suitable Swainson's hawk and white-tailed kite foraging habitat.

Impacts to Nuttall's woodpecker may occur during tree removal activities associated with roadway and shoulder improvements and interchange installation. Loss of nesting habitat will occur from tree removal activities.

**Potential Impact 2.9.3: Construction of the proposed project would result in the loss of jurisdictional waters.**

Of the 0.53 ha (1.81 ac) of jurisdictional waters in the BSA, the project will result in the loss of 0.15 ha (0.26 ac). Project effects to jurisdictional waters consists of filling vernal marsh during the construction of the interchange. The loss of jurisdictional waters is less than 0.5 acres, and is therefore, exempt from City Ordinance 17.98.

**2.9.3 Temporary Impacts**

**Potential Impact 2.9.4: Construction of the proposed project may result in temporary impacts to special status species.**

The project may temporarily disturb Cooper's hawk, Swainson's hawk, white-tailed kite, loggerhead shrike, and Nuttall's woodpecker if they are in the vicinity of the project during construction activities.

**2.9.4 Cumulative Impacts**

No cumulative impacts are expected.

## 2.9.5 Mitigation, Minimization and Avoidance Measures

### Biological Resources

1. Per the City's tree ordinance, three options, or a combination thereof, are available for the removal of oak trees within this diameter at breast height (dbh) range (Potential Impact 2.9.1).

- a. Replacement of 15 gallon stock at a 8:1 ratio, totaling 40 replacement trees, or;
- b. Replacement of 61 centimeters (24 inches) box at a 4:1 ratio, totaling 20 replacement trees, or;
- c. Payment of an in-lieu fee of \$750 per tree, totaling \$3,750.

It should be noted replacement ratios vary depending on tree dbh. Larger trees require a higher replacement ratio. All trees proposed for removal within the BSA are within the City's designated 15-25 centimeters (6-10 inches) size category and are consistent with replacement ratios listed above.

To avoid the introduction of invasive species into the BSA during project construction, contract specifications shall include, at a minimum, the following measures.

- a. All earthmoving equipment to be used during project construction shall be thoroughly cleaned before arriving on the project site.
- b. All seeding equipment (i.e., hydroseed trucks) shall be thoroughly rinsed at least three times prior to beginning seeding work.
- c. To avoid spreading yellow-star thistle or other invasive species already existing on-site, to off-site areas, all equipment shall be thoroughly cleaned before leaving the site.

2. Impacts to Special Status Species will be mitigated as follows (Potential Impacts 2.9.2 and 2.9.4):

#### *Cooper's hawk*

If work must be conducted during the nesting season (March 1 to August 31), no more than ten working days prior to the start of construction, a qualified biologist shall survey the BSA for presence of nesting Cooper's hawks. If any nesting activity

is observed, the County shall consult with CDFG to determine the best course of action, which would include establishment of setbacks around trees with active nests until fledglings have left the nests, as determined by a qualified biologist. Setbacks shall be marked by brightly colored fencing. If no nesting activity is observed, work shall proceed as planned.

*Swainson's hawk, White-tailed kite, Loggerhead shrike*

If tree removal or tree trimming is necessary, activities will be conducted between September 15 and February 15. If activities cannot be conducted during this time frame, a preconstruction survey shall be conducted by a qualified biologist no more than ten days prior to the start of construction. If Swainson's hawk, White-tailed kite, Loggerhead shrike, or other raptors are observed nesting, CDFG shall be contacted and a work window would be implemented for portions of the project (i.e., depending on the proximity to the nest).

*Nuttall's woodpecker*

If work must be conducted during the nesting season (March 1 to August 31), at least two weeks prior to the start of construction, a qualified biologist shall survey the BSA for presence of nesting Nuttall's woodpeckers. If any nesting activity is observed, the City shall consult with CDFG to determine the best course of action, which would include establishment of setbacks around trees with active nests and continue until fledglings have left the nests, as determined by a qualified biologist. Setbacks shall be marked by brightly colored fencing.

*Migratory Bird Treaty Act*

The proposed project could potentially affect migratory birds nesting in the BSA. Disturbance of these birds during their breeding season (March 1 to September 15) is prohibited under the Migratory Bird Treaty Act.

The following seasonal work restrictions will be implemented during construction to avoid disturbing nesting birds:

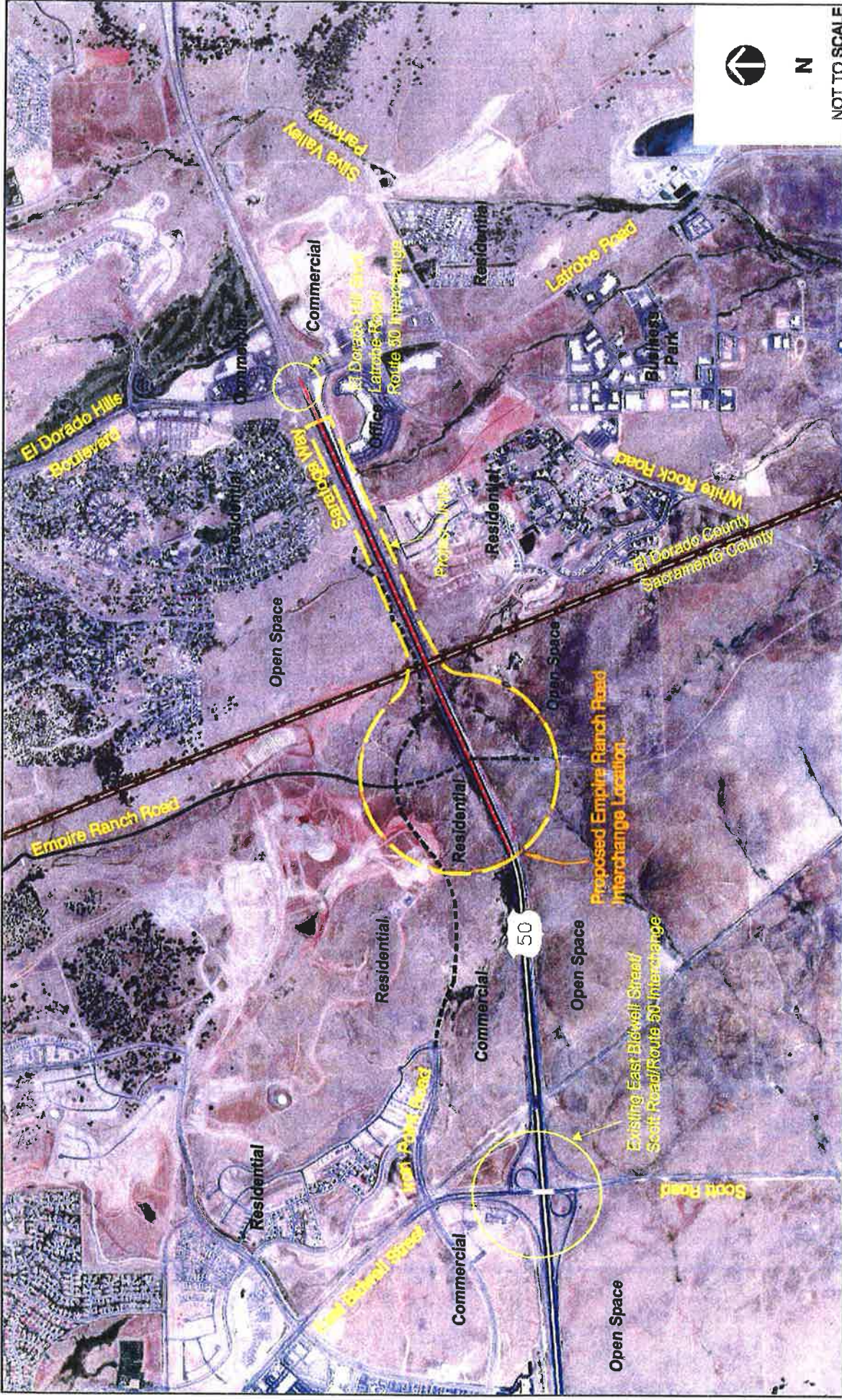
- a. Work will be conducted outside the nesting season (September 16 through February 31), or;
- b. If work must be conducted during the nesting season (March 1 to September 15), no more than ten working days prior to the start of construction, a qualified biologist shall survey the BSA for presence of nesting birds. If any nesting activity is observed, the City shall consult with CDFG to determine

the best course of action, which would include establishment of setbacks around trees with active nests.

3. Impacts to jurisdictional waters will be mitigated as follows (Potential Impact 2.9.3):

- a. In order to offset impacts to wetlands, seasonal wetland credits will be purchased from a mitigation bank, at a 2:1 ratio, to mitigate the loss of vernal marsh removed by the project. Preliminary investigation indicates seasonal wetland credits are available at the Wildlands bank, located in Sheridan, California. The 2:1 ratio is generally acceptable to the ACOE for seasonal wetland mitigation.
- b. The waters of the U.S. within the BSA that will be affected by the project are regulated by the Army Corps of Engineers (ACOE) under Section 404 of the CWA. Under Section 404 of the CWA, the ACOE regulates the discharge of dredged or fill material into waters of the U.S. It is expected the discharges into waters of the U.S. (fill) from the project will be authorized under Nationwide Permit (NWP) 14 (Linear Transportation Crossings).
- c. Discharges into waters of the U.S. under Section 404 require a water quality certification from the RWQCB, pursuant to Section 401 of the CWA. The RWQCB may opt to waive the Water Quality Certification and instead issue waste discharge requirements pursuant to their authority under the Porter-Cologne Act.
- d. Waters of the U.S. and vernal marsh habitat are regulated by CDFG under Sections 1600-1616 of the Fish and Game Code. Impacts to CDFG waters will require a Streambed Alteration Agreement from CDFG.





NOT TO SCALE

FIGURE 2.1-1

Empire Ranch Road Interchange Project  
Current Land Use

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS, 2004

F:\MK\330\Graphics\EIR\fig2.1-1-current land use.cdr (7/7/05)



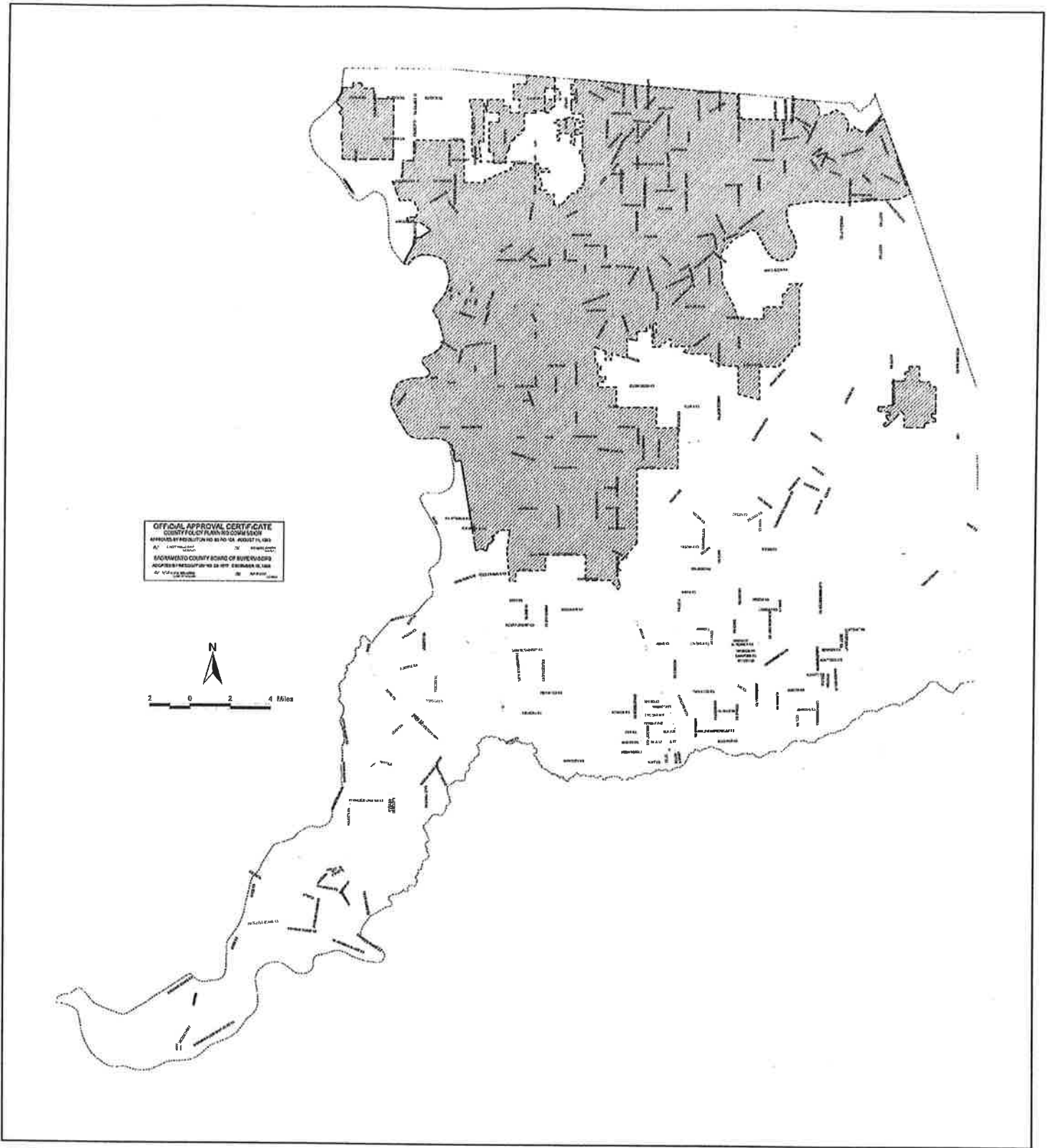


FIGURE 2.1-2



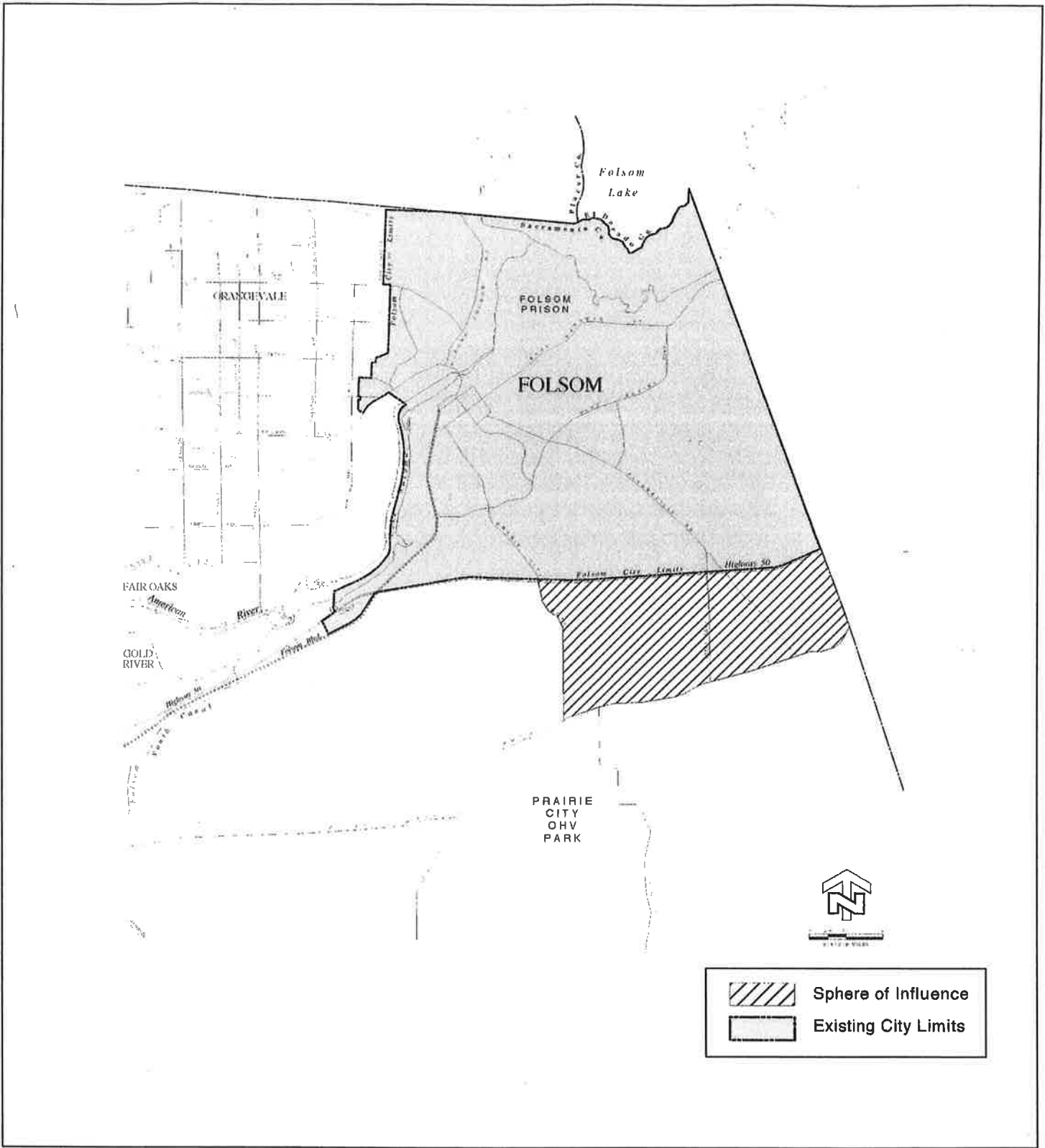
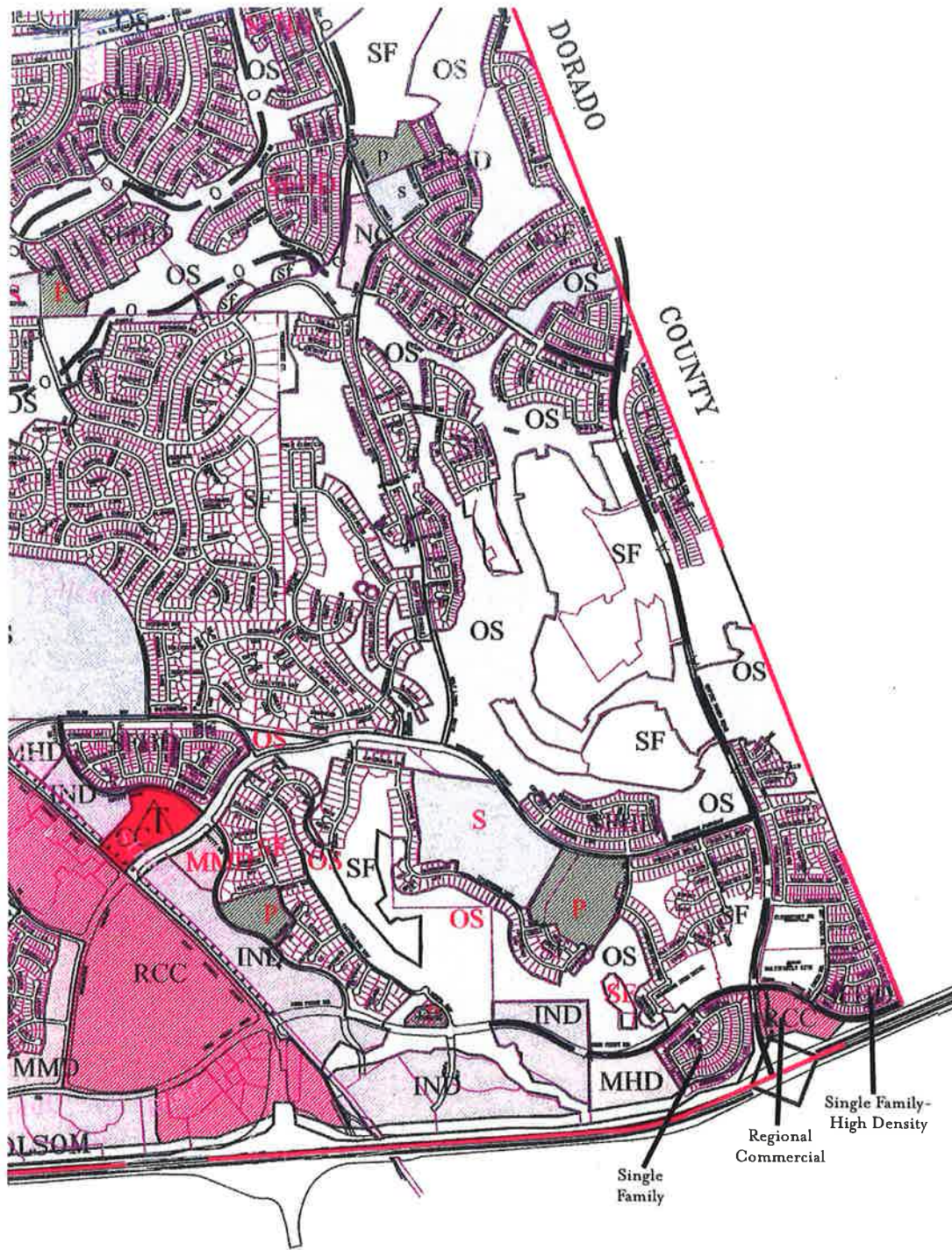


FIGURE 2.1-3





\* Also depicts Russell Ranch Specific Plan



FIGURE 2.1-4





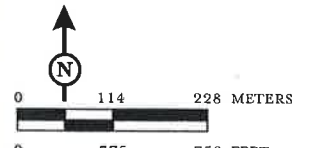
FIGURE 2.2-1

Empire Ranch Road Interchange Project  
Traffic Study Area





FIGURE 2.5-1



LEGEND

- ▲ Monitor Location
- Receptor Location

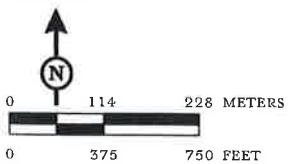
SOURCE: Aerial - USGS DOQQ (1998), CAD - Mark Thomas & Company, Inc.  
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Empire Ranch Road Interchange  
 Noise Impact Analysis  
 Monitoring and Modeled Receptor Locations  
 03-SAC-50 KP 36.1 SAC/3.1 ED (PM 22.4 SAC/2.0 ED)





FIGURE 2.5-2



LEGEND

- Receptor Location
- Sound Wall 3.7m (12 ft)





SOURCE: Aerial - USGS DOQQ (1998), CAD - Mark Thomas & Company, Inc.  
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Empire Ranch Road Interchange  
 Noise Impact Analysis  
 Modeled Soundwall and Receptor Locations

03-SAC-50 KP 36.1 SAC/3.1 ED (PM 22.4 SAC/2.0 ED)

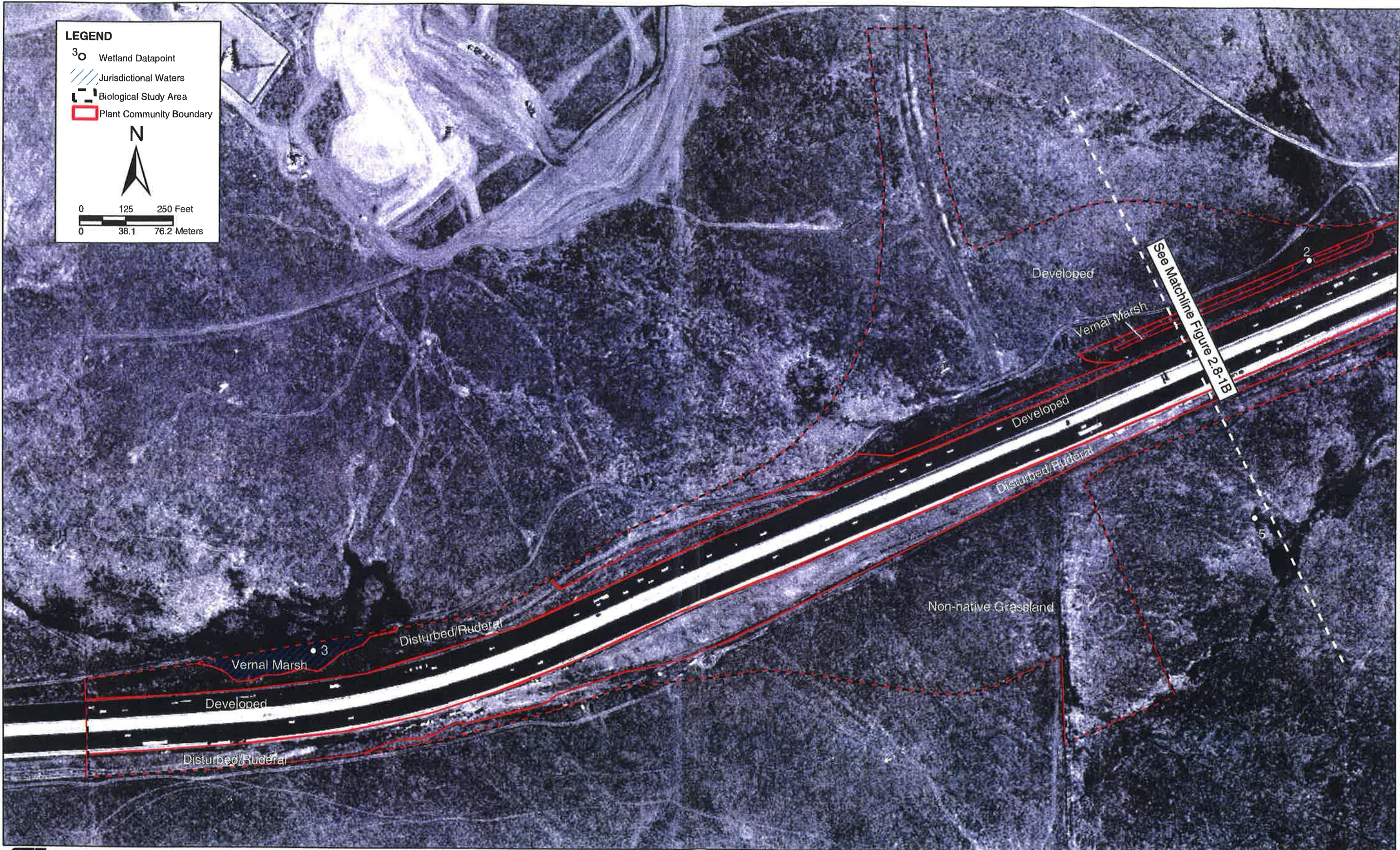


**LEGEND**

-  Wetland Datapoint
-  Jurisdictional Waters
-  Biological Study Area
-  Plant Community Boundary



0 125 250 Feet  
0 38.1 76.2 Meters



Source: Basemap - Mark Thomas & Company  
Mapping - LSA Associates, Inc.

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FIGURE 2.9-1A

Empire Ranch Road/State Route 50 Interchange  
03-SAC/ED-50  
EA #IC9500

Plant Communities and Potential Jurisdictional Waters



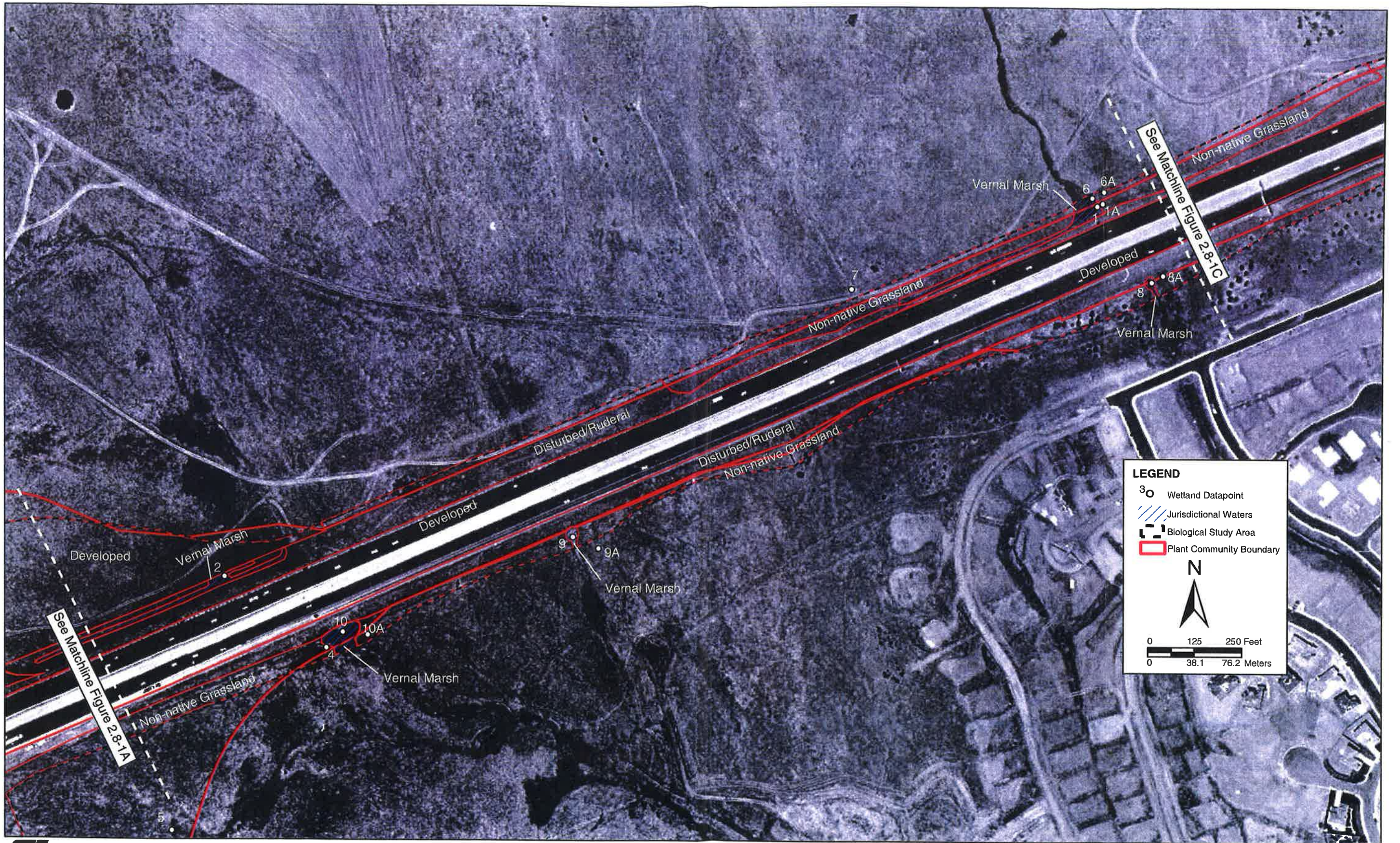


FIGURE 2.9-1B



Source: Basemap - Mark Thomas & Company  
 Mapping - LSA Associates, Inc.

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Empire Ranch Road/State Route 50 Interchange  
 03-SAC/ED-50  
 EA #IC9500  
 Plant Communities and Jurisdictional Waters



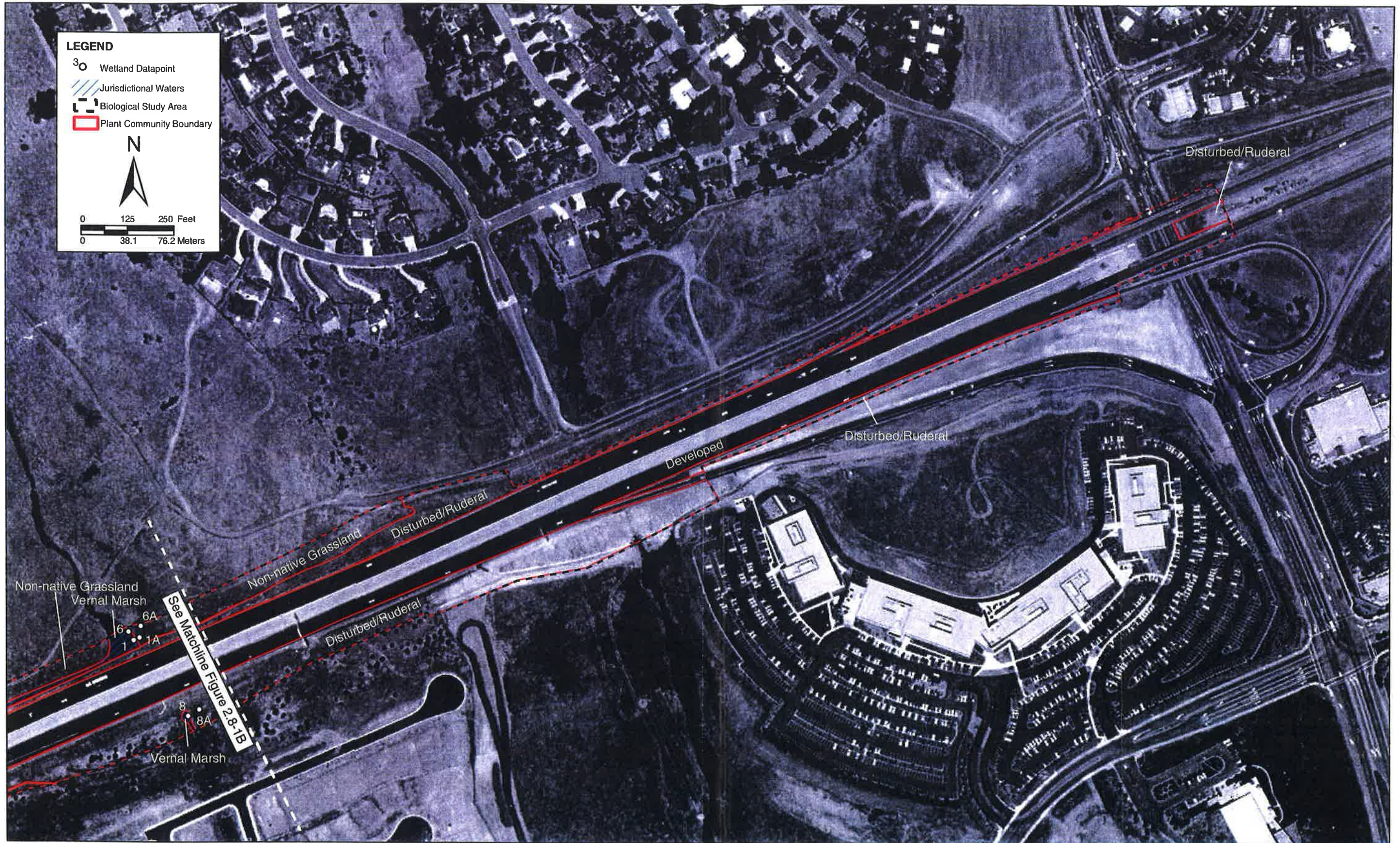


FIGURE 2.9-1C



Source: Basemap - Mark Thomas & Company  
Mapping - LSA Associates, Inc.

Empire Ranch Road/State Route 50 Interchange  
03-SAC/ED-50  
EA #IC9500  
Plant Communities and Jurisdictional Waters



## **Chapter 3. CEQA Required Topics**

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### **3.1. Irretrievable/Irreversible Impacts**

Implementation of the proposed action involves a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period the land is used as a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material are expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon the continued availability of these resources. Any construction will also require a substantial one-time expenditure of local and federal funds, which are not retrievable.

The commitment of these resources is based on the concept residents in the immediate area, region, and State will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

### **3.2. Growth Inducement**

The proposed project is considered a “growth accommodating” project. With the proposed improvements, the new interchange would accommodate growth forecast for Year 2025 conditions, including forecast traffic volumes from local development and buildout of the City of Folsom General Plan. The proposed interchange would be unnecessary if the forecast traffic volumes remained unchanged for the foreseeable project horizon.

While the new interchange is considered growth accommodating, the interchange is a key element for controlling future growth, including development that is contingent upon the additional interchange traffic capacity needed to accommodate forecast

traffic volumes. Accordingly, the interchange could be a constraint with respect to those planned projects, facilities and improvements. Likewise, without the proposed interchange improvements, the goals and objectives and land use plan of the Folsom General Plan could not be achieved.

As discussed in Section 2.1, Land Use, the interchange project is urban in nature, and does not contain any aspects that promote growth or extension of urban services. In fact, the design of the interchange does not promote growth south of Route 50. The interchange design terminates Empire Ranch Road at a dead-end on the south side of Route 50, without any break in access control. As such, the interchange would not create the need for an extension of services outside of Sacramento County's Urban Service Boundary. Additionally, numerous obstacles complicate the future development opportunities south of Route 50, including expanding the Urban Service Boundary and amending the Sacramento County General Plan and associated zoning ordinances. Additionally, the need for the interchange is in response to the deteriorating traffic level of service created by growth within the area and will meet the majority of the needs for increasing the level of service. Therefore, the proposed interchange is not likely to induce growth further within the project area, but rather would accommodate recent and forecast growth.

### **3.3. Summary of Significant and Unavoidable Adverse Impacts**

Impacts that are adverse and unavoidable have been identified for Transportation and Traffic. As a result of the project, traffic conditions will operate at unacceptable levels of service along Route 50 and at local roadway facilities. Mitigation does not exist that would offset these impacts or reduce them to a less than adverse level.

### **3.4. Summary of Cumulative Impacts**

Cumulative project-related impacts are expected for Transportation and Traffic.

**Potential Traffic Impact 2.3.1:** Construction of the project would result in a change in traffic patterns by diverting ramp volumes from both the East Bidwell Street interchange (25 percent) and the El Dorado Hills Boulevard/Latrobe Road interchange (2 percent) to the Empire Ranch Road interchange in 2006. In total, traffic is forecast to increase at all three interchanges by approximately 10 percent in 2006 and approximately 12 percent in the Design Year.

**Potential Traffic Impact 2.3.2:** Construction of the project would result in increased traffic on Route 50 and continued unacceptable conditions on Route 50 in the peak directions in Construction Year and Design Year conditions; however, an improvement over the No Build condition would occur since there would be a more balanced distribution of trips across three interchanges versus two interchanges under the No Build conditions.

**Potential Traffic Impact 2.3.3:** Construction of the project would result in unacceptable traffic operations at the Route 50 westbound ramps at Empire Ranch Road during a.m. peak hour (Build Year Alternative) and during the a.m. peak hour and the p.m. peak hour (Design Year Alternative) because of mainline capacity limits.

The following issue areas will not have cumulative impacts associated with project implementation:

- Air Quality
- Noise
- Biological Resources
- Geology
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use

## **Chapter 4. Consultations/List of Preparers & Reviewers**

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### **4.1. Coordination and Consultation**

This section describes the involvement of public agencies and the general public in development of the proposed project. It also lists contacts made with federal, State and local agencies and other organizations or individuals during preparation of the environmental technical reports.

#### **4.1.1.1. Project Development Team**

The PDT includes representatives from the City of Folsom, Caltrans, El Dorado County Department of Transportation, Sacramento County Department of Transportation, Federal Highway Administration, and traffic and environmental consultants. The PDT has met periodically since August 2003.

#### **4.1.1.2. Community Interaction**

The City of Folsom Department of Public Works conducted a Public Workshop/ Scoping Meeting on September 3, 2003 to allow for public comment on the proposed project.

The NOP and Initial Study were circulated for 30 days, starting March 25, 2003. Comments received through the NOP circulation are addressed throughout this document.

This environmental document will be circulated for public comment for a 30-day period pursuant to CEQA guidelines. During the review period, a public hearing will be conducted to solicit feedback from the community regarding the potential impacts of the proposed project. A response to comments document will be prepared prior to certification and approval of the EIR.

This environmental document will be circulated for public comment for a 30-day period pursuant to NEPA guidelines. During the review period, a public hearing will be conducted to solicit feedback from the community regarding the potential impacts of the proposed project. A response to comments document will be prepared prior to adoption of the FONSI.



#### **4.1.1.3. Consultation**

##### ***Native American Consultation***

The following consultations were conducted in conjunction with preparing the cultural resources documentation:

- Native American Tribes, Groups and Individuals (refer to Archaeological Survey Report)
- Native American Heritage Commission
- Sacramento Discovery Museum
- Heritage Association of El Dorado County
- Folsom Historical Society and Folsom History Museum

##### ***Local Agencies and Organizations***

Coordination efforts have occurred as necessary to respond to the Notice of Preparation (NOP) comments (also see Appendix A-1), as well as to address issues in the environmental document. For the NOP coordination, the following persons/local agencies/organizations provided comments to the NOP, and responses were incorporated into the EIR/EA document.

- State Clearinghouse Letter, October 2, 2003.
- City of Folsom Parks and Recreation Department, October 7, 2003.
- Harriet B. Segel, October 1, 2003
- Sacramento Metropolitan Air Quality Management District, November 17, 2003.
- County of Sacramento, Public Works Agency, September 8, 2003.

Other persons/local agencies/organizations that were contacted are as follows:

- Jim Brennon (Brown Buntin Acoustical Engineers)
- Gail Furness de Pardo (City of Folsom)
- Jim Konopka (City of Folsom)
- Tom Garcia (City of Folsom)
- Gordon Tornberg (City of Folsom)
- John Ainsworth (El Dorado County)
- Jim Ware (El Dorado County)

- Steve Hust (El Dorado County)
- Leighann Moffitt (Sacramento County)
- Chris Nagano (US Fish and Wildlife Service)

## **4.2. List of Preparers**

The following persons participated in the preparation of the environmental document:

### **4.2.1 LSA Associates, Inc.**

Bill Mayer, Project Manager/Principal (environmental review). Twenty-five years experience in environmental planning and document preparation. Mr. Mayer has managed or is currently managing several freeway interchange projects. California State Polytechnic University, Pomona, Bachelor of Science in Urban Planning, June 1973.

Laura Belt, Assistant Wildlife Biologist (species list). Ten year experience in conducting a variety of habitat and wildlife surveys throughout the state, with areas of emphasis including bird nesting, habitat use, and movement. Ms. Belt also has experience with many of the reptiles, birds, and mammals common to these habitats, including species of special concern. California State University, Bakersfield, Bachelor of Science Degree in General Biology, 1989.

Cherilyn Meigs, Biologist (biologist). Five years of experience in conducting habitat and wildlife surveys and preparing biological assessments, environmental analysis, initial site assessments and habitat mitigation plans. University of California, Davis, CA. M.S. Ecology, 2002. California State University Sacramento, CA. B.S. Biological Conservation, 1997.

Mike Trueblood, Assistant Biologist (wetlands and waters of the U.S.). Four years of experience with biological resources, wetland projects, and construction projects. University of California at Davis; Davis, CA. B.S. Wildlife, Fish, and Conservation Biology, 2000.

Leanne Villa, Environmental Planner (environmental review). Seven years experience in preparing environmental documents. University of California, Berkeley, Bachelor of Science, Conservation and Resource Studies, 1994.

Neal Kaptain, Cultural Resource Manager (cultural resources). B.A., Anthropology, University of California, Los Angeles, California. Graduate Program, Department of Anthropology, University of California, Los Angeles, California.

Susan Huster, Cultural Resources Analyst (cultural resources). M.A., Anthropology, California State University, Hayward, CA. 2001.

Tony Chung, Principal (air quality and noise). Responsible for conducting Air Quality/Noise evaluations. He has performed more than 300 EIR/EIS (CEQA/NEPA) related and individual noise studies for community and transportation noise analyses, including field measurement, modeling, and data analysis. University of California, Los Angeles, Ph.D., Mechanical Engineering, 1991. University of California, Los Angeles, Engineer Degree in Mechanical Engineering, 1985.

#### **4.2.2 Foothill Resources, Ltd.**

Judith Marvin, Architectural Historian. Foothill Resources, Ltd. B.A., History, University of California, Berkeley, California, 1962. Registered Professional Historian, certified in Architectural History, Archival Administration, Museology, and Cultural Resource Management. California Council for the Promotion of History, 1986.

#### **4.2.3 Mark Thomas and Company, Inc.**

David E. Melis, P.E. – Project Manager. B.S. Civil Engineering, California State University Sacramento. California Registered Professional Engineer. Sixteen years experience in the design of transportation facilities, including arterial roadways and interchanges.

#### **4.2.4 Fehr & Peers Transportation Consultants**

Alan Telford, P.E. - Senior Principal - Fehr & Peers. B.S. in Civil Engineering - University of Connecticut. Twenty years of transportation consulting experience having worked on hundreds of transportation studies throughout the Sacramento region.

Ron Milam, AICP - Principal - Fehr & Peers. Has over 13 years of experience preparing traffic operations reports and CEQA/NEPA transportation impact studies for freeway and interchange projects in California. He has a B.S. in environmental policy analysis and planning from U.C. Davis and is an instructor with the U.C.

Berkeley ITS Tech Transfer Program teaching the Managing Transportation and Land Use Interactions course.

Jason Isaac - Senior Transportation Engineer - Fehr & Peers. B.S. in Civil Engineering CSU Sacramento, 1998. Has four years of experience preparing transportation and circulation elements for CEQA environmental documents.

Tao "Anna" Luo - Transportation Engineer - Fehr & Peers. B.S. in Transportation Engineering - from Northern Jiaotong University (Beijing, China) and M.S. in Civil Engineering from Michigan State University. Has two years of experience preparing transportation and circulation elements for CEQA environmental documents.

### **4.3. List of Reviewers**

#### **4.3.1 Caltrans**

Guadalupe Jimenez, Associate Environmental Planner, Caltrans. B.A. Environmental Studies/Minor Biology, California State University, Sacramento. Fifteen years experience in environmental planning/permitting.

Patrick McAchren, Associate Environmental Planner, Caltrans. B.A. Geography, California State College Chico, Chico. M.S. Environmental Studies/Public Administration, California State University, Sacramento. Thirty-one years experience reviewing and preparing environmental documents, public policy review and creation, and land use planning.

Rajive Chadha – Environmental Engineer/Hazardous Materials, Caltrans. B.A.Sc. Civil Engineering, University of Ottawa. Has fourteen years of experience in environmental engineering.

Steve Mahnke, Senior Transportation Engineer – Civil, Caltrans. B.S., Geography, University of California, Davis, M.S., Civil Engineering, University of California, Davis. Seventeen years experience in geotechnical engineering.

Karen McWilliams, Senior Environmental Planner, Caltrans. B.A., Environmental Studies, California State University, Sacramento. Twelve years experience in environmental planning.

Che McFarlin, Associate Environmental Planner, Caltrans. B.S., Urban and Regional Planning, University of Iowa. Five years experience in environmental planning.

Benjamin Tam, Transportation Engineer, Caltrans. B.S. Civil Engineering, San Jose State University. Fifteen years Caltrans experience, 7 years noise experience.

Donald E. Smoldt, Environmental Planner/Wildlife Biologist. M.A. Natural Sciences, San Jose University; B.S. Wildlife Management, Humboldt State University. Fifteen years experience as environmental consultant in Central California, specializing in special-status wildlife species issues.

Erick Wulf, Associate Environmental Planner, Caltrans. B.A., Anthropology and M.A., Anthropology, California State University Sacramento. Fifteen years experience in cultural resource management.

Gail St. John, Associate Environmental Planner and Architectural Historian, Caltrans. B.A., Art History, University of California at Davis; M.S., Historic Preservation, University of Georgia. Eight years experience in Conducting historic architectural studies.

Sarah Allred, Associate Environmental Planner, Caltrans. B.A., Archaeology and B.A., Anthropology, California State University Sacramento. Fourteen years experience in cultural resource management.

#### **4.3.1.1. Federal Highway Administration**

Leland Dong, Senior Transportation Engineer, FHWA. B.A., Long Beach State, Long Beach. Twenty years experience in preparing, reviewing, and approving environmental documents-including Section 4(f) evaluations.

Cesar E. Perez, Senior Transportation Engineer, FHWA. M.A. Transportation, University of Nebraska. B.S. Civil Engineering, University of Puerto Rico. Twenty-seven years experience at FHWA.



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## **Appendix A CEQA Checklist**

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### **Determining Significance Under CEQA**

As defined in Section 15382 of CEQA, a significant impact "means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

Section 15064 provides guidance in determining whether an effect on the environment is considered significant. In general, determinations should be based on scientific and factual data. Input from members of the general public who are impacted by the proposed project should also be considered in determining significance. The lead agency for the proposed project should consider direct physical changes to the environment, reasonably foreseeable indirect changes, and cumulatively considerable impacts.

Comments from public agencies and general public received through the Notice of Preparation process have been incorporated into the document. Comment letters are provided in Appendix A-1.

Based on the results of the Initial Study and NOP process, the following areas have been excluded from further evaluation:

- Agricultural Resources
- Aesthetics
- Community Impact
- Geology and Soils
- Floodplain and Flood Hazards
- Mineral Resources
- Public Services
- Utilities and Service Systems
- Recreation



The following criteria were used to evaluate the significance of impacts resulting from the proposed project.

#### **5.1.1.1. Land Use**

Would the project:

- Physically divide an established community?
- 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?
- Induce substantial population growth in the area?
- Result in the substantial alteration of the present or planned land use of the area?

#### **5.1.1.2. Hydrology and Water Quality**

Would the project:

- Violate any water quality standards or waste discharge requirements?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of a stream or river, or substantially increase the rate or amount of surface runoff, in a manner which would result in substantial erosion or siltation on- or off-site?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems?
- Potential impact of project construction on storm water runoff?
- Potential impact of project post-construction activity on storm water runoff?
- Potential for discharge of storm water from material storage area, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas?
- Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit

- Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies.
- Potential for significant change in the flow velocity or volume of storm water runoff that can cause environmental harm?
- Potential for significant increase in erosion of the project site or surrounding areas?

#### **5.1.1.3. Transportation and Traffic**

Would the project:

- Cause an increase in traffic which 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)?
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

#### **5.1.1.4. Noise**

Would the project:

- 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?
- Exposure of persons to or generation of excessive noise levels in the project vicinity above levels existing without the project?
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

#### **5.1.1.5. Air Quality**

Would the project:

- Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan?

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- Expose sensitive receptors to substantial pollutant concentration?
- Create objectionable odors affecting a substantial number of people?

#### **5.1.1.6. Vegetation and Wildlife**

- Would the project:
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or U.S. Fish and Wildlife Service?
- 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?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

#### **5.1.1.7. Wetlands and Waters of the U.S.**

Would the project:

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

#### **5.1.1.8. Threatened and Endangered Species**

Would the project:

- Adversely impact, either directly or through habitat modifications, any endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (Section 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?
- 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 CDFG or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or U.S. Fish and Wildlife Service?

#### **5.1.1.9. Hazards and Hazardous Materials**

Would the project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?
- Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

#### **5.1.1.10. Cultural Resources**

Would the project:

- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
- Cause a substantial adverse change in the significance of an archaeological resource (i.e., an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that the resource contains information needed to answer important scientific research questions, has a special and particular quality such as

being the oldest or best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person)?

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- Disturb any human remains, including those interred outside of formal cemeteries?

## **CEQA Environmental Checklist**

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The CEQA impact levels include potentially significant impact, less than significant impact with mitigation, less than significant impact, and no impact. Please refer to the following for detailed discussions regarding impacts:

CEQA:

- Guidance: Title 14, Chapter 3, California Code of Regulations, Sections 15000 et seq. ([http://www.ceres.ca.gov/topic/env\\_law/ceqa/guidelines/](http://www.ceres.ca.gov/topic/env_law/ceqa/guidelines/))
- Statutes: Division 13, California Public Resource Code, Sections 21000-21178.1 ([http://www.ceres.ca.gov/topic/env\\_law/ceqa/stat/](http://www.ceres.ca.gov/topic/env_law/ceqa/stat/))

CEQA requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. In Chapter 3, no discussion has been provided for areas identified as “no impact”.



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) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Discussion:**

On December 1, 1992, the Folsom City Council adopted Findings and Facts and Overriding Considerations on the Russell Ranch Specific Plan project. With respect to visual effects, the City found in the Final Environmental Impact Report the following "Significant Impact 4.5.4: As viewed from Highway 50, the proposed project (Russell Ranch Specific Plan) would appear as a substantial, obvious, and disharmonious modification of the landscape, to the extent that it clearly dominates the view in the project vicinity." The Russell Ranch Specific Plan project includes the proposed Empire Ranch Road/Route 50 Interchange and therefore, is subject to this previous finding.

The proposed project is construction of a new interchange and related improvements on Route 50. New residential development is currently under construction in conjunction with the Empire Ranch (Russell Ranch) Specific Plan, although is not yet occupied. The interchange improvements will be substantially screened from view from these residences due to the presence of intervening noise barriers, as well as elevational/topographical differences. The residential uses are higher in elevation than the interchange improvements and views (rear yard views) extend over noise barriers and beyond the proposed interchange/existing route 50 improvements. The project would not have a substantial adverse effect on any scenic vistas.

Construction of the proposed project would require the removal of rock outcroppings along the south side of Route 50 and in the median of Route 50 east of El Dorado Hills Boulevard. The rock outcroppings are not considered scenic resources along the highway.

Construction of the proposed project would result in the installation of street lights at the new interchange. These street lights would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

**AGRICULTURE RESOURCES - 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"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Discussion:**

The proposed project is construction of a new interchange and related improvements on Route 50. The area north of Route 50 is being developed while the area to the south of Route 50 is used for grazing of livestock. According to the City of Folsom Sphere of Influence Amendment EIR (Section 4.2, Agriculture and Open Space), grazing land is not considered an important farmland as defined by the California Department of Conservation Farmland Mapping and Monitoring Program.

According to the City of Folsom Sphere of Influence Amendment EIR (Section 4.2, Agriculture and Open Space), land south of Route 50 at the location of the proposed project is not under Williamson Act contract.

**AIR QUALITY - Would the project:**

a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan?

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

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

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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d) Expose sensitive receptors to substantial pollutant concentration?

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

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

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Discussion:**

In the adoption of the Folsom General Plan and certification of the EIR which accompanied the General Plan, the City Council adopted a Statement of Overriding Considerations to address the unavoidable significant adverse impacts which may result from implementation of the General Plan. While it is the intent of the General Plan to provide policies and implementation actions for protecting important environmental and human resources in the City, the policies and implementation actions may be insufficient in certain areas, because the General Plan's land use designations and development policies will accommodate growth that may have significant adverse impacts. In consideration of the environmental effects which may result from implementation of the General plan, the City Council concluded that, for air quality, the carbon monoxide (CO) measurements forecasted for buildout of the General Plan would be over the 8-hour standard for CO. The proposed project would be an incremental contributor to the overall exceedance of these air quality standards.

The project site is within the Sacramento Valley Air Basin (SVAB). The general climate of the project area varies considerably, as it is located at the edge of the flat Sacramento Valley and the foothills of the Sierra

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

Nevada. The SVAB is designated as a nonattainment area for state and federal ozone standards. Urbanized areas of the SVAB are designated as a nonattainment area for state and federal CO standards. The entire SVAB is in attainment for nitrogen dioxide. The SVAB is designated as a nonattainment area for state particulate matter 10 microns or less in diameter (PM10) standards, and is unclassified for sulfur dioxide and lead.

The project EIR will analyze temporary generation of emissions from construction of the project, conformity with the State Implementation Plan, and possible exceedance of air quality standards. The project EIR will not discuss odors because the project would not create objectionable odors affecting a substantial number of people.

**BIOLOGICAL RESOURCES - Would the project:**

a) Adversely impact, either directly or through habitat modifications, any endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (Section 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

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

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

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

d) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

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

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

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

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

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

g) 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"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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**Discussion:**

The interchange project area was reviewed for biological resources as part of the Preliminary Environmental Analysis Report (PEAR) prepared for the Project Study Report. According to the PEAR, there are minimal sensitive biological resources in the project area. Jones & Stokes conducted an early-season botanical field survey on March 30, 2001, and a late-season botanical field survey on June 7, 2001 of the interchange project area south of Route 50. These surveys coincided with the blooming periods of the special-status plants identified to occur in the project area. No special-status plants were located during the March 30 or June 7, 2001, field surveys.

A Jones & Stokes wildlife biologist conducted a March 30, 2001, field survey of the interchange project area south of Route 50 to evaluate existing conditions and determine whether suitable habitat was present for special-status wildlife species. The project site is located at the edge of the nesting range for Swainson's hawk. Several other species have been documented previously in the study region, including burrowing owl and fairy shrimp. Suitable nesting and wintering habitat for burrowing owl was identified in the study area; however, the lack of suitable burrows for this species reduces the likelihood of occurrence. No suitable habitat for California red-legged frogs, vernal pool fairy shrimp, or vernal pool tadpole shrimp was identified in the study area.

Wetlands with potential to fall under U.S. Army Corps of Engineers jurisdiction were identified in the project area south of Route 50, based on an observed prevalence of hydrophytic vegetation and wetland indicators.

The project EIR will include a description of the habitat and resources present in the aquatic/riparian and grassland environments. The evaluation will consider the potential presence of important biological habitat and sensitive species, and will include a delineation of jurisdictional wetlands and waters of the United States.

**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 checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Cause a substantial adverse change in the significance of a unique archaeological resource (i.e., an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that the resource contains information needed to answer important scientific research questions, has a special and particular quality such as being the oldest or best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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**Discussion:**

According to the Folsom Sphere of Influence Amendment EIR (Section 4.8, Cultural Resources), the project area has the potential to include both important prehistoric and historic sites.

The cultural resources analysis will include a records search, contact with Native Americans and other concerned parties, and archival research and field studies. Known cultural resources south of Route 50 include potential architectural ruins and archaeological deposits, as well as a previously unrecorded rock wall segment. Cultural resource types known to occur on adjacent lands include historic domestic deposits and prehistoric bedrock mortars, lithic scatters, and midden deposits.

The cultural resources documentation will meet the requirements of CEQA, NEPA, Caltrans, and Section 106 of the National Historic Preservation Act.

**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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion:**

Historically, seismic activity in the Folsom area has been limited. There are no known faults or fault-related features on or near the project site. However, moderately strong ground-shaking from earthquakes originating on active faults within a 50-mile radius of the project site can be experienced. Construction of the proposed project in accordance with the requirements of Caltrans will reduce potential seismic impacts



Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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to a less-than-significant level.

There are no known landslides in the project area. Caltrans, Folsom, and El Dorado County all require that construction projects implement measures to minimize soil erosion during construction. The project would not be located on expansive soil.

The issues of concern related to geology and soils are constructability issues associated with cut and fill slopes, geologic hazards, and serpentine rock that may result in the release of asbestos during construction. Due to the hard rock in the project area, blasting may be required to construct the project. The project EIR will summarize the results of a technical memorandum for geologic and geotechnical considerations of the project, including these issues.

**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 which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project 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 type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized  | <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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areas or where residences are intermixed with wildlands?

**Discussion:**

The Folsom Sphere of Influence Amendment EIR included a broad overview of hazardous materials and public health concerns related to development of the sphere of influence area south of Route 50. Recent aerial photographs of the project area show no evidence of any structures in the immediate vicinity of the project site.

The proposed project would not create a significant hazard to the public or the environment, nor would it emit hazardous emissions or handle hazardous or acutely hazardous materials within one-quarter mile of an existing or proposed school.

The project site is not within two miles of a public airport or public use airport, or known private airstrip and would not increase safety hazards in the project area. The project would not impair implementation of or interfere with emergency evacuation plans.

It is considered possible that the project is located on a site that would create a significant hazard to the public or the environment when the project is constructed. The project EIR will include a discussion of hazardous waste sites in the project vicinity. As stated earlier, the project EIR also will discuss possible release of asbestos during construction.

**HYDROLOGY AND WATER QUALITY - Would the project:**

a) Violate any water quality standards or waste discharge requirements?

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a stream or river, or substantially increase the rate or amount of surface runoff, in a manner which would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

e) Create or contribute runoff water which would

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) 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"/>
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Potential impact of project construction on storm water runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Potential impact of project post-construction activity on storm water runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
l) Potential for discharge of storm water from material storage area, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
n) Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o) Potential for significant change in the flow velocity or volume of storm water runoff that can cause environmental harm?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
p) Potential for significant increase in erosion of the project site or surrounding areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

The project area is partially covered by impermeable surfaces associated with Route 50 and the existing

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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interchanges. Most of the rainfall in the area is quickly converted to runoff and rapidly drains from the area via swales and small streams. Rainfall tends to run off the steep slopes quickly.

The proposed project is not anticipated to violate any water quality standards. Potential project impacts associated with construction activities, maintenance activities and runoff substances on the quality of receiving waters will be evaluated in the project EIR. The project will be required to prepare a storm water pollution prevention plan (SWPPP) to minimize erosion during construction.

**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?

**Discussion:**

The proposed project is construction of a new interchange and related improvements on Route 50. The project would not physically divide an established community.

The proposed project is consistent with the City of Folsom General Plan, the East Area Facilities Plan, and the Russell Ranch/Empire Ranch Specific Plan.

Sacramento County Planning and Community Development Department has reviewed the proposed project and indicated that the area to the south of Highway 50 is outside the Sacramento County Urban Services Boundary. Sacramento County General Plan Policy LU-58 states, "The County shall maintain an Urban Services Boundary that defines the long-range plans (beyond twenty years) for urbanization and extension of public infrastructure and services, and defines important areas for protection as open space and agriculture."

Sacramento County does not have any current plans to urbanize land south of Highway 50, and any interchange needs to address the relationship of the interchange to the Sacramento County General Plan. In addition, the area south of Highway 50, within the unincorporated County, is within the limits of Sacramento County's South Sacramento Habitat Conservation Plan (HCP) study area.

**MINERAL RESOURCES - Would the project:**

- a) Result in the loss of availability of a known mineral resource classified as Mineral Resource Zone 2 by the State Geologist that would be of value to the region and 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?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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**Discussion:**

The project site is not identified on the City's General Plan land use map as having a resource (e.g., quarry material) that would be of future value to the region and the residents of the state. Mineral resources will not be discussed in the project EIR.

**NOISE - Would the project:**

- |   |                          |                                     |                                     |                                     |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b) Exposure of persons to or generation of excessive noise levels in the project vicinity above levels existing without the project?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Discussion:**

The proposed project is located in an area dominated by Route 50 traffic noise. Based on information presented in the Folsom Sphere of Influence Amendment EIR (Section 4.6, Noise), areas within 1,100 feet of the freeway are exposed to noise levels of 65 dB Ldn or higher. Based on projected traffic volumes under cumulative conditions and using the methodology set forth in Table D-3 of the Noise Element of the Sacramento County General Plan, areas within 2,000 feet of the roadway would be exposed to traffic noise levels of 65 dB Ldn or higher.

Construction of the proposed project and related improvements would result in increased noise levels during construction due to ground clearing, excavation, and possible blasting required to remove rock outcroppings. Although construction noise is temporary, it is estimated that construction of the project would require approximately 18 months.

The project EIR will analyze exposure of residents to noise from construction activities and construction blasting as well as exposure of residents to traffic noise from traffic on Route 50. Noise abatement measures designed to reduce short and long-term impacts to acceptable noise levels will be identified where possible. If applicable, both an evaluation of the noise abatement measures and a discussion of their feasibility and reasonableness will be provided. The project EIR will not discuss noise issues related to residential uses exposed to noise from aircraft traffic because the project will not result in any residential construction.



Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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**POPULATION AND HOUSING -** Would the project:

- |   |                          |                          |                                     |                                     |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Discussion:**

The proposed project is construction of a new interchange and related improvements on Route 50. The need for a new interchange was identified to support development in the Folsom East Area. Construction of the interchange would not induce growth north of Route 50; however, it is considered possible that constructing a new interchange would induce growth south of Route 50.

Any of the proposed alternatives include terminating Empire Ranch Road in a dead-end on the south side of the freeway, without any break in access control. Should a connection to the south be deemed desirable in the future, there would need to be a separate project development process, leading to an environmental document, revised freeway agreement, and break in access control, to be determined at that time.

The proposed project would not displace existing residences or necessitate the construction of replacement housing.

**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?                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Police protection?                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Schools?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Maintenance of public facilities including roads. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Other government services or facilities?          | <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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**Discussion:**

The proposed project is construction of a new interchange and related improvements on Route 50. The proposed project would not result in substantial adverse physical impacts associated with increased demand for public services. It is expected that with the interchange in place, law enforcement and fire protection services will be enhanced and improved. The project EIR will not include a discussion of public services.

**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 which might have an adverse physical effect on the environment?

**Discussion:**

The proposed project is construction of a new interchange and related improvements on Route 50. The project would not increase the demand for recreational facilities, nor would it require the construction or expansion of recreational facilities.

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

- a) Cause an increase in traffic which his 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 patters, 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?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**Discussion:**

The proposed project is construction of a new interchange and related improvements on Route 50. Route 50 is the primary transportation corridor in El Dorado County and connects travelers in Sacramento County to Placerville and Lake Tahoe.

The proposed project has the potential to result in increased traffic on Route 50 as a result of construction of the interchange. This increased traffic has the potential to exceed the level of service standards established by Folsom, El Dorado County, Sacramento County, and Caltrans.

The project EIR will include a detailed traffic analysis that discusses the existing roadway network and analyzes critical roadways and intersections including freeway segments, ramp junctions, and intersections. The project EIR will also analyze the proposed project's consistency with adopted plans and policies of each of the relevant jurisdictions (Folsom, El Dorado County, and Sacramento County). The EIR will include interim and 20-year traffic projections and will analyze cumulative conditions.

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

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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"/>
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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 type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Have sufficient 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"/>
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e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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"/>
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g) Comply with federal, state, and local statutes and regulations related to solid waste?

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

The proposed project is construction of a new interchange and related improvements on Route 50. The project would not construct any new housing or result in the need for new water or wastewater treatment facilities.

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

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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## **Discussion of CEQA Checklist Responses**

See Chapter 2 “Affected Environment, Environmental Consequences, and Mitigation, Minimization and Avoidance Measures.”

## **Mitigation Measures for Significant Impacts Under CEQA**

Chapter 2 identifies mitigation measures for all significant impacts. Although not required, mitigation measures are sometimes recommended to further reduce less than significant impacts. Table A.1 lists impacts, levels of significance prior to mitigation, recommended mitigation measures, and level of significance after mitigation.



**Table A-1: Summary of Impacts and Mitigation Measures**

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<b>2.1 Land Use</b>			
Potential Impact 2.1.1: The project site is governed by multiple planning documents. The proposed project is consistent with applicable planning documents.	LTS	No mitigation required.	LTS
Potential Impact 2.1.2: The proposed project is compatible with surrounding land uses.	LTS	No mitigation required.	LTS
Potential Impact 2.1.3: The proposed project will require right of way acquisition requiring fair (just) compensation to land owners and uses on these parcels.	LTS	No mitigation required.	LTS
Potential Impact 2.1.4: Construction of the Empire Ranch Road interchange is not expected to induce growth south of Route 50.	LTS	No mitigation required.	LTS
Potential Impact 2.1.5: Construction of the Empire Ranch Road will not impact seasonal grazing activities.	LTS	No mitigation required.	LTS
<b>2.2 Transportation and Traffic</b>			
Potential Impact 2.3.1: Construction of the project would result in a change in traffic patterns by diverting ramp volumes from both the East Bidwell Street interchange (25 percent) and the El Dorado Hills Boulevard/Latrobe Road interchange (2 percent) to the Empire Ranch Road interchange in 2006. In total, traffic is forecast to increase at all three interchanges by approximately 10 percent in 2006 and approximately 12 percent in the Design Year.	PS	No mitigation required.	SU
Potential Impact 2.3.2: Construction of the project would result in increased traffic on Route 50 and continued unacceptable conditions on Route 50 in the peak directions in Construction Year and Design Year conditions; however, an improvement over the No Build condition would occur since there would be a more balanced distribution of trips across three interchanges versus two interchanges under the No Build conditions.	PS	No mitigation required.	SU
Potential Impact 2.3.3: Construction of the project would result in unacceptable traffic operations at the Route 50 westbound ramps at Empire Ranch Road during a.m. peak hour (Construction Year Build Alternative) and during the	PS	No mitigation required.	SU

LTS = Less than Significant or No Impact PS = Potentially Significant SU = Significant and Unavoidable

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>a.m. peak hour and the p.m. peak hour (Design Year Build Alternative) due to mainline capacity limits.</p> <p>Potential Impact 2.3.4: Construction of the project would result in acceptable traffic operations at most of the study intersections (Construction Year and Design Year Build Alternatives); however, unacceptable operations at the Iron Point Road/Empire Ranch Road intersection.</p>	PS	<p>Modify the design of the Iron Point Road/Empire Ranch Road intersection to provide acceptable level of service through construction of the following improvements.</p> <p>a. Provide a third through lane on Iron Point Road that extends a minimum of 305 m (1,000 feet) in each direction (east and west) of Empire Ranch Road.</p> <p>b. Provide a “free” right-turn movement for the northbound and westbound approaches to the Iron Point Road/Empire Ranch Road intersection.</p>	LTS
<p>Potential Impact 2.3.5: Construction of the project would cause a temporary disruption of traffic patterns and emergency services during construction.</p>	PS	<p>Implement traffic control measures to reduce disruption of traffic patterns during construction activities. Caltrans will require the following measures to reduce construction-related traffic impacts.</p> <p>a. The segment of Route 50 between Bass Lake Road and East Bidwell Street will be considered an integrated system when developing final construction phasing plans.</p> <p>b. The contractor will be required to prepare and implement a TMP that identifies the locations of possible detours and signage to facilitate traffic patterns and through-traffic requirements.</p> <p>c. ITS field elements will monitor traffic and provide real-time information to transportation officials. This information will enable them to effectively manage traffic, clear incidents, and inform drivers of potential delays.</p> <p>d. Real-time traffic information and video images of ramps and arterials in the project area can be posted on websites such as the Highway 50 Corridor site. This will enable drivers to assess traffic conditions and determine the best course of action before leaving their home or offices.</p> <p>e. Traffic delay information can be posted on permanent or temporary changeable message signs located in advanced of key alternate routes (e.g., Iron Point Road) or Route 50 ramps. This is designed to provide adequate advanced notice in the event that traffic diversion is necessary.</p> <p>f. Traffic information can also be broadcast on local Highway Advisory Radio to provide in-vehicle information throughout the subject area. By 2006, information may also be broadcast using images to vehicles equipped with navigation systems.</p> <p>g. ITS improvement in the future may also take advantage of E911 capability to be available on cellular telephone network. This GPS-based service is expected to improve incident detection and response time.</p>	LTS
<p><b>2.3 Cultural Resources</b></p> <p>No cultural resources were identified in the APE. Therefore, no impacts to cultural resources will result from</p>	No Impact	<p>It is Caltrans’ policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans’ policy that</p>	No Impact

LTS = Less than Significant or No Impact PS = Potentially Significant SU = Significant and Unavoidable

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>the proposed project.</p>		<p>work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.</p>	
<p><b>2.4 Hydrology and Water Quality</b>            Potential Impact 2.4.1: The proposed project will increase the amount of stormwater runoff and pollutants discharged into nearby waterways.</p>	PS	<p>The proposed project shall comply with any relevant City, El Dorado County, and Caltrans requirements for stormwater discharge, including maintaining existing stormwater discharge volumes. Additionally, the contractor will prepare and submit a SWPPP and Notice of Intent (NOI) to the RWQCB for approval. Compliance with the requirements of the NPDES program is required and will minimize impacts to water quality within Carson Creek and other drainages.</p> <p>The following measures should be considered when preparing the SWPPP:</p> <ol style="list-style-type: none"> <li>Scheduling of construction activities near Carson Creek shall avoid the rainy season.</li> <li>Land disturbing activities and the installation of erosion and sedimentation control practices shall be coordinated to reduce on-site erosion and off-site remediation. These measures include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, sediment desilting basins, sediment traps, and check dams.</li> <li>Existing vegetation shall be protected where feasible to provide an effective form of erosion and sediment control, as well as watershed protection, dust and pollution control, and shade.</li> <li>Loose bulk materials applied to the soil surface as a temporary cover to protect bare soils from rainfall impact, increase infiltration, and reduce runoff and erosion.</li> <li>Stabilizing materials shall be applied to the soil surface to prevent the movement of dust at the project site due to traffic, wind, and grading activities.</li> <li>Roughening and terracing shall be implemented, as feasible, to reduce erosion potential, decrease runoff velocities, and trap sediment, aiding in the establishment of vegetative cover from seed and increasing infiltration into soil.</li> <li>Where possible, all areas shall be restored to pre-construction contours and revegetated with native species. Hydroseeding will be implemented as a temporary measure, if feasible.</li> <li>Provide berms along the tops of slopes to prevent water from running uncontrolled down the slopes.</li> <li>Collect water in berms at the tops of slopes and control the flow in an erosion-proof drainage system. Sediment that is collected within these berms will be allowed to "settle out" and will be removed from the site.</li> <li>Provide energy dissipaters and erosion control pads at the bottom of slope drains. Other flow conveyance control mechanisms include earth dikes, swales,</li> </ol>	LTS

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>or ditches. Streambank stabilization measures shall also be implemented.</p> <p>k. All demolished and unused material will be hauled off-site.</p> <p>l. All erosion control measures and water pollution control measures will be properly maintained until the site has been returned to a pre-construction state. The condition and effectiveness of the measures will be monitored until they are removed. At a minimum, all measures shall be inspected after every rain event and weekly throughout the rainy season.</p> <p>m. Construction roadways will be properly protected to prevent excess erosion and sedimentation.</p> <p>n. All vehicle and equipment maintenance procedures will be conducted off-site. In the event of an emergency, maintenance will occur away from the river channel.</p> <p>o. Any concrete curing activities will be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.</p> <p>p. All construction materials, vehicles, stockpiles, and staging areas will be situated away from waterways, as feasible. All stockpiles will be covered, as feasible.</p> <p>q. The SWPPP will include spill prevention and counter measures.</p> <p>r. The area of construction and disturbance will be limited to as small an area as feasible.</p> <p>s. The SWPPP will include measures to avoid creating contaminants, minimize the release of contaminants, and water quality control measures to minimize contaminants from entering surface water or percolating into the ground.</p> <p>t. The water quality control measures shall address both construction and operation periods.</p> <p>u. Fluvial erosion and water pollution related to construction is controlled by a pollution control program which shall be filed with the appropriate agency and kept current throughout site development.</p> <p>v. The SWPPP shall include BMPs as appropriate, given the specific circumstances of the site and project.</p> <p>w. The RWQCB may request to comment and approve the SWPPP.</p> <p>x. The contractor will consult with the Caltrans, City of Folsom, and El Dorado County to ensure compliance with SWPPPs.</p> <p>No mitigation required.</p>	
<p>Potential Impact 2.4.2: The proposed project is not expected to impact ground water recharge.</p> <p>Potential Impact 2.4.3: Construction of the proposed project would create soil erosion due to exposure of soils that would negatively impact water quality if discharged to nearby waterways.</p> <p><b>2.5 Noise</b></p>	<p>LTS</p> <p>PS</p>		<p>LTS</p> <p>LTS</p>

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
Potential Impact 2.5.1: The project may create long-term noise impacts from traffic noise.	LTS	No mitigation required.	LTS
Potential Impact 2.5.2: Construction of the proposed project will result in temporary noise increases at noise receptor locations.	PS	To minimize the construction noise impact for sensitive land adjacent to the project site, construction noise is regulated by Caltrans Standard Specifications, Section 5-1, "Sound Control Requirements," in the Standard Special Provisions. These provisions follow: "Sound control shall conform to the provisions in Section 7-1.01I, Sound Control Requirements, of the Standard Specifications and these special provisions. The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA at a distance of 15 m (50 ft). This requirement in no way relieves the contractor from responsibility for complying with local ordinances regulating noise level. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixer, or transient equipment that may or may not be owned by the contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore."	LTS
<b>2.6 Air Quality</b>			
Potential Impact 2.6.1: Implementation of the proposed project would improve traffic conditions and thereby improve long-term regional air quality impacts.	LTS	No mitigation required.	LTS
Potential Impact 2.6.2: The proposed project would not create carbon monoxide hot spots.	LTS	No mitigation required.	LTS
Potential Impact 2.6.3: Implementation of the proposed project would not create any PM10 hot spots.	LTS	No mitigation required.	LTS
Potential Impact 2.6.4: Implementation of the proposed project would not result in hazardous air pollutants.	LTS	No mitigation required.	LTS
Potential Impact 2.6.5: Implementation of the project would not result in the accidental release of acutely hazardous air emissions.	LTS	No mitigation required.	LTS
Potential Impact 2.6.6: The project conforms with relevant regional planning documents.	LTS	No mitigation required.	LTS
Potential Impact 2.6.7: The project will serve vehicles from Route 50, Empire Ranch Road and other local roadways potentially consuming significant additional energy	LTS	No mitigation required.	LTS

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>resources through fuel consumption.</p> <p>Potential Impact 2.6.8: Equipment used to construct the proposed project will temporarily increase exhaust emissions and energy consumption.</p>	PS	<p>1. The construction contractor shall adhere to the requirements of the SMAQMD rule on cutback and emulsified asphalt paving materials.</p> <p>2. In addition, the following measures are recommended for implementation to reduce air pollutants, especially NOX, generated by vehicle and equipment exhaust during the project construction phase:</p> <p>a. The construction contractor provide a plan for approval by the SMAQMD demonstrating that the heavy-duty (50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet average 20% NOx reduction and 45% particulate reduction compared with the most recent California Air Resources Board fleet average at the time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.</p> <p>The contractor shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected number hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the contractor shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.</p> <p>Caltrans recognizes the City of Folsom, as project sponsor and CEQA lead agency, has the right to make its own determinations regarding use of the SMAQMD protocol and the measures designed to reduce NOx and particulates. On the other hand, as a responsible agency, Caltrans must make an independent judgment regarding the adequacy of the lead agency's EIR to support issuance of an encroachment permit authorizing work on the State highway system.</p> <p>b. The contractor shall ensure emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration</p>	LTS

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>Potential Impact 2.6.9: Implementation of the proposed project would result in fugitive dust emissions in excess of SMAQMD standards during construction.</p>	PS	<p>of the project, except that a monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other SMAQMD or State rules or regulations 1.</p> <p>c. The construction contractor shall utilize electric or diesel powered equipment in lieu of gasoline powered engines, where feasible.</p> <p>d. The construction contractor shall ensure construction grading plans include a statement that work crews will shut off equipment when not in use.</p> <p>e. The construction contractor shall time the construction activities so as not to interfere with peak hour traffic, and to minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.</p> <p>f. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.</p> <p>3. Because the project is located in an ozone nonattainment area, the measures listed above will be implemented, where feasible, to reduce air pollutants generated during the project construction phase.</p> <p>a. The construction contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency. The construction contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications 1.</p> <p>b. The construction contractor shall utilize electric or diesel powered equipment in lieu of gasoline powered engines where feasible 1.</p> <p>c. The construction contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use.</p> <p>d. The construction contractor shall time the construction activities so as not to interfere with peak hour traffic and to minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.</p> <p>e. The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew.</p>	LTS
<p>Potential Impact 2.6.9: Implementation of the proposed project would result in fugitive dust emissions in excess of SMAQMD standards during construction.</p>	PS	<p>The project will be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SMAQMD Regulation 403 requires that fugitive dust be controlled with best available control measures and requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.</p> <p>5. Caltrans Standard Construction Specifications shall also be adhered to, to</p>	LTS

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>Potential Impact 2.6.10: Implementation of the proposed project would generate odors during construction; however, there are no nearby sensitive receptors that would be affected.</p> <p>Potential Impact 2.6.11: Implementation of the proposed project would result in fugitive dust emissions that may contain naturally occurring asbestos.</p>	<p>LTS</p>	<p>reduce emissions. Below is a list of Caltrans standard measures provided to reduce the emission of fugitive dust. Compliance with these standard measures will lessen the fugitive dust (PM10) impact during construction.</p> <p>a. All disturbed areas, including storage piles, not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover.</p> <p>b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/suppressants.</p> <p>c. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions utilizing applications of water, or by presoaking.</p> <p>d. When materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emission; or at least six inches of freeboard space from the top of the container shall be maintained.</p> <p>e. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited, except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly forbidden.</p> <p>f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.</p> <p>g. Traffic speeds on unpaved roads shall be limited to 15 mph.</p> <p>h. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.</p> <p>i. Wheel washers for all exiting trucks shall be installed, or all trucks and equipment washed off before leaving the site.</p> <p>j. Excavation and grading activity shall be suspended when winds exceed 20 miles per hour (mph).</p> <p>k. Area subject to excavation, grading, and other construction activity shall be limited at any one time.</p> <p>No mitigation required.</p>	<p>LTS</p>
<p>Potential Impact 2.6.11: Implementation of the proposed project would result in fugitive dust emissions that may contain naturally occurring asbestos.</p>	<p>PS</p>	<p>6. Construction or construction-related activities that disturb or potentially disturb naturally occurring asbestos are subject to specific construction requirements within El Dorado County. Primarily, the owner/operator shall</p>	<p>LTS</p>

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>Potential Impact 2.6.12: Implementation of the proposed project could cause a direct temporary increased health risk resulting from exposure to diesel exhaust from construction activities.</p>	LTS	<p>submit an Asbestos Dust Mitigation Plan to the Air Pollution Control Officer prior to the start of any construction activity. Construction activities shall not commence until the Air Pollution Control Officer has approved or conditionally approved the Asbestos Dust Mitigation Plan. The owner/operator shall retain a copy of the approved plan at the project site, which shall remain valid until the termination of all dust generating activities. The Asbestos Dust Mitigation Plan must include the Best Management Practices listed in Table 2.6-7.</p> <p>No mitigation required.</p>	LTS
<p><b>2.7 Hazards and Hazardous Materials</b></p> <p>Potential Impact 2.7.1: Soils within the project boundary may be contaminated with aerially deposited lead. The project area is not expected to contain asbestos-containing materials or lead-based paint.</p>	PS	<p>1. Special health and safety procedures should be implemented to protect construction workers near the potentially lead contaminated areas. A workplan for investigation of aerially deposited lead should be submitted prior to the start of construction activities. All work should be performed according to this workplan. The workplan should also provide for soil sampling and analysis for total lead.</p>	LTS
<p>Potential Impact 2.7.2: The project area may contain Naturally Occurring Asbestos.</p>	PS	<p>2. Project plans should include provisions for a Registered Geologist to observe construction activities in order to perform appropriate testing. If serpentine material is discovered, proper health and safety precautions should be implemented. This includes preparing a health and safety plan, observing appropriate permits, and wetting areas during excavation.</p>	LTS
<p><b>2.8 Geology</b></p> <p>Potential Impact 2.8.1: Construction of the project would require grading and earth-moving activities.</p> <p>Potential Impact 2.8.2 Construction of the project would occur in an area subject to seismic activity.</p> <p>Potential Impact 2.8.3 Construction of the project could require blasting or presplitting to assist in cutting the rock surface.</p>	LTS	<p>Compliance with standard Caltrans requirements would reduce geologic impacts to a less-than-significant level. No measures are required.</p> <p>Compliance with standard Caltrans requirements would reduce geologic impacts to a less-than-significant level. No measures are required.</p> <p>Compliance with standard Caltrans requirements would reduce geologic impacts to a less-than-significant level. No measures are required.</p>	LTS
<p><b>2.9 Biological Resources</b></p> <p>Potential Impact 2.9.1: Implementation of the proposed project would result in permanent impacts to vegetation within natural communities adjacent to and on the shoulders of Route 50 within the new interchange footprint and highway ramp approaches.</p>	PS	<p>1. Per the City's tree ordinance, three options, or a combination thereof, are available for the removal of oak trees within this diameter at breast height (dbh) range.</p> <p>a. Replacement of 15 gallon stock at a 8:1 ratio, totaling 40 replacement trees, or;</p> <p>b. Replacement of 61 centimeters (24 inches) box at a 4:1 ratio, totaling 20 replacement trees, or;</p>	LTS

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
Potential Impact 2.9.2: Implementation of the proposed project would result in the loss of habitat used by special status species.	PS	<p>c. Payment of an in-lieu fee of \$750 per tree, totaling \$3,750. It should be noted replacement ratios vary depending on tree dbh. Larger trees require a higher replacement ratio. All trees proposed for removal within the BSA are within the City's designated 15-25 centimeters (6-10 inches) size category and are consistent with replacement ratios listed above. To avoid the introduction of invasive species into the BSA during project construction, contract specifications shall include, at a minimum, the following measures.</p> <p>a. All earthmoving equipment to be used during project construction shall be thoroughly cleaned before arriving on the project site.</p> <p>b. All seeding equipment (i.e., hydroseed trucks) shall be thoroughly rinsed at least three times prior to beginning seeding work.</p> <p>c. To avoid spreading yellow-star thistle or other invasive species already existing on-site, to off-site areas, all equipment shall be thoroughly cleaned before leaving the site.</p> <p>Cooper's hawk</p> <p>If work must be conducted during the nesting season (March 1 to August 31), no more than ten working days prior to the start of construction, a qualified biologist shall survey the BSA for presence of nesting Cooper's hawks. If any nesting activity is observed, the County shall consult with CDFG to determine the best course of action, which would include establishment of setbacks around trees with active nests until fledglings have left the nests, as determined by a qualified biologist. Setbacks shall be marked by brightly colored fencing. If no nesting activity is observed, work shall proceed as planned.</p> <p>Swainson's hawk, White-tailed kite, Loggerhead shrike</p> <p>If tree removal or tree trimming is necessary, activities will be conducted between September 15 and February 15. If activities cannot be conducted during this time frame, a preconstruction survey shall be conducted by a qualified biologist no more than ten days prior to the start of construction. If Swainson's hawk, White-tailed kite, Loggerhead shrike, or other raptors are observed nesting, CDFG shall be contacted and a work window would be implemented for portions of the project (i.e., depending on the proximity to the nest).</p> <p>Nuttall's woodpecker</p> <p>If work must be conducted during the nesting season (March 1 to August 31), at least two weeks prior to the start of construction, a qualified biologist shall survey the BSA for presence of nesting Nuttall's woodpeckers. If any nesting activity is observed, the City shall consult with CDFG to determine the best course of action, which would include establishment of setbacks around trees with active nests and continue until fledglings have left the nests, as determined</p>	LTS

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Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
Potential Impact 2.9.3: Construction of the proposed project would result in the loss of jurisdictional waters.	PS	<p>by a qualified biologist. Setbacks shall be marked by brightly colored fencing. Migratory Bird Treaty Act</p> <p>The proposed project could potentially affect migratory birds nesting in the BSA. Disturbance of these birds during their breeding season (March 1 to September 15) is prohibited under the Migratory Bird Treaty Act.</p> <p>The following seasonal work restrictions will be implemented during construction to avoid disturbing nesting birds:</p> <ul style="list-style-type: none"> <li>a. Work will be conducted outside the nesting season (September 16 through February 31), or;</li> <li>b. If work must be conducted during the nesting season (March 1 to September 15), no more than ten working days prior to the start of construction, a qualified biologist shall survey the BSA for presence of nesting birds. If any nesting activity is observed, the City shall consult with CDFG to determine the best course of action, which would include establishment of setbacks around trees with active nests.</li> </ul>	LTS
Potential Impact 2.9.4: Construction of the proposed project may result in temporary impacts to special status species.	PS	<ul style="list-style-type: none"> <li>a. In order to offset impacts to wetlands, seasonal wetland credits will be purchased from a mitigation bank, at a 2:1 ratio, to mitigate the loss of vernal marsh removed by the project. Preliminary investigation indicates seasonal wetland credits are available at the Wildlands bank, located in Sheridan, California. The 2:1 ratio is generally acceptable to the ACOE for seasonal wetland mitigation.</li> <li>b. The waters of the U.S. within the BSA that will be affected by the project are regulated by the Army Corps of Engineers (ACOE) under Section 404 of the CWA. Under Section 404 of the CWA, the ACOE regulates the discharge of dredged or fill material into waters of the U.S. It is expected the discharges into waters of the U.S. (fill) from the project will be authorized under Nationwide Permit (NWP) 14 (Linear Transportation Crossings).</li> <li>c. Discharges into waters of the U.S. under Section 404 require a water quality certification from the RWQCB, pursuant to Section 401 of the CWA. The RWQCB may opt to waive the Water Quality Certification and instead issue waste discharge requirements pursuant to their authority under the Porter-Cologne Act.</li> <li>d. Waters of the U.S. and vernal marsh habitat are regulated by CDFG under Sections 1600-1616 of the Fish and Game Code. Impacts to CDFG waters will require a Streambed Alteration Agreement from CDFG.</li> </ul> <p>Same mitigation as for impact 2.9.2.</p>	LTS

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# Appendix A-1

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## Notice of Preparation Comment Letters

The following comment letters were received during public circulation of the Notice of Preparation and associated Initial Study. All comments are addressed within the text of the document.

- State Clearinghouse Letter, October 2, 2003.
- City of Folsom Parks and Recreation Department, October 7, 2003.
- Harriet B. Segel, October 1, 2003
- Sacramento Metropolitan Air Quality Management District, November 17, 2003.
- County of Sacramento, Public Works Agency, September 8, 2003.
- County of El Dorado Department of Transportation, September 22, 2003.





Gray Davis  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse



Tal Finney  
Interim Director

October 2, 2003

Gail Furness de Pardo  
City of Folsom  
50 Natoma Street  
Folsom, CA 95630-2696

Subject: Empire Ranch Road Interchange on U.S. Highway 50 and Related Improvements  
SCH#: 2003092002

Dear Gail Furness de Pardo:

The State Clearinghouse submitted the above named Joint Document to selected state agencies for review. The review period closed on October 1, 2003, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts  
Director, State Clearinghouse

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2003092002  
**Project Title** Empire Ranch Road Interchange on U.S. Highway 50 and Related Improvements  
**Lead Agency** Folsom, City of

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**Type** JD Joint Document  
**Description** Construct a new interchange on Route 50 at Empire Ranch Road. Extend the eastbound truck climbing lane and construct eastbound and westbound auxiliary lanes between Empire Ranch Road and El Dorado Hills Boulevard. Modify the El Dorado Hills Boulevard undercrossing and construct an additional eastbound lane to the Bass Lake truck climbing lane.

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**Lead Agency Contact**

**Name** Gail Furness de Pardo  
**Agency** City of Folsom  
**Phone** 916.355.7248 **Fax**  
**email**  
**Address** 50 Natoma Street  
**City** Folsom **State** CA **Zip** 95630-2696

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**Project Location**

**County** Sacramento  
**City** Folsom  
**Region**  
**Cross Streets** Empire Ranch Road/ State Route 50  
**Parcel No.**  
**Township** **Range** **Section** **Base**

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**Proximity to:**

**Highways** 50  
**Airports**  
**Railways** Southern Pacific  
**Waterways** Carson Creek  
**Schools**  
**Land Use** Freeway and Agriculture

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**Project Issues** Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Drainage/Absorption; Cumulative Effects; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Soil Erosion/Compaction/Grading; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Wildlife

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**Reviewing Agencies** Resources Agency; Department of Conservation; Department of Fish and Game, Region 2; Office of Historic Preservation; Department of Parks and Recreation; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission; California Highway Patrol; Caltrans, District 3; Caltrans, Division of Transportation Planning; Public Utilities Commission

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**Date Received** 09/02/2003 **Start of Review** 09/02/2003 **End of Review** 10/01/2003

# CITY OF FOLSOM

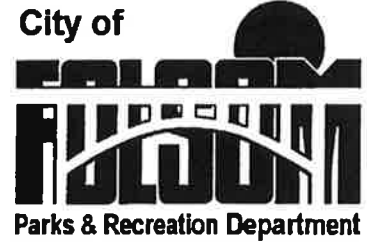
**Parks & Recreation Department**  
50 Natoma Street  
Folsom, California 95630  
(916) 355-7285  
Fax (916) 351-5931

RECEIVED

OCT 08 2003

MARK THOMAS & CO., INC.

October 7, 2003



Kim Erickson  
Mark Thomas & Company  
7300 Folsom Boulevard, Suite 203  
Sacramento, CA 95826

Re: Notice of Preparation  
Empire Ranch Road Interchange Environmental Impact Report

Dear Ms. Erickson:

I'm writing with regards to the Notice of Preparation and Initial Study for the Empire Ranch Interchange Environmental Impact Report.

Upon review of the document I had the following comments:

It's great that bikes and pedestrians are mentioned and that they will be considered in the design on the interchange.

Based on the alternative configurations listed, alternatives 2 and 4 seem to work the best for cyclists and pedestrians. However, the westbound on-ramp in alternative 2 is a significant hazard to cyclists because it will most likely have two right turn lanes and cars won't slow down as they make their right turn. If alternative 2 is used it would require a separated bike/pedestrian facility that would go under the westbound on-ramp and cross Hwy 50 on a separate bridge (see attachment).

Alternative 4 would work better for cyclists and pedestrians because it eliminates the high speed on-ramps and brings all traffic to a stop at both intersections. Would recommend that signals be installed at both ramps.

Would also recommend that sidewalks and bike lanes be provided on both sides of the bridge, for all alternatives.

These are just some items I wanted to bring to your attention early in the process. Thanks so much for the opportunity to comment on this project. I look forward to reviewing the draft EIR.

If you need additional information or have any questions or comments, please contact me at 916-351-3516.

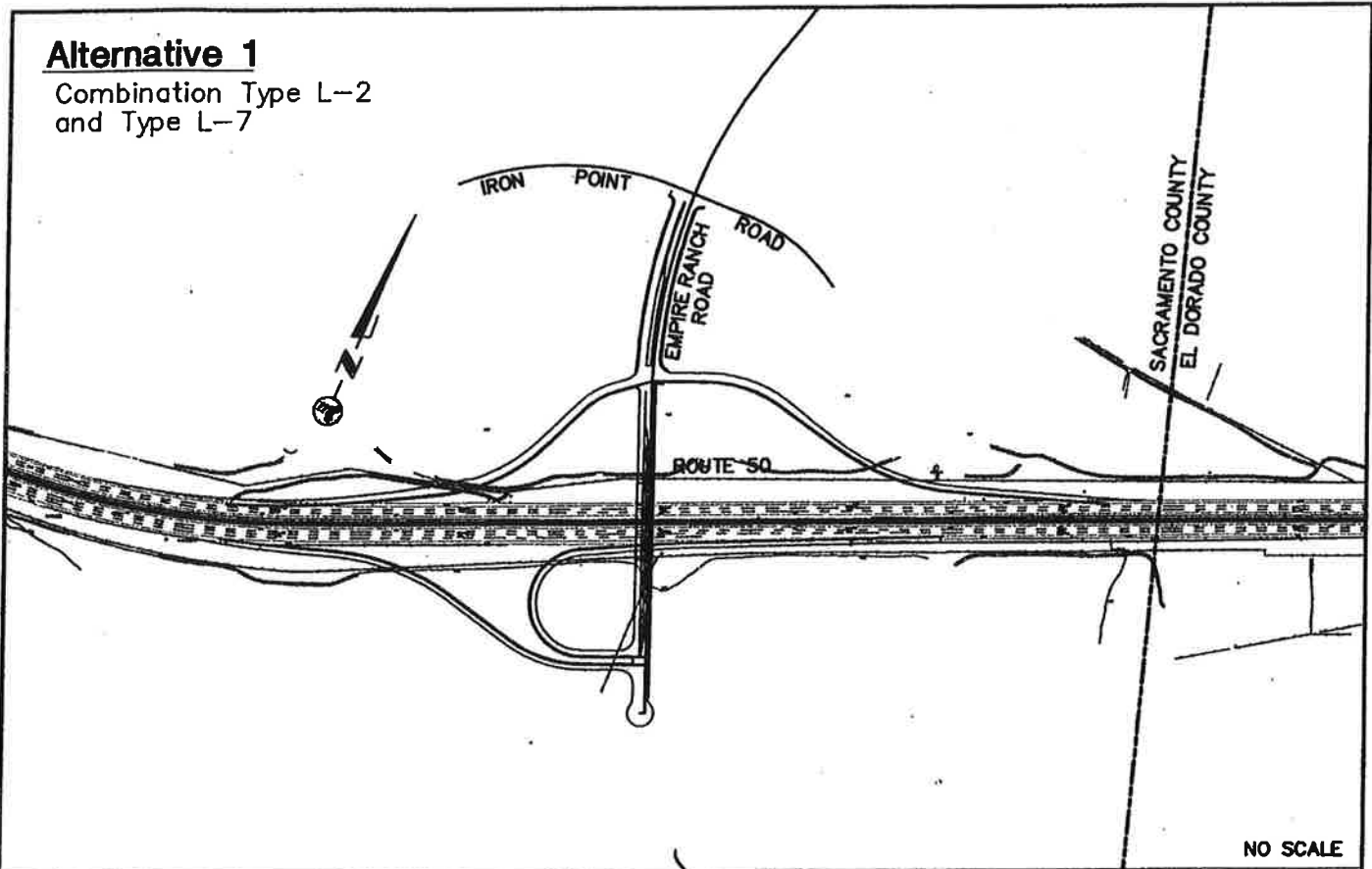
Sincerely,

A handwritten signature in black ink, appearing to read "Jim Konopka".

Jim Konopka  
Senior Planner, Trails

**Alternative 1**

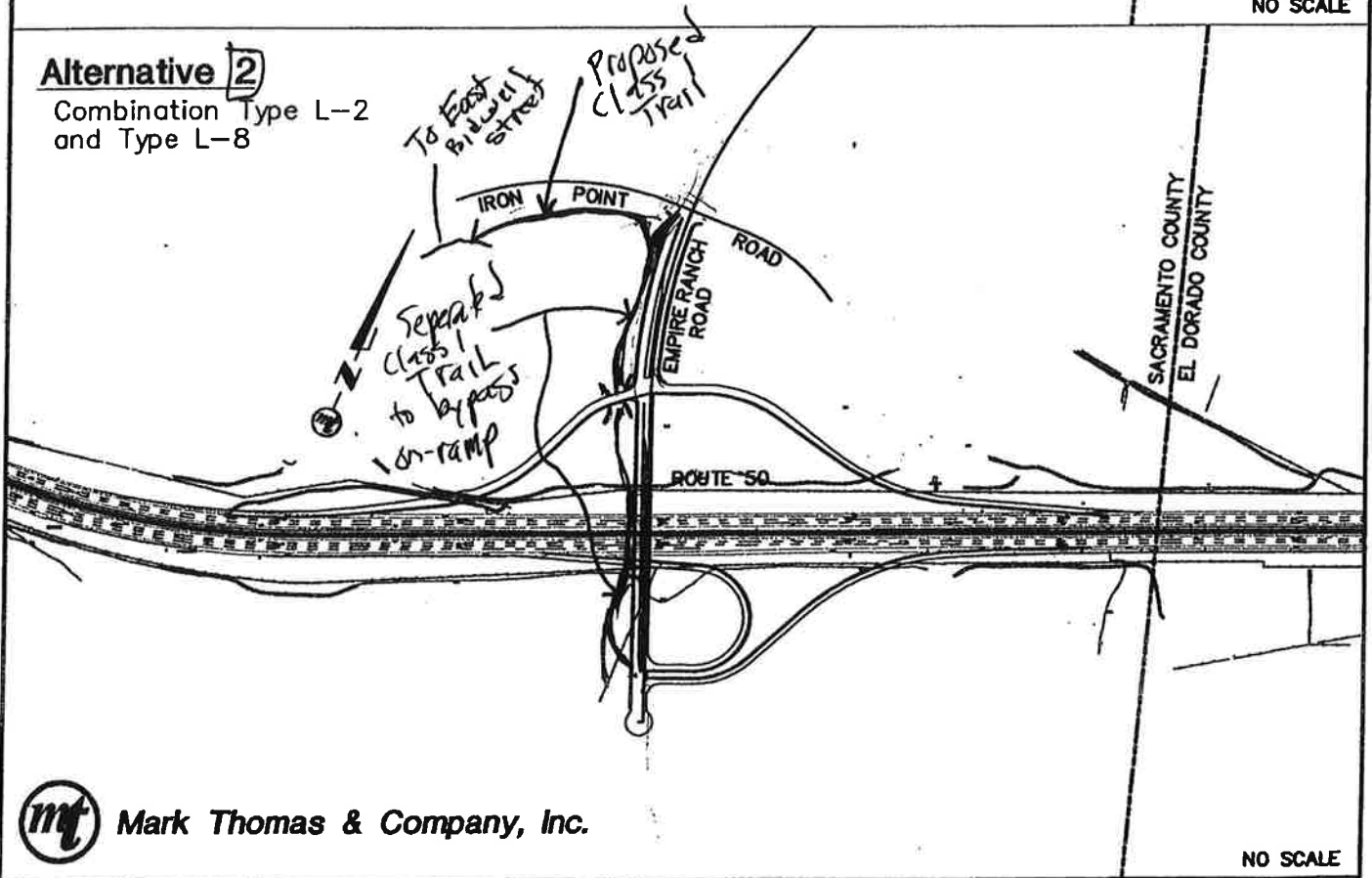
Combination Type L-2  
and Type L-7



NO SCALE

**Alternative 2**

Combination Type L-2  
and Type L-8



NO SCALE

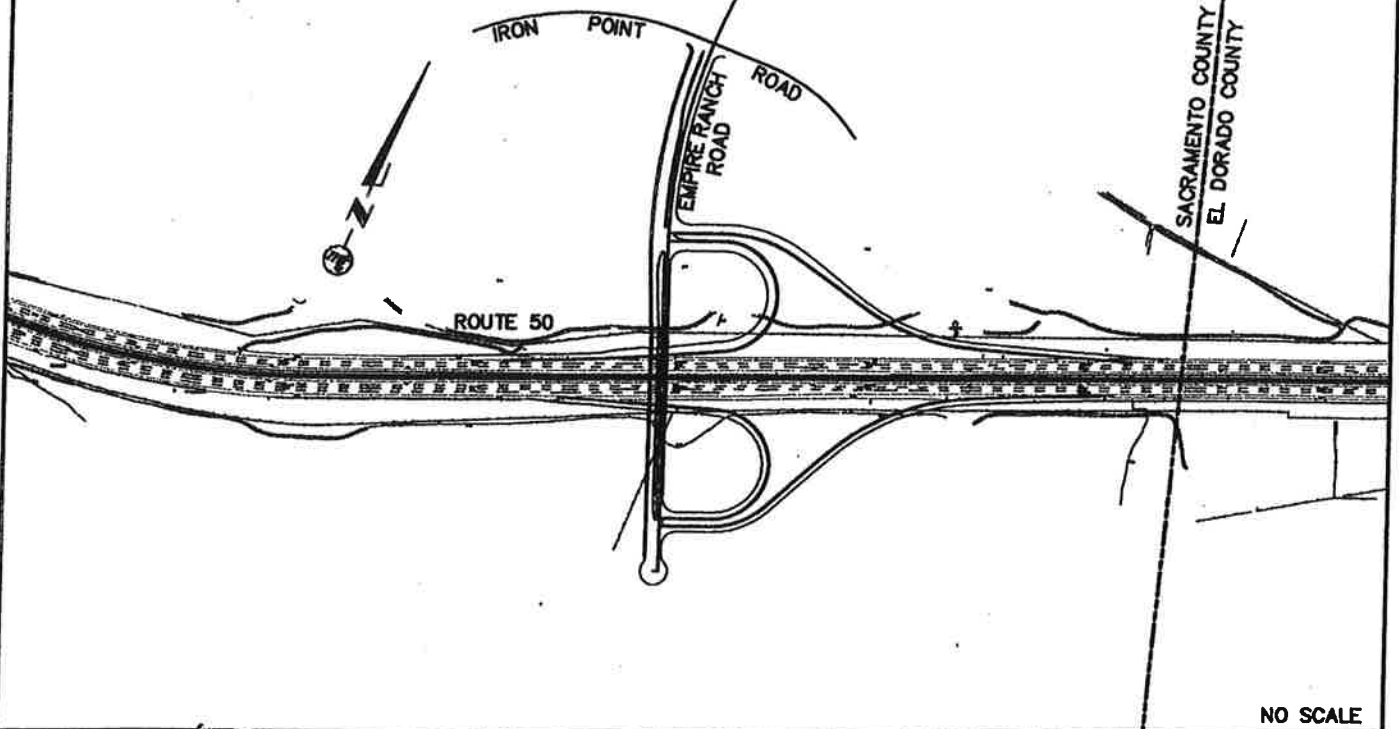


Mark Thomas & Company, Inc.

Figure 4a - Alternatives Being Considered for the Route 50/Empire Ranch Road Interchange

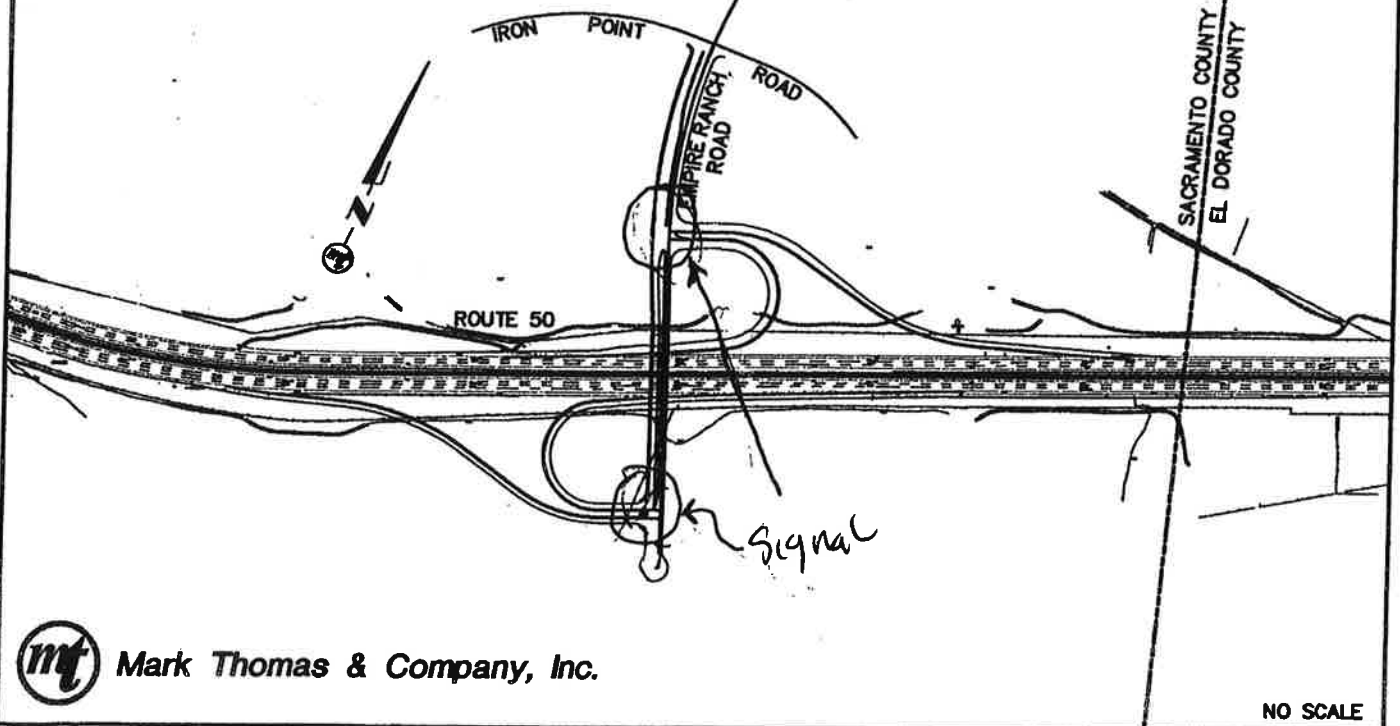
**Alternative 3**

Combination Type L-7  
and Type L-8



**Alternative 4**

Type L-7



 Mark Thomas & Company, Inc.

Figure 4b - Alternatives Being Considered for the  
Route 50/Empire Ranch Road Interchange

October 1, 2003

Mark Thomas & Company, Inc  
Attn: Kim Erickson  
7300 Folsom Blvd, Ste 203  
Folsom, CA 95826

Re: Initial Study – Empire Ranch Road Interchange on State Route 50

Dear Ms Erickson,

The following are my comments concerning this Initial Study:

P. 3. Addition of “The White Rock Road East Project Draft Mitigated Negative Declaration”, January 2003, lead person Mr Steve Hust, Planning Dept., El Dorado County, may expand your information base on area of the future road link from White Rock Road to Silva Valley Parkway just south of Oak Meadow Elementary School.

Even though the information is dated, the Silva Valley Parkway Interchange PSR & EIR, ca. June 1989 and subsequent final EIR, lead agency El Dorado County DOT, may be helpful in sources of information for the east end of this project area. Likewise the environmental documents for the Bass Lake Grade Truck lane may be useful.

Pp. 11-12 Interchanges construction: EDH – Phase 1 [2001], Phase 1 [2004-2005], Phase 2 [2010]; Silva Valley [no earlier than 2008].

Both interchanges will ultimately be needed, but the above timeline makes little sense considering the current EDH development pattern. EDH Interchange was prioritized in the top three needed improvement projects by the EDC Board of Supervisors for good reason - while Silva Valley wasn't in the conversation.

As stated in the Empire Ranch Interchange Initial Study [P 11], “This [Silva Valley] interchange is intended to accommodate traffic generated from approved development in El Dorado Hills.” Logic doesn't support putting Silva Valley before EDH Interchange despite the support of some for this concept.

The basic factor supporting Silva Valley being completed first is the Silva Valley Interchange Fund. Due to the insistence of the EDH Specific Plan developers, this fund was created so the interchange could be funded when needed. County has previously borrowed from this fund a number of times to continue work on the EDH Interchange. This could be done again but the El Dorado County Board of Supervisors did not do it despite the obvious need to redo it ASAP.

The primary factors against Silva Valley [2008] going before the Phase 2 [major reconstruct of the EDH Interchange [2010]] include:

1. Dated documentation. The PSR and EIR are about 13 years old. The Draft PSR [1989] is cited in the list of documents [P 233] referenced for the writing of the Draft EIR for the Silva Valley Parkway Interchange. The Draft EIR [SCH #88050215] is dated June 1989 with the Final EIR following thereafter.



2. The change in development projections for El Dorado Hills and the resulting community traffic pattern.

In 1990 the EDH population was approximately 10,000. EDH Interchange & Bass Lake Interchange worked well.

By 4/91 potential projects directly using EDH Interchange:

South of Hwy 50: Sunset Mobile Home Park had ca. 100 dus.

Carson Creek Specific Plan [SP] [not yet written] area was designated Industrial and zoned R&D and AE. Springfield Meadows [ca. 32 homes] along with the slowly growing EDH Business Park and the Mobile Home Park were the only areas creating traffic. The Town Center East & West [EDH SP] was undeveloped.

Valley View SP [not yet written] area was designated with high-density land uses and zoned with high-density land uses.

North of Hwy 50: Most of EDH's smaller residential development projects had tentative maps. Promontory SP [not yet written] area was designated as Rural Residential and zoned AE. The older villages were building out.

Green Valley Road: NW EDH SP [adopted plan -900 dus- with some units of all villages finalized] primarily used Green Valley Road along with Marina Unit 1-3, east side of Lake Hills Drive and Lake Hills Estates.

By 4/91 potential projects directly using Silva Valley Interchange:

EDH SP [Serrano] had an approved specific plan - 6,500 dus - and was designated/zoned with high-density land uses [primarily single family residential].

Potential indirect use: Some of the North Bass Lake individual projects were just getting started.

By 4/91 potential projects directly using Bass Lake Interchange:

Bass Lake Hills SP [not yet written] area was designated for high-density land uses and zoned Ag, AE [Exclusive Ag] and RE-10. [Divided into 10+ acre parcels].

Development was slowed down by the negative economic situation.

By Fall 2003 potential and constructed development had changed significantly.

The future EDH population in 1991 was estimated at approximately 85,000. The 2003 EDH/CSD estimated future population is 53,000. This represents a 33% drop in the expected population. The current population is now slightly under 30,000.

Silva Valley Interchange: Our community has been told for 2+ years that the 1991 design is out of date, unnecessarily large and excessively costly for the current estimated maximum population. I understand that CalTrans is not usually approving of such old project documentation especially when significant changes have happened. Traffic needs have yet to require its construction but a road will connect Silva Valley Parkway with White Rock

Road next year. Currently held up by lack of securing needed permits, this will allow the residents of Serrano, other villages adjacent Silva Valley Parkway and non-EDH commuters go to the EDH Business Park via White Rock Road. This will take some of the pressure off EDH Interchange. Measure Y is estimated to diminish total non-EDH commuter traffic from future approved development. Construction of Silva Valley Interchange will be needed eventually to accommodate the added traffic of Valley View SP [2,840 dus] and Town Center East.

The EDH SP final residential projection has slipped from 6,500 to 4,300 dus or 33% less dus, of which a little less than half of the lots are sold, and projections for 400 lots per year, each year, in future sales. Currently Serrano traffic primarily uses EDH Interchange. The completion of the road link between Silva Valley Parkway and White Rock Road will enhance the flow of traffic to the Business Park and Town Center.

Serrano Parkway may connect to Bass Lake Road in 2005 so currently only smaller projects such as Highland Village [ca.480], Fairchild [335 dus] and Stonegate [447 dus] are constructed and use Green Valley Road or EDH Interchange.

EDH Interchange: Phase 0, new signals south of the interchange, and the HOV lanes are constructed. The signals are resynchronized. The traffic still backs up to Wilson in morning peak hours. The partially constructed Town Center East is building out but is losing potential tenants due to the EDH Interchange's inadequacy. The current TC East businesses are losing clients who do not do not wish the hassle of the interchange to get to their business. Town Center West is not build out completely, but creates significant traffic. Much of it goes west. EDH Business Park was projected to double [from 5,000 to ca. 10,000 employees] by end of 2004, but the economic situation has precluded this. Growth has been slightly positive with 6,000 currently employed in the park. On the north side of Hwy 50, La Brogata [commercial center] is newly constructed adjacent to a built out Raley's shopping center and has a few customers presently

South of Hwy 50 Residential: Stonebriar [258 dus] and Shadow Hills [50 dus] are mostly built out. Creekside Greens [aka Cresleigh El Dorado] [ca 200 dus] is about 25% built out. White Rock Apts. [ca 650 dus] is under construction, about 80% complete, but not occupied. Sunset Mobile Park has been slightly expanded. Euer Ranch [476 dus], the north end of Carson Creek SP [1,700 dus], has been purchased and plans for a large community center for the senior community are at county planning. After its construction next year, homes will follow and I suspect they will sell fast. Lacking water, the south end of Carson Creek SP will have to be annexed into El Dorado Irrigation District before development can proceed. Valley View SP [2,840 dus] is on hold until Measure Y compliance is achieved.

North of Hwy 50 Residential: All but three or four smaller projects [ca. 310 dus] are constructed and mostly are built out. An apartment complex and an condo complex on EDH Blvd. are occupied or under construction and soon

will be partially occupied. A senior condo complex is constructed and mostly occupied.

NW EDH SP [900 dus] is built out and used primarily Green Valley Road until the Dam Rd in Folsom was closed. Now many go via EDH Interchange. When Sophia Parkway is connected to Empire Ranch Parkway and constructed to Iron Point Road sometime next year, much of the northern area traffic will most likely take this route to Hwy 50 - likewise much of the Promontory SP [1,100 dus] traffic – but part of both will add to the EDH Interchange problem. Since Rancho Dorado [ca.200 dus] project is in limbo until a new general plan is approved, a road connection of Saratoga to Iron Point as a frontage road is delayed for a few years.

The EDH Interchange has real problems now. To think traffic from west-central EDH will go east to Silva Valley Parkway to use the Silva Valley Interchange instead of EDH Interchange appears euphemistic. EDH Interchange's environmental documents are complete. The planning/design is mostly complete and initial phases of the reconstruction process are underway. It could be completed in approximately two years or 2005 - not 2010 - with a loan from the Silva Valley Interchange Fund. Creation of an EDH Interchange Fund that would reimburse the Silva Valley Fund would be a solution for both interchanges if the Board creates it. Inaction is very costly to El Dorado Hills and El Dorado County.

Obligations in the Promontory Development Agreement [Public Facilities Financing Plan, V. ROADWAY IMPROVEMENTS, 2. Off-site Road Improvements] for Promontory SP includes among others: 1 "Lane improvements at El Dorado Hills Blvd./Hwy. 50 eastbound ramps", and "Improvements to El Dorado Hills Blvd./Hwy. 50 interchange". At least part of the funding could possibly come from this source. Interestingly enough, there were no off-site improvements required of the "Euer Ranch" project or Carson Creek SP even though they will impact the EDH Interchange.

P 13. Discussion, Para 1. I'm presuming the focus of this effort is Folsom. Hwy 50 does split El Dorado Hills in two sections but does not compromise the unity of our community.

This project is welcome news. Thank you for the opportunity of commenting on the Initial Study.

Sincerely,

[signed by]

Harriett B. Segel  
Marina Village  
El Dorado Hills, CA

November 17, 2003

Kim Erickson  
Mark Thomas & Company  
7300 Folsom Boulevard, Suite 203  
Sacramento, CA 95826

**SUBJECT: NOP OF DEIR, EMPIRE RANCH ROAD INTERCHANGE EIR**

Dear Ms. Erickson,

The Air District received the information cited above a number of weeks ago. It was sent to a member of the staff who recently died. Therefore, I did not receive it in time to comment with the timeframe given for responses.

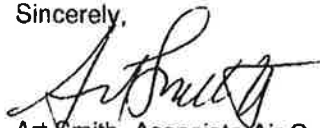
My primary comment on the project relates to mitigation measures which will be essential during the construction phase of the project. For projects of this magnitude, the District staff lists the following requirements.

1. If the project is approved and implemented, construction emissions may exceed the District's "Thresholds of Significance" for emissions of reactive organic gases (ROG), nitrogen oxides (NOx), and particulate matter (PM<sub>10</sub>). We recommend that the DEIR include an air quality analysis to determine if emissions will exceed the District's thresholds. If the thresholds are exceeded, we recommend that the DEIR include mitigation measures for the construction phase(s) of the project. Such measures could include the use of reduced-emission heavy-duty diesel-powered off-road construction equipment, and the use of cleaner burning alternative fuels. The District Thresholds are available at our web site, [www.airquality.org](http://www.airquality.org), under the CEQA heading.
2. The requirements of District Rule 403 – Fugitive Dust will apply to any grading or earth moving operations for this project. The DEIR should include the requirements of this Rule as a mitigation measure. The provisions of this Rule are also available at the web address referred to above.

Construction mitigation requirements are listed on the Air District's website at the address listed above. If you have questions, the primary point of contact at the Air District is Peter Christensen. He can be contacted at 874-4886 or by email at [pchristensen@airquality.org](mailto:pchristensen@airquality.org).

I will be the primary point of contact for air quality issues on this project. I can be reached at 874-4887 or [asmith@airquality.org](mailto:asmith@airquality.org).

Sincerely,



Art Smith, Associate Air Quality Planner Analyst

cc: Ron Maertz, SMAQMD

CHERYL CRESON, Administrator  
THOMAS J. ZLOTKOWSKI, Director, Department of Transportation



## COUNTY OF SACRAMENTO PUBLIC WORKS AGENCY

DEPARTMENT OF TRANSPORTATION

906 G Street, Suite 510

Sacramento, California 95814-1800

(916) 874-6291/5966 • Fax No. (916) 874-7831

MARK THOMAS & CO., INC.

RECEIVED

SEP 10 2003

September 8, 2003

Ms. Kim Erickson  
Mark Thomas & Company  
7300 Folsom Boulevard, Suite 203  
Sacramento, CA 95826

**SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL  
IMPACT REPORT FOR THE EMPIRE RANCH ROAD INTERCHANGE  
PROJECT**

Dear Ms. Erickson:

The Sacramento County Department of Transportation has reviewed the NOP of a Draft Environmental Impact Report for the Empire Ranch Road Interchange project. We have no specific comments at this time.

If you have any questions please call me at 874-6291.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew G. Darrow".

Matthew G. Darrow, P.E.  
Associate Civil Engineer

MGD:mgd

# COUNTY OF EL DORADO

# DEPARTMENT OF TRANSPORTATION



**MAINTENANCE DIVISION:**  
2441 Headington Road  
Placerville CA 95667  
Phone: (530) 642-4909  
Fax: (530) 642-9238

**MATTHEW C. BOYER**  
Director of Transportation  
  
Internet Web Site:  
<http://co.el-dorado.ca.us/dot>

**MAIN OFFICE:**  
2850 Fairlane Court  
Placerville CA 95667  
Phone: (530) 621-5900  
Fax: (530) 626-0387



RECEIVED

SEP 24 2003

MARK THOMAS & CO., INC.

September 22, 2003

Kim Erickson  
Mark Thomas & Company  
7300 Folsom Boulevard, Suite 203  
Sacramento, CA 95826

RE: Empire Ranch Road Interchange EIR NOP Comment

Dear Ms. Erickson:

The El Dorado County Department of Transportation appreciates the opportunity to comment on the Empire Ranch Road Interchange NOP.

We are concerned with the conclusion in the NOP that there are no anticipated potentially significant impacts with regard to Hydrology and Water Quality. Please include in your analysis a Storm Water data report to determine the level of post construction down stream water impacts, as well as conformance with the City of Folsom's Storm Water Management Plan. In addition, include conformance with El Dorado County's Storm Water Management Plan for potential downstream impacts anticipated within El Dorado County.

Sincerely,

A handwritten signature in cursive script that reads "Janet Postlewait".

Janet Postlewait  
Senior Planner

Cc: John Ainsworth  
Dave Speigelberg  
Liz Diamond



# Appendix B Title VI Policy Statement

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DEPARTMENT OF TRANSPORTATION  
OFFICE OF THE DIRECTOR  
1120 N STREET  
P. O. BOX 942873  
SACRAMENTO, CA 94273-0001  
PHONE (916) 654-5267  
FAX (916) 654-6608



July 26, 2000

## TITLE VI POLICY STATEMENT

The California State 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, sex and national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

  
JEFF MORALES  
Director