SR-91 Eastbound Lane Addition Project Between SR-241 and SR-71

ORANGE COUNTY, CALIFORNIA
DISTRICT 12-ORA-91, KP 25.6/32.0 (PM 15.9/19.9)
0G0400

RIVERSIDE COUNTY, CALIFORNIA
DISTRICT 8-RIV-91, KP 0.0/4.7 (PM 0.0/2.9)
0E8000
SCH No.2007081004

Initial Study with Mitigated Negative Declaration/ Environmental Assessment with Finding of No Significant Impact

Prepared by the
State of California Department of Transportation

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

Caltrans

December 2007

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SCH# _____
12-Ora-91 KP 25.6/32.0
(PM 15.9/19.9)
8-Riv-91 KP 0.0/4.7
(PM 0.0/2.9)
Caltrans District 12 EA # 0G0400
Caltrans District 8 EA # 0E8000

SR-91 Eastbound Lane Addition Between State Route 241 (KP 25.6 [PM 15.9]) and State Route 71 (KP 4.7 [PM 2.9]) in Orange and Riverside Counties

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION/ENVIRONMENTAL ASSESSMENT

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

THE STATE OF CALIFORNIA
Department of Transportation

7/27/07
Date of Approval

FOR Ernest A. Figueroa
Deputy District Director
Environmental Planning, District 8
California Department of Transportation

7/27/07
Date of Approval

FOR Cindy Quon
District Director
District 12
California Department of Transportation

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CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT

FOR

SR-91 Eastbound Lane Addition Project
Between SR-241 and SR-71
KP 25.6/32.0 (PM 15.9/19.9) and KP 0.0/4.7 (PM 0.0/2.9)

The California Department of Transportation (Caltrans) has determined that the Build Alternative (Alternative 2) will have no significant impact on the human environment. Alternative 2 proposes to add an additional general-purpose lane and widen all lanes and shoulders to standard widths on eastbound State Route 91 (SR-91) to the south between State Route 241 (SR-241) in eastern Orange County and State Route 71 (SR-71) in western Riverside County.

This Finding of No Significant Impact (FONSI) is based on the attached Environmental Assessment (EA) and the associated Technical Studies, which have been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA and associated Technical Studies.

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

12/28/07
Date of Approval

Gale McIntyre
for Cindy Quon
District Director
District 12
California Department of Transportation

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SCH No. 2007081004

Mitigated Negative Declaration

Pursuant to Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) Districts 8 and 12, in conjunction with the Orange County Transportation Authority (OCTA) and the Riverside County Transportation Commission (RCTC) will add an additional general-purpose lane and widen all lanes and shoulders to standard widths on eastbound State Route 91 (SR-91), to the south, between State Route 241 (SR-241) in eastern Orange County and State Route 71 (SR-71) in western Riverside County.

Determination

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

The proposed project would have no effect on:

- Agricultural Resources
- Mineral Resources
- Population and Housing
- Recreation

In addition, the proposed project would have no significant effect on:

- Air Quality
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Transportation/Traffic
- Utilities and Service Systems

The proposed project would not have a significant adverse effect on Aesthetics/Visual, Paleontological, and Biological Resources because the following mitigation measures would reduce potential effects to insignificance:

- V-1 through V-4. These measures include mitigation for visual impacts of retaining walls, sound walls, and grading.
- P-1 and P-2. These measures include actions or mitigation for potential impacts to paleontological resources during excavation activities.
- BIO-11, BIO-14 through BIO-18. These measures include compensatory mitigation for habitat, wetlands, and other waters and threatened and endangered species, Habitat Mitigation Monitoring Plan, vegetation restoration, permit acquisition, focused surveys prior to construction, Section 7 Consultation, nonnative plant eradication, and avoidance of nonnative plants during revegetation.

The complete language of these measures is provided in the Environmental Commitment Record in Appendix D.

Gale McIntyre

for Cindy Quon, District Director
California Department of Transportation, District 12

12/28/07
Date

Summary

S.1 Introduction

The California Department of Transportation (Caltrans) Districts 8 and 12, in conjunction with the Orange County Transportation Authority (OCTA) and the Riverside County Transportation Commission (RCTC), propose to add an additional general-purpose lane and widen all lanes and shoulders to standard widths on eastbound State Route 91 (SR-91), to the south, between State Route 241 (SR-241) in eastern Orange County and State Route 71 (SR-71) in western Riverside County. The total length of the project is 11.1 kilometers (km) (6.9 miles [mi]). Approximately 6.4 km (4.0 mi) of the project are located in Orange County under Caltrans District 12 jurisdiction and 4.7 km (2.9 mi) are located in Riverside County under Caltrans District 8 jurisdiction. Caltrans is the lead agency for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Federal Highway Administration (FHWA) delegated its responsibilities under NEPA to Caltrans on July 1, 2007. OCTA and RCTC are responsible agencies under CEQA, and OCTA is the project proponent.

The western limit of the project is at the end of the SR-241 northbound to SR-91 eastbound connector, where the merging lane currently ends and results in a chokepoint. A chokepoint is a “bottleneck” or location where lack of adequate traffic volume capacity and operational deficiencies result in traffic congestion. This lane would be continued through to the SR-91/SR-71 interchange where the project limits end. The project would relieve the chokepoint at the SR-91/SR-241 interchange where the lane currently ends and would facilitate the movement of traffic to the SR-91/SR-71 interchange while enhancing safety.

S.2 Purpose and Need

S.2.1 Purpose

The purpose of the project is to reduce traffic congestion, improve operational deficiencies, and comply with legislative requirements on eastbound SR-91 between SR-241 and SR-71, consistent with Caltrans design standards. The objectives of the project are to:

- Relieve the chokepoint at the merge of northbound SR-241 and eastbound SR-91
- Reduce eastbound lane weaving and improve ramp merge/diverge between the SR-91/SR-241 and the SR-91/SR-71 interchanges
- Minimize right-of-way acquisition
- Conform to state, regional, and local plans and policies

S.2.2 Need

Currently, eastbound SR-91 in the project area experiences heavy peak-hour congestion and traffic delays due to high traffic volumes, chokepoints, lane weaving, and merging/diverging. Lane weaving and merging/diverging occur when vehicles merging onto the freeway are accessing inside lanes while vehicles are exiting the freeway or are changing from toll/high-occupancy vehicle (HOV) lanes to general-purpose lanes. High traffic volumes, chokepoints, and lane weaving have affected both traffic operations and safety in the area.

S.2.2.1 Capacity and Transportation Demand

At the junction of northbound SR-241 and eastbound SR-91, the five lanes on SR-91 are reduced to four lanes after a distance of approximately 1.6 km (1 mi) near Coal Canyon Road. In effect, the right lane on this segment acts as a long merge lane. At the beginning of the p.m. peak traffic period, traffic accumulates at this chokepoint, causing eastbound SR-91 to become congested.

The daily number of vehicles traveling on eastbound SR-91 is forecast to increase over time, which will increase traffic congestion in the project area under the existing lane configuration. The quality of traffic flow can be defined in terms of level of service (LOS). There are six LOS, ranging from LOS A (free traffic flow with low volumes and high speeds resulting in low densities) to LOS F (traffic volumes exceed capacity and result in forced flow operations at low speeds, resulting in high densities). Without any improvements to the existing facility, 2010 and 2030 traffic volumes in the project area are forecasted to increase, resulting in a decrease in LOS.

Currently, traffic in the project area operates at LOS E during the a.m. peak hours and LOS F during the p.m. peak hours. Freeway segments on eastbound SR-91 in the project area are typically congested for the entire evening peak period between 3:00 and 7:00 p.m. on weekdays. In addition, they are also heavily congested for 2 to 4 hours during the midday period (time varies) on weekends, particularly on Saturdays.

Based on forecasted traffic conditions, traffic is anticipated to operate at LOS F along eastbound SR-91 within the project area by 2030. However, the a.m. and p.m. congested periods and related traffic delays should be substantially less than if the no build alternative is selected. Based on preliminary analysis, and assuming linear growth of traffic volumes between 2010 and 2030, the mainline segments within project limits would reach LOS F at year 2027 for the a.m. peak hour and 2024 for the p.m. peak hour. Until that time, even with the growth in traffic the mainline segments analyzed with the proposed project would operate at LOS E or better during both peak hours, which would be similar to existing conditions in the a.m. peak hour, but an improvement in LOS would be achieved during the P.M. peak hour. As previously mentioned, the p.m. peak hour is LOS F in the existing condition. The mainline segments would benefit from the proposed project for the next 15 to 20 years with the increased capacity.

S.2.2.2 Roadway Deficiencies

Lane Weaving and Ramp Merge/Diverge

The lane drop near Coal Canyon Road increases the vehicle density on the freeway, which increases lane weaving and interferes with merge/diverge operations. Traffic congestion reduces the ability of vehicles to enter and exit the express lanes and HOV lanes as well as enter and exit the freeway via interchange ramps.

Merging/diverging and weaving on the project segment of eastbound SR-91 (at the SR-241 northbound connector, the Green River Road interchange, the toll lanes/HOV lanes access and egress, and the SR-71 northbound connector) increase the risk of traffic accidents, especially rear-end and sideswipe accidents.

The annual cost savings can be calculated as the product of the amount of Vehicle Hours Traveled (VHT) saved between the No Build and Build project alternatives, annually and the unit cost savings per hour (currently $15 per hour). Based on the VHT calculated in the Final Traffic Analysis Report, June 2007, the annual savings cost for the freeway segment between Coal Canyon Road and Green River Drive is $1.5 million whereas the annual savings cost for the freeway segment between Green River Drive and SR-71 is $500,000.

Nonstandard Lane Widths

It is Caltrans policy to design facilities according to the Design Guidelines, which include standard lane widths and shoulder width. The existing lanes and shoulders on SR-91 include nonstandard widths as a result of previous projects on this segment of

SR-91. Because nonstandard lane and shoulder widths do not meet Caltrans current design standards, the existing nonstandard shoulders and general-purpose, toll, and HOV lanes on eastbound SR-91 within the project limits do not meet Caltrans current standards

In addition, the existing nonstandard lane widths increase safety hazards and contribute to traffic accidents, especially when combined with congestion, lane weaving, and vehicle hours traveled.

Traffic Accidents

The Caltrans Traffic Accident Surveillance and Analysis System (TASAS) provides detailed accident rates for all highways in the State. District 12 provided accident data for the SR-241 connector and eastbound SR-91 between SR-241 and the Orange/Riverside County boundary for the period of January 1, 2003, through December 31, 2005. District 8 provided accident data for eastbound SR-91 between the Orange County/Riverside County line and the SR-91/SR-71 interchange for the period of July 1, 2003, through June 30, 2006.

A review of the TASAS accident data revealed that rear-end accidents were the most common, followed by sideswipe accidents. Rear-end accidents are associated with a sudden attempt to stop when a roadway has exceeded traffic capacity and are typical in chokepoint areas. The sideswipe accidents can be attributed to lane weaving as well as narrow lane widths. The TASAS summary accident data are provided in the Final Traffic Analysis Report (Meyer, Mohaddes Associates, June 2007).

S.2.2.3 Legislation

As approved by the voters in the November 2006 general elections, Proposition 1B enacts the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 to authorize $19.925 billion of state general obligation bonds for specified purposes, including high-priority transportation corridor improvements, SR-99 corridor enhancements, trade infrastructure and port security projects, school bus retrofit and replacement purposes, state transportation improvement program augmentation, transit and passenger rail improvements, state-local partnership transportation projects, transit security projects, local bridge seismic retrofit projects, highway-railroad grade separation and crossing improvement projects, state highway safety and rehabilitation projects, and local street and road improvement, congestion relief, and traffic safety.

The proposed project is identified as being funded partially by Proposition 1B through the Corridor Mobility Improvement Account (CMIA) in the amount of $4.5 billion. Funds from this account shall be used for performance improvements on the state highway system, or major access routes to the state highway system on the local road system that relieve congestion by expanding capacity, enhancing operations, or otherwise improving travel times within these high-congestion travel corridors. Upon approval of Proposition 1B, Caltrans nominated the proposed project to be funded by CMIA funds. In February 2007, the California Transportation Commission (CTC) adopted the proposed project as a CMIA project and approved $71.44 million for the proposed project. Funds for the proposed project are allocated to Caltrans by the CTC, upon appropriation in the annual Budget Bill by the California State Legislature.

S.3 Alternatives

S.3.1 No Build Alternative (Alternative 1)

The No Build Alternative does not include improvements to the eastbound SR-91 lane configuration. The chokepoint resulting from the lane-drop at the junction of northbound SR-241 and eastbound SR-91 near Coal Canyon Road would not be alleviated. This alternative does not preclude the construction of future improvements or general maintenance to improve rideability or safety enhancements. Since the growth pattern reveals an increase in the number of users, the traffic volume would most likely increase. Lacking additional space/capacity, an increase in traffic volume would increase traffic congestion, leading to insufficient distance for lane interweaving. The No Build Alternative provides a baseline for comparing the impacts associated with the Build Alternative since environmental review must consider the effects of not implementing the proposed project.

S.3.2 Build Alternative (Alternative 2)

The Build Alternative (the proposed project) would add one general-purpose lane and widen all lanes and shoulders on eastbound SR-91 to the south between SR-241 and SR-71. Standard freeway widths consist of 3.658-meter (m) (12.0-foot [ft]) lanes, a 3.048 m (10.0 ft) inside shoulder, and a 3.658 m (12.0 ft) outside shoulder. The eastbound SR-91 to northbound SR-71 connector would also be widened to provide one standard width lane with standard shoulders. Standard connector widths consist of a 3.658 m (12.0 ft) lane, 1.524 m (5.0 ft) inside shoulder, and 3.048 m (10.0 ft) outside shoulder.

Infrastructure and project components are described below.

S.3.2.1 Permanent Project Components

Bridges

As part of the proposed project, the following five bridges would also be widened: Coal Canyon Undercrossing, County Line Culvert, West Prado Overhead (over the Burlington Northern Santa Fe [BNSF] railroad), Route 91/71 Separation, and West Connector Undercrossing.

Retaining Walls

A series of slope retaining walls with multiple footings would be constructed on the south side of SR-91. Most of the retaining walls are located adjacent to the freeway. However, one proposed retaining wall is west of the SR-91/SR-71 interchange near Fresno Canyon/Wardlow Wash, and another wall is adjacent to an existing private access road.

Sound Walls

The proposed project includes construction of four sound walls to reduce traffic noise associated with the proposed project. A sound wall with a maximum height of 4.28 m (14.0 ft) is proposed adjacent to the westbound lanes on the north side of SR-91 west of the Green River Drive interchange and would extend for a distance of approximately 0.8 km (0.5 mi) to west of Green River Drive. Three other sound walls with a maximum height of 2.44 m (8.0 ft) may be constructed on the top of the slopes south of SR-91 outside Caltrans right-of-way adjacent to the Green River Kindercare facility and behind single-family homes on Manor Way and Highland View Drive/Meridian Circle.

These proposed sound walls are considered reasonable on the basis of cost and effectiveness. Additional input from affected property owners would be obtained before the start of final design to confirm whether the walls would be constructed.

Major Drainage Facilities

A total of eight existing reinforced concrete pipe (RCP) or reinforced concrete box (RCB) culverts carry storm water beneath SR-91 within the project limits. Six of these culverts would be extended or modified to accommodate the proposed project. The volumes of the existing collection basins would be retained by regrading these areas at the inlets to the culverts. Existing hillside drainage would be intercepted in new concrete ditches that would run behind the proposed retaining walls and convey drainage to the existing culverts.

Wherever feasible, construction of permanent water quality treatment best management practices (BMPs) would be included during design. These could include biofiltration swales at the toe of the fills on the south side of SR-91 in combination with detention or infiltration basins at the current collection basin locations.

Utilities

An underground crude oil pipeline, deemed to be a high-risk facility, should be "potholed" during final design of the proposed project to determine whether any relocation of this pipeline would be required. It is anticipated that construction activities for relocation of this facility would occur within the anticipated disturbance limits for the proposed project. No other utilities would need to be relocated.

Intelligent Transportation System (ITS) Facilities

The existing Caltrans fiber optic backbone line used in conjunction with the closed-circuit television cameras that observe the traffic conditions on SR-91 would need to be relocated farther south from its existing location or would be replaced with new facilities within the project limits.

New inductive loop detectors, which collect traffic data, would be installed in all eastbound lanes to maximize the service life of the system. The loop detectors on the ramps and connectors would need to be modified. The modification to the ramp meters and vehicle detection systems would occur within the project limits and will be detailed during final design.

The OCTA-owned vaults and cabinets that monitor the SR-91 Express Lanes would need to be relocated within the project limits to accommodate the widening.

Access Road Relocation

The existing private access road traveling under and immediately south of SR-91 in Riverside County from near the Riverside/Orange County line to approximately 3 km (1.8 mi) west of Green River Village would need to be lengthened and shifted south to accommodate the proposed freeway widening.

Soil Balance

The addition of the eastbound lane would require the modification of existing slopes on the south side of SR-91 and the installation of retaining walls. The existing slopes may be cut back up to 9 m (29.5 ft), resulting in an approximate excavation of 29,500 cubic meters (cm) (1,041,645 cubic feet [cf]) of soil. The material excavated from these locations would be used in other areas within the project limits. An

estimated additional 66,000 cm (2,330,460 cf) would be imported and used to construct the project.

Landscaping and Irrigation Systems

Planting plans would be included in the final design for the proposed project. The planting plan would consist of new warranted highway planting and replacement planting for existing trees, shrubs, and ground cover and/or hydroseed that would be appropriate to the area and enhance the existing indigenous species and plant communities.

Irrigation work would consist of new irrigation systems as required for establishment of the replacement planting. New irrigation systems would be designed to use reclaimed water (if available). Irrigation crossovers would be provided for all ramps and overcrossing abutments.

Right-of-Way Acquisition

The proposed project would require acquisition of limited property outside the existing Caltrans right-of-way. Specifically, a 3 to 9 m (9.8 to 29.5 ft) wide strip of additional right-of-way (from Station 1 to Station 6) would be acquired for relocation of the private access road in Riverside County. A replacement ingress/egress easement may be required for shifting the access road. Permanent easements would be required between Stations 174+20 to 175+20 in Orange County and between Stations 4+35 to 6+10 and 6+45 to 7+45 in Riverside County in order to access the basins and retaining walls for maintenance. An aerial easement would be required over the BNSF railroad for widening of the West Prado Overhead over the BNSF railroad right-of-way between Stations 19+10 and 20+60 in Riverside County. Temporary and/or permanent easements may be obtained for sound walls 7, 8, and 9 proposed outside of the SR-91 right-of-way and adjacent to residences and Green River Kindercare.

Railroad

A Railroad Agreement would need to be negotiated between Caltrans and the BNSF for widening of the West Prado Overhead, including an aerial easement over the BNSF railroad right-of-way. Falsework posts would need to be located within BNSF right-of-way line. The structure type has been configured to minimize the effect on the railroad.

S.3.2.2 Temporary Project Components

Construction

Staged construction would be required for all ramp reconstruction and freeway widening. The number of through lanes would be maintained by restriping existing lanes. However, full closure of eastbound SR-91 and northbound SR-71 is not anticipated. The eastbound SR-91 off-ramp to Green River Drive and the SR-91 eastbound to SR-71 northbound connector would be closed periodically during construction. In addition, the Green River Drive on-ramp to eastbound SR-91 and a single eastbound general purpose lane may need to be closed during construction. All closures would be limited to weekends and night time only.

Construction Vehicle Access and Material Staging

Construction vehicle access and staging of construction materials would occur within disturbed or developed areas inside the existing Caltrans right-of-way or the proposed additional right-of-way. Vehicle access and materials staging during construction of the sound walls outside of Caltrans right-of-way would occur in approved designated areas. Equipment maintenance and staging would be in designated areas away from wildlife corridor entrances. All construction vehicle access, materials staging and storage, and other construction activities would occur within the defined disturbance limits for the proposed project.

Construction Lighting

The proposed project would require nighttime construction activities in some parts of the project area. If work is done at night, lighting would be directed away from wildlife corridors and land uses outside the freeway right-of-way.

The hours of construction would be limited to daylight hours at Coal Canyon, Fresno Canyon, and Wardlow Wash to avoid adverse lighting impacts to existing wildlife corridors in these areas.

There would be no permanent changes to lighting.

Temporary Construction Easements

Temporary construction easements (TCEs) would be necessary for shifting the private access road and regrading the collection basins.

TCEs would also be required for sound walls 7, 8, and 9 proposed outside of the SR-91 right-of-way and adjacent to residences and Green River Kindercare.

S.3.2.3 Value Analysis

A Value Analysis (VA) was performed by Value Management Strategies, Inc. for the proposed project. The Project Development Team accepted one VA alternative and conditionally accepted two others. The accepted VA alternative is to implement van pools during construction to reduce vehicles on the freeway during construction. This alternative increases project costs but improves project performance and value by 11 percent. The two conditionally accepted VA alternatives proposed to use pre-cast in lieu of cast-in-place construction techniques for selected structures and to postpone permanent sound wall construction to avoid throwaway. These alternatives would result in minimal cost impacts but would only improve project performance by 3 percent.

The proposed project incorporates the use of precast girders at Coal Canyon Road Undercrossing in lieu of cast-in-place, to speed construction and thereby reduce impacts to wildlife.

S.4 Summary of Impacts

Table S.1 provides a summary of the impacts that are summarized from the environmental analysis contained in Chapter 2. The environmental commitments and measures to minimize harm are listed in the Environmental Commitment Record (ECR) in Appendix D.

Table S.1 Summary of Potential Impacts from Alternatives

Environmental Issue		No Build Alternative	Build Alternative
Land Use		None	No Section 4(f) Resource use, Partial parcel acquisition/access road relocation
Growth		None	None
Farmlands and Timberlands		None	None
Community Impacts	**Community Character and Cohesion**	None	None
	Relocation	None	None
	Environmental Justice	None	None
Utilities and Emergency Services		None	Temporary construction impact
Traffic and Transportation/ Pedestrian and Bicycle Facilities		Increased traffic congestion, continued LOS deterioration, and increased vehicle density	Temporary construction impact
Visual and Aesthetics		None	Altered views
Cultural Resources		None	None
Hydrology and Floodplains		None	Temporary construction impact
Water Quality and Storm Water Runoff		None	Potential temporary and permanent increased pollutant loading. Permanent increased storm water runoff
Geology, Soils, Seismic, and Topography		Potential seismic/ earthquake impacts	Potential temporary and permanent seismic/earthquake impacts/liquefaction, seismic compaction, landslides, mudslides, and scour at the SR-91/SR-71 Separation Bridge
Paleontology		None	Potential construction impacts; Paleontological Mitigation Plan required
Hazardous Wastes and Materials		None	Temporary construction impact
Air Quality		Total pollutants emitted by motor vehicles would not be reduced	Temporary construction impact/potential increase in MSAT emissions
Noise		None	Temporary construction impacts/permanent noise levels approach or exceed FHWA noise abatement criteria; however, long-term abatement is reasonable and feasible
Natural Communities		None	Temporary impacts to habitat and wildlife corridors and permanent impacts to habitat
Wetlands and Waters of the United States		None	Permanent and temporary impacts to USACE wetlands and Waters of the U.S., California Department of Fish and Game riparian and streambed habitat, and Western Riverside County Multi-species Habitat Conservation Plan riparian/riverine habitat
Plant Species		None	None
Animal Species		None	Temporary construction impact and minor permanent impact to bat roosting habitat
Threatened and Endangered Species		None	Temporary construction impact to gnatcatcher,least Bell's vireo, and southwestern willow flycatcher habitat. Permanent impact to least Bell's vireo, southwestern willow fly catcher habitatflycatcher, and gnatcatcher habitat
Invasive Species		None	Temporary construction impact
Cumulative		None	Not substantial

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TECHNICAL STUDIES (bound separately)

Aerially Deposited Lead Survey, April 2007.

Asbestos Survey Report, October 2007.

Air Quality Assessment, June 2007.

Biological Assessment (BA), June 2007.

Final Traffic Analysis Report, June 2007.

First Supplemental Historic Property Survey Report, June 2007.

Historic Property Survey Report, March 2006.

Initial Site Assessment, April 2007.

Natural Environment Study, January 2007.

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Jurisdictional Delineation Report, October 2007

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Scenic Resource Evaluation/Visual Impact Assessment, April 2007.

Summary of Floodplain Encroachment, April 2007.

Traffic Noise Impact Technical Report, May 2007.

Water Quality Assessment Report, December 2007.

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) Districts 8 and 12, in conjunction with the Orange County Transportation Authority (OCTA) and the Riverside County Transportation Commission (RCTC), propose to add an additional general-purpose lane and widen all lanes and shoulders to standard widths on eastbound State Route 91 (SR-91), to the south, between State Route 241 (SR-241) in eastern Orange County and State Route 71 (SR-71) in western Riverside County. The total length of the project is 11.1 kilometers (km) (6.9 miles [mi]). Approximately 6.4 km (4.0 mi) of the project are located in Orange County under Caltrans District 12 jurisdiction and 4.7 km (2.9 mi) are located in Riverside County under Caltrans District 8 jurisdiction. Caltrans is the lead agency for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Federal Highway Administration (FHWA) delegated its responsibilities under NEPA to Caltrans on July 1, 2007. OCTA and RCTC are responsible agencies under CEQA, and OCTA is the project proponent.

The regional location and project vicinity are shown on Figures 1-1 and 1-2, respectively. The western segment of the project area is bordered by the City of Yorba Linda and unincorporated Orange County to the north and the City of Anaheim to the south. The eastern segment of the project area is bordered by unincorporated Riverside County to the north and south and the City of Corona to the south. Parts of Chino Hills State Park, Featherly Regional Park, the Santa Ana River Trail, Green River Golf Course, and Green River Village Mobile Home Park border the north side of SR-91 along the project segment. To the south, the project segment is predominantly bordered by Chino Hills State Park and undeveloped land, as well as residential and commercial developments in the Cities of Anaheim and Corona.

The proposed project is in the 2004 Regional Transportation Plan (RTP) prepared by the Southern California Associated Governments (SCAG) as a general-purpose lane addition. The RTP is a long-range plan that identifies multimodal regional transportation needs and investments over the next 25 years in Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.

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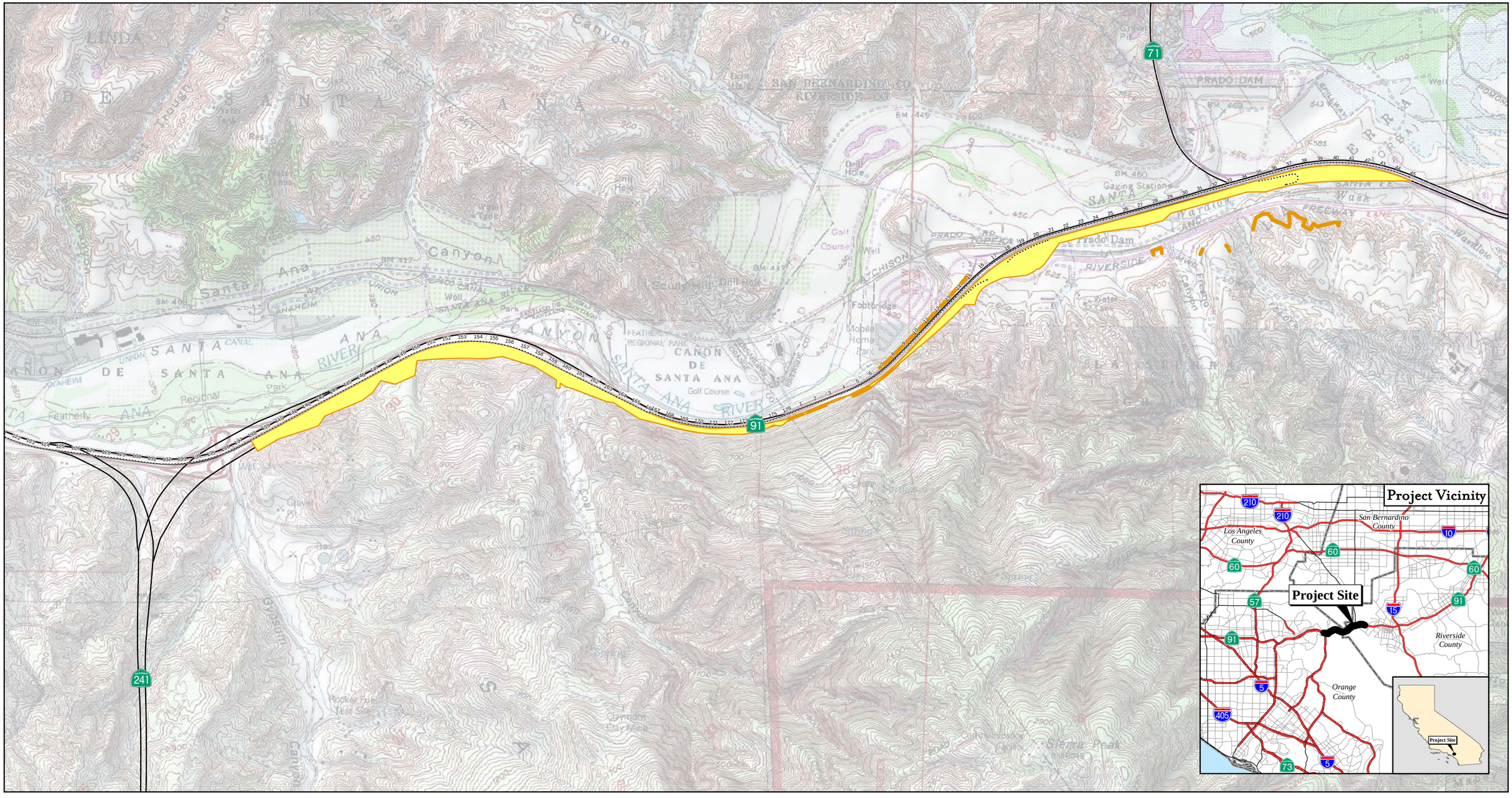

LEGEND

Project Location

0 1,000 2,000 FEET

0 305 610 METERS

SOURCE: USGS 7.5' Quad - BLACK STAR CANYON ('88), PRADO DAM ('81); CALIF.

FIGURE 1-1

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

Topographic Project Location Map

12-ORA-91 K.P. 25.6/32.0

08-RIV-91 K.P. 0.0/4.7

EA# 0G0400 (District 12)

EA# 0E8000 (District 8)

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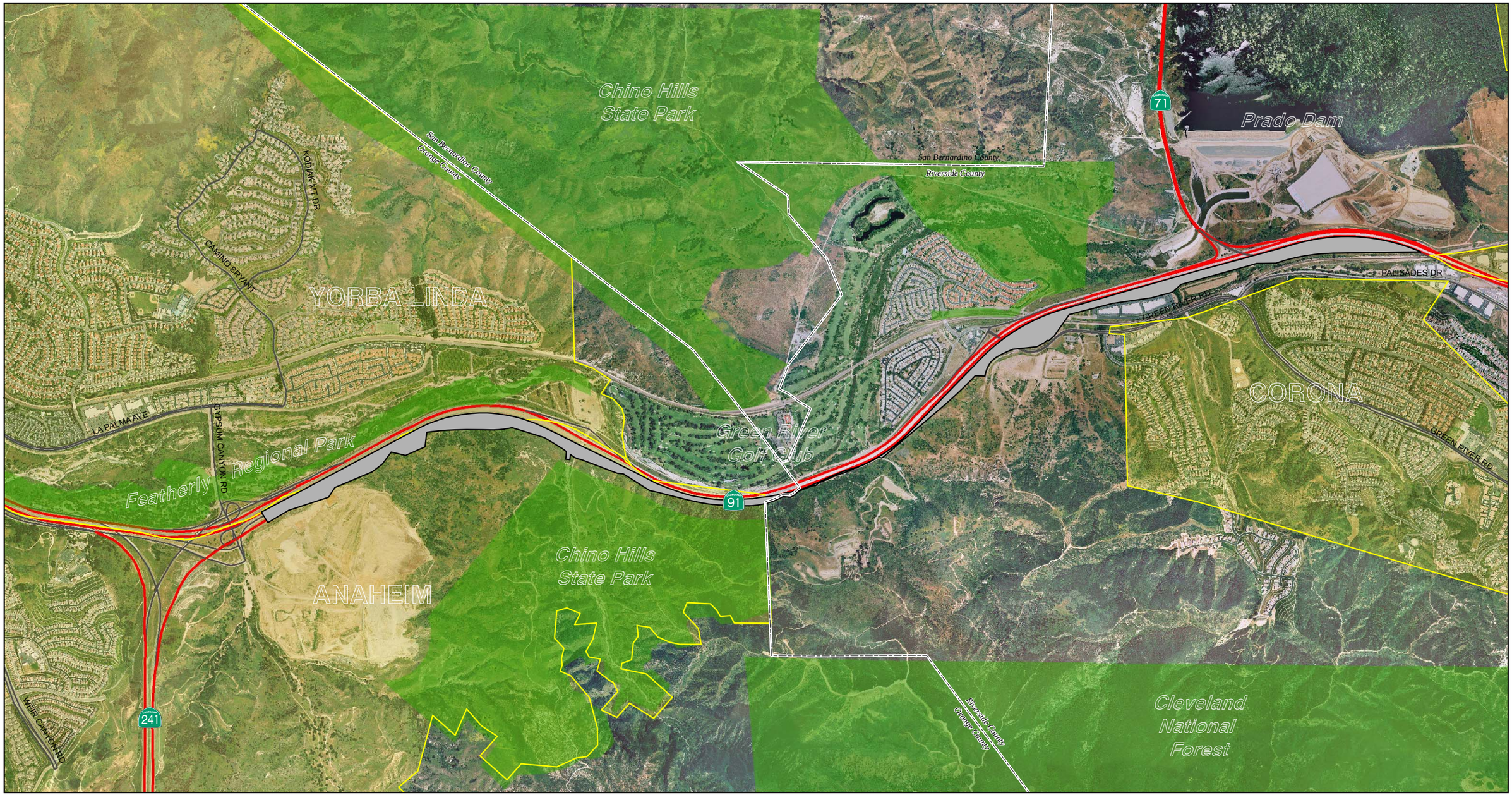

LEGEND

- Project Location
- City Boundary
- County Boundary
- Park Boundary
- Highways

N

0 1,000 2,000 FEET

0 305 610 METERS

SOURCE: SCAG General Plan Land Use, 2006.

FIGURE 1-2

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

Aerial Project Vicinity Map

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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The Regional Transportation Improvement Program (RTIP), which is updated every 2 years, is derived from the RTP and lists specific capital projects proposed within the next 6 years. Projects must be listed in the RTIP in order to acquire federal funding. The RTIP is used to program federal funds. Projects in the RTP and RTIP that have been approved by the FHWA are considered to have met the conformity requirement for regional emissions analysis. The proposed project has been programmed for funding in the RTIP. The proposed project is listed in the Adopted 2006 RTIP as follows: "*SR-91 eastbound lane addition between SR-241 and SR-71, and improve NB SR-71 connector from SR-91 to standard; one lane and shoulder width*." The description of the project in the 2006 RTIP is consistent with the proposed project. The page from the 2006 RTIP that cites the proposed project is provided in Appendix G. Funding has been secured from the Corridor Mobility Improvement Account (CMIA) under State Proposition 1B for $71.44 million for construction cost and construction support. Caltrans Traffic Congestion Relief Program (TCRP) funds for $5.0 million have been secured for design. Local toll revenue including $1.7 million for design and $1.0 million for right-of-way and right-of-way support cost have been secured.

The project was identified in the *Riverside County-Orange County Major Investment Study* (Jacobs Engineering, 2006) and included in the OCTA Choke Point Program, a cooperative effort between OCTA and Caltrans to eliminate more than 40 freeway chokepoints in Orange County. A Project Study Report (April 2004) initiated the Caltrans development process and identified resources and funding sources.

The western limit of the project is at the end of the SR-241 northbound to SR-91 eastbound connector where the merging lane currently ends and results in a chokepoint. A chokepoint is a "bottleneck" or location where lack of adequate traffic volume capacity and operational deficiencies result in traffic congestion. This lane would be continued through to the SR-91/SR-71 interchange where the project limits end. The project would relieve the chokepoint at the SR-91/SR-241 interchange where the lane currently ends and would facilitate the movement of traffic to the SR-91/SR-71 interchange while enhancing safety.

Even if no additional transportation improvements are made in the project area, the project would reduce congestion in this area without creating a new chokepoint outside the project limits. The project would not require future construction to fully utilize the project's design capabilities to meet the purpose and need. Furthermore, the proposed project would not result in environmental impacts beyond the project

limits because it would not directly or indirectly impact resources outside the project area. Therefore, the project has both independent utility and logical termini.

1.1.1 Existing Facilities

The existing lane configuration on eastbound SR-91 varies within the project limits. The basic lane configurations by segment are shown in Table 1.1.

Table 1.1 Lane Configuration along SR-91 within Project Limits

Eastbound SR-91 Segment	Lane Configuration
From northbound SR-241 connector to Coal Canyon Road	Five general-purpose lanes plus two toll lanes
From Coal Canyon to approximately the Orange/Riverside county line	Four general-purpose lanes plus two toll lanes
From approximately the county line to approximately the Green River Drive entrance ramp	Four general-purpose lanes plus two HOV lanes
From approximately the Green River Drive entrance ramp to just east of the northbound SR-71 connector	Five general-purpose lanes plus one HOV lane

HOV = high-occupancy vehicle (carpool)
General-purpose lane = a mainline freeway lane open to all traffic
Toll Lane = a lane that can be used when a toll is paid

At the merge of northbound SR-241 and eastbound SR-91, the five general-purpose lanes on SR-91 are reduced to four general-purpose lanes after a distance of approximately 1.6 km (1 mi) near Coal Canyon Road.

A toll facility exists in the median area. The toll facility, known as the Route 91 Express Lanes, is owned and operated by OCTA. The eastbound toll facility ends in Orange County near the Orange/Riverside County line and becomes two transition lanes. This facility is an independent facility and not related to the SR-91 general purpose lanes. The number one transition lane becomes a high-occupancy vehicle (HOV) lane, while the number two transition lane becomes the number one general-purpose lane. This happens via a 600-meter (m) (1,987-foot [ft]) transition in Riverside County and, as a result, the number five eastbound general-purpose lane is dropped through the SR-91/SR-71 interchange.

The general-purpose lanes within the project limits vary in width from 3.3 meters (10 ft) to 3.6 m (12 ft). Both the toll lanes and the HOV lanes are 3.3 m (10 ft), which is a nonstandard lane width.

1.2 Purpose and Need

1.2.1 Project Purpose

The purpose of the project is to reduce traffic congestion, improve operational deficiencies, and comply with legislative requirements on eastbound SR-91 between SR-241 and SR-71, consistent with Caltrans design standards. The objectives of the project are to:

- Relieve the chokepoint at the merge of northbound SR-241 and eastbound SR-91
- Reduce eastbound lane weaving and improve ramp merge/diverge between the SR-91/SR-241 and the SR-91/SR-71 interchanges
- Minimize right-of-way acquisition
- Conform to State, regional, and local plans and policies

1.2.2 Project Need

Currently, eastbound SR-91 in the project area experiences heavy peak-hour congestion and traffic delays due to high traffic volumes, chokepoints, lane weaving, and merging/diverging. Lane weaving and merging/diverging occur when vehicles merging onto the freeway are accessing inside lanes while vehicles are exiting the freeway or are changing from toll/HOV lanes to general-purpose lanes. High traffic volumes, chokepoints, and lane weaving have affected both traffic operations and safety in the area.

1.2.2.1 Capacity and Transportation Demand

At the junction of northbound SR-241 and eastbound SR-91, the five lanes on SR-91 are reduced to four lanes after a distance of approximately 1.6 km (1 mi) near Coal Canyon Road. In effect, the right lane on this segment acts as a long merge lane. At the beginning of the p.m. peak traffic period, traffic accumulates at this chokepoint, causing eastbound SR-91 to become congested.

The daily number of vehicles traveling on eastbound SR-91 is forecast to increase over time (Table 1.2), which will increase traffic congestion in the project area (Table 1.3). The quality of traffic flow can be defined in terms of level of service (LOS), from A to F. LOS range from LOS A (free traffic flow with low volumes and high speeds resulting in low densities) to LOS F (traffic volumes exceed capacity and result in forced flow operations at low speeds, resulting in high densities). Figure 1-3 illustrates these LOS. The 2005 and 2030 peak-hour traffic volumes and LOS at ramp junctions and for freeway segments for the eastbound segment of SR-91 in the project area are presented in Table 1.4. As shown in Table 1.4, without any improvements to

the existing facility, 2010 and 2030 traffic volumes in the project area are forecasted to increase, resulting in a decrease in LOS.

Table 1.2 Comparison of 2005 and 2030 Average Daily Traffic

Location	2005 ADT	2030 ADT
Gypsum Canyon On-Ramp	5,420	6,060
SR-241 Connector Ramp	31,850	75,030
SR-91 Main Line (w/o county line)	140,200	181,420
SR-91 Main Line (e/o county line)	127,000	173,450
Green River Off-Ramp	12,800	16,380
Green River On-Ramp	3,500	4,400
SR-91 Main Line (e/o Green River)	129,830	172,090
EB SR-91 Ramp to NB SR-71	14,480	31,510
SB SR-71 Ramp to EB SR-91	21,420	32,990

Source: *Final Traffic Analysis Report* (Meyer, Mohaddes Associates, June 2007).
ADT = Average Daily Traffic
EB = eastbound
WB = westbound

Table 1.3 Forcasted Future Traffic Density

Location on EB SR-91	2010 AM Peak Hour Density[1]	2010 PM Peak Hour Density	2030 AM Peak Hour Density[1]	2030 PM Peak Hour Density
NB SR-241 connector (merge)	14.1	14.6	17.4	18.0
NB SR-241 connector to Coal Canyon Road	18.7	21.1	>45	>45
Coal Canyon Road to Green River Road	25.9	27.2	>45	>45
Green River Road off-ramp (diverge)	24.7	30.9	31.2	38.7
Green River Road on-ramp (merge)	17.3	16.8	17.6	17.8
Green River Road to SR-71	26	25	>45	>45
Connector to NB SR-71 (diverge)	26.1	29.7	31.5	35.5

Source: *Final Traffic Analysis Report for Project Report (PR) and Environmental Document (ED)* (Meyer, Mohaddes Associates, June 2007).
Notes: NB = Northbound
[1]vehicles per kilometer per lane

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

FIGURE 1-3

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Freeway Level of Service Description

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Caltrans Standard Environmental Reference

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Table 1.4 Comparison of 2005, 2010, and 2030 Volumes and Levels of Service

Location	2005 Volumes[1]				2010 Volumes[2]				2030 Volumes[2]			
	AM Peak	PM Peak	AM LOS	PM LOS	AM Peak	PM Peak	AM LOS	PM LOS	AM Peak	PM Peak	AM LOS	PM LOS
NB SR-241 Connector Ramp	1970	2120	C	C	2360	2540	C	C	4640	5000	F	F
SR-91 Main Line from NB SR-241 Connector to Coal Canyon Road	8480	9100	D	D	9010	9650	D	D	11520	11780	F	F
SR-91 Main Line from Coal Canyon Road to Green River Road	7940	8080	E	E	8440	8590	E	E	10840	11040	F	F
Green River Off-Ramp	225	1890	E	F	235	1980	F	F	290	2360	F	F
Green River On-Ramp	245	215	B	F	255	225	F	F	300	270	F	F
SR-91 Main Line from Green River Road to SR-71	8240	7810	D	F	10570	10140	E	E	10900	10960	F	F
EB SR-91 Ramp to NB SR-71	1020	1450	E	F	710	2070	F	F	2070	3190	F	F

Source: *Final Traffic Analysis Report* (Meyer, Mohaddes Associates, June 2007).
[1] The 2005 volumes based on 2003 counts from Caltrans loop data/Web site, City of Anaheim, and Southland Car Counters
[2] 2010 and 2030 from OCTA Model
LOS = Level of Service
ADT = Average Daily Traffic
EB = eastbound
WB = westbound
NB = northbound
NA = Not available in traffic analysis

Currently, traffic in the project area operates at LOS E during the a.m. peak hours and LOS F during the p.m. peak hours. Freeway segments on eastbound SR-91 in the project area are typically congested for the entire evening peak period between 3:00 and 7:00 p.m. on weekdays. In addition, they are also heavily congested for 2 to 4 hours during the midday period (time varies) on weekends, particularly on Saturdays.

Based on forecasted traffic conditions, traffic is anticipated to operate at LOS F along eastbound SR-91 within the project area by 2030. However, the a.m. and p.m. congested periods and related traffic delays should be substantially less than if the no build alternative is selected. Based on preliminary analysis, and assuming linear growth of traffic volumes between 2010 and 2030, the mainline segments within project limits would reach LOS F at year 2027 for the a.m. peak hour and 2024 for the p.m. peak hour. Until that time, even with the growth in traffic the mainline segments analyzed with the proposed project would operate at LOS E or better during both peak hours, which would be similar to existing conditions in the a.m. peak hour, but an improvement in LOS would be achieved during the P.M. peak hour. As previously mentioned, the p.m. peak hour is LOS F in the existing condition. The mainline segments would benefit from the proposed project for the next 15 to 20 years with the increased capacity.

1.2.2.2 Roadway Deficiencies

Lane Weaving and Ramp Merge/Diverge

The lane drop near Coal Canyon Road increases the vehicle density on the freeway, which increases lane weaving and interferes with merge/diverge operations. Traffic congestion reduces the ability of vehicles to enter and exit the express lanes and HOV lanes as well as enter and exit the freeway via interchange ramps.

Merging/diverging and weaving on the project segment of eastbound SR-91 (at the SR-241 northbound connector, the Green River Road interchange, the toll lanes/HOV lanes access and egress, and the SR-71 northbound connector) increase the risk of traffic accidents, especially rear-end and sideswipe accidents.

The annual cost savings can be calculated as the product of the amount of Vehicle Hours Traveled (VHT) saved between the No Build and Build project alternatives, annually and the unit cost savings per hour (currently $15 per hour). Based on the VHT calculated in the Final Traffic Analysis Report, June 2007, the annual savings cost for the freeway segment between Coal Canyon Road and Green River Drive is

$1.5 million whereas the annual savings cost for the freeway segment between Green River Drive and SR-71 is $500,000.

Nonstandard Lane Widths

It is Caltrans policy to design facilities according to the Design Guidelines, which include standard lane widths and shoulder width. The existing lanes and shoulders on SR-91 include nonstandard widths as a result of previous projects on this segment of SR-91. Because nonstandard lane and shoulder widths do not meet Caltrans current design standards, the existing nonstandard shoulders and general-purpose, toll, and HOV lanes on eastbound SR-91 within the project limits do not meet Caltrans current standards

In addition, the existing nonstandard lane widths increase safety hazards and contribute to traffic accidents, especially when combined with congestion, lane weaving, and vehicle hours traveled.

Traffic Accidents

The Caltrans Traffic Accident Surveillance and Analysis System (TASAS) provides detailed accident rates for all highways in the State. District 12 provided accident data for the SR-241 connector and eastbound SR-91 between SR-241 and the Orange/Riverside County boundary for the period of January 1, 2003, through December 31, 2005. District 8 provided accident data for eastbound SR-91 between the Orange County/Riverside County line and the SR-91/SR-71 interchange for the period of July 1, 2003, through June 30, 2006.

A review of the TASAS accident data revealed that rear-end accidents were the most common, followed by sideswipe accidents. Rear-end accidents are associated with a sudden attempt to stop when a roadway has exceeded traffic capacity and are typical in chokepoint areas. The sideswipe accidents can be attributed to lane weaving as well as narrow lane widths. The TASAS summary accident data are provided in the Final Traffic Analysis Report (Meyer, Mohaddes Associates, June 2007).

1.2.2.3 Legislation

As approved by the voters in the November 2006 general elections, Proposition 1B enacts the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 to authorize $19.925 billion of state general obligation bonds for specified purposes, including high-priority transportation corridor improvements, SR-99 corridor enhancements, trade infrastructure and port security projects, school bus retrofit and replacement purposes, state transportation improvement program

augmentation, transit and passenger rail improvements, state-local partnership transportation projects, transit security projects, local bridge seismic retrofit projects, highway-railroad grade separation and crossing improvement projects, state highway safety and rehabilitation projects, and local street and road improvement, congestion relief, and traffic safety.

The proposed project is identified as being funded partially by Proposition 1B through the Corridor Mobility Improvement Account (CMIA) in the amount of $4.5 billion. Funds from this account shall be used for performance improvements on the state highway system, or major access routes to the state highway system on the local road system that relieve congestion by expanding capacity, enhancing operations, or otherwise improving travel times within these high-congestion travel corridors. Upon approval of Proposition 1B, Caltrans nominated the proposed project to be funded by CMIA funds. In February 2007, the California Transportation Commission (CTC) adopted the proposed project as a CMIA project and approved $71.44 million for the proposed project. Funds for the proposed project are allocated to Caltrans by the CTC, upon appropriation in the annual Budget Bill by the California State Legislature.

1.3 Project Description

The project is located on SR-91 between SR-241 in eastern Orange County and SR-71 in western Riverside County. The project covers a distance of 11.1 km (6.9 mi). Within the limits of the proposed project, at the merge of northbound SR-241 and eastbound SR-91, the five general-purpose lanes on SR-91 are reduced to four general-purpose lanes after a distance of approximately 1.6 km (1 mi) near Coal Canyon Road. In addition, the lanes and shoulders on eastbound SR-91 include nonstandard widths. The purpose of the project is to reduce traffic congestion, improve operational deficiencies, and comply with legislative requirements, on eastbound SR-91 between SR-241 and SR-71, consistent with Caltrans design standards.

1.3.1 Project Alternatives

Development of project alternatives was constrained by the purpose and need to relieve congestion and improve operations in the eastbound direction only and the location of the Santa Ana River on the north side of the freeway. Native habitats, waters of the U.S., and Section 4(f) resources are located on both the north and south sides of the freeway. Without improvements, traffic congestion and accident risk would increase due to inadequate capacity, lane weaving, merging/diverging, and

nonstandard lanes and shoulders. Due to the purpose and need and the locations of environmental resources, an avoidance alternative is not possible.

For each construction project on State highways for nonstandard alternatives to be considered, there has to be justification to show that implementation of design features to Caltrans standards would be cost-prohibitive, impractical, or would result in severe and unmitigable environmental impacts. Based on the Project Study Report (PSR), there is no justification to support nonstandard design features.

Because there are only two feasible alternatives for the project, Alternative 3 in the PSR has been renamed as Alternative 1 (No Build Alternative) and the former Alternative 2A is now renamed as Alternative 2 (Build Alternative).

1.3.2 No Build Alternative (Alternative 1)

The No Build Alternative does not include improvements to the eastbound SR-91 lane configuration. The chokepoint resulting from the lane-drop at the junction of northbound SR-241 and eastbound SR-91 near Coal Canyon Road would not be alleviated. This alternative does not preclude the construction of future improvements or general maintenance to improve rideability or safety enhancements. Since the growth pattern reveals an increase in the number of users, the traffic volume would most likely increase. Lacking additional space/capacity, an increase in traffic volume would increase traffic congestion, leading to insufficient distance for lane interweaving. The No Build Alternative provides a baseline for comparing the impacts associated with the Build Alternative since environmental review must consider the effects of not implementing the proposed project.

1.3.3 Build Alternative (Alternative 2)

The Build Alternative (the proposed project) would add one general-purpose lane and widen all lanes and shoulders on eastbound SR-91 to the south between SR-241 and SR-71. Standard freeway widths consist of 3.658 m (12.0 ft) lanes, a 3.048 m (10.0 ft) inside shoulder, and a 3.658 m (12.0 ft) outside shoulder. The eastbound SR-91 to northbound SR-71 connector would also be widened to provide one standard width lane with standard shoulders. Standard connector widths consist of a 3.658 m (12.0 ft) lane, 1.524 m (5.0 ft) inside shoulder, and 3.048 m (10.0 ft) outside shoulder.

Infrastructure and project components are shown in Figure 1-4 and are described below.

1.3.3.1 Permanent Project Components

Bridges

As part of the proposed project, the following five bridges would also be widened: Coal Canyon Undercrossing, County Line Culvert, West Prado Overhead (over the Burlington Northern Santa Fe [BNSF] railroad), Route 91/71 Separation, and West Connector Undercrossing.

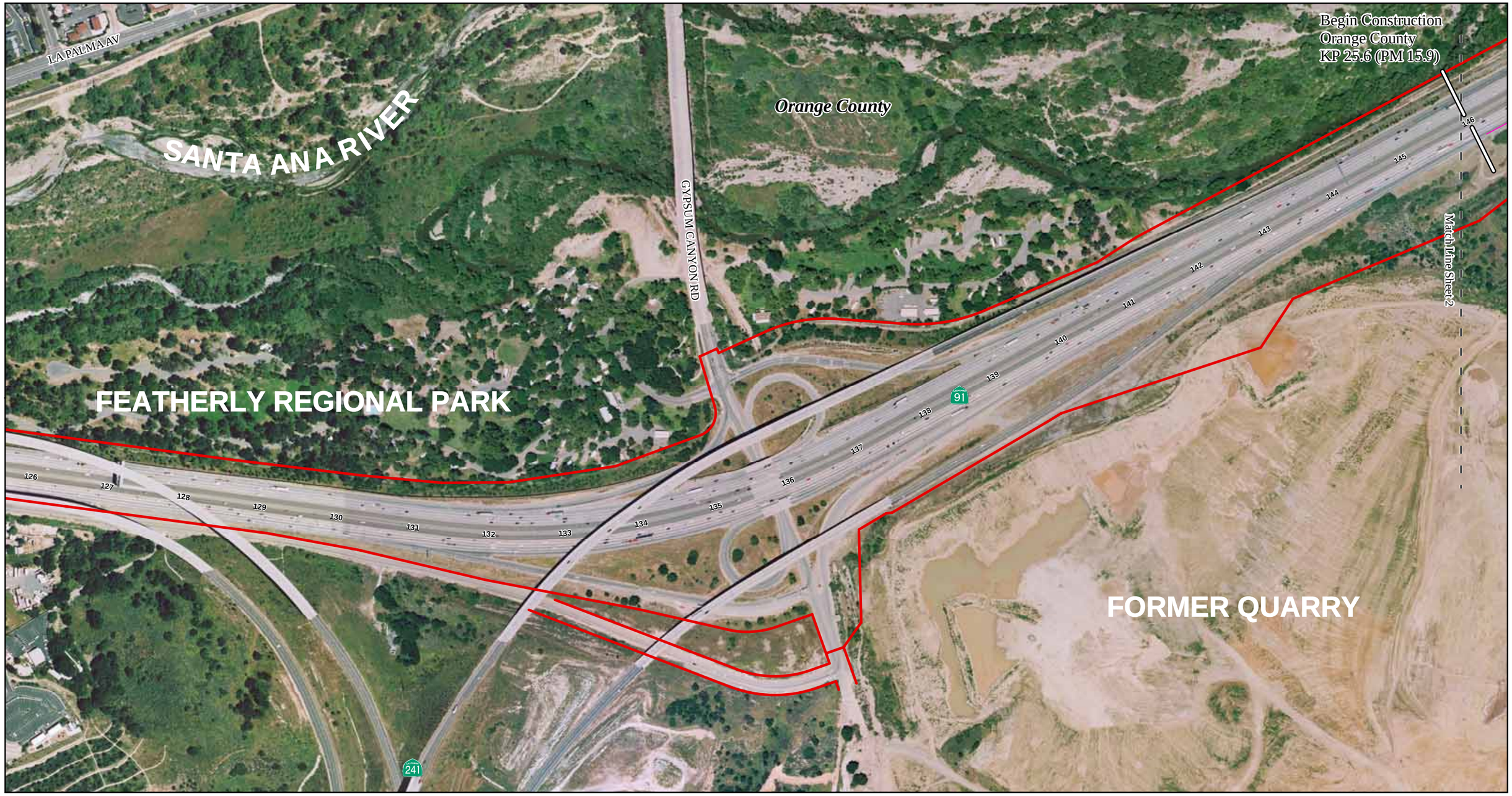
Retaining Walls

A series of slope retaining walls with multiple footings would be constructed on the south side of SR-91. Most of the retaining walls are located adjacent to the freeway. However, one proposed retaining wall is west of the SR-91/SR-71 interchange near Fresno Canyon/Wardlow Wash, and another wall is adjacent to an existing private access road.

Sound Walls

The proposed project includes construction of four sound walls to reduce traffic noise associated with the proposed project. A sound wall with a maximum height of 4.28 m (14.0 ft) is proposed adjacent to the westbound lanes on the north side of SR-91 west of the Green River Drive interchange and would extend for a distance of approximately 0.8 km (0.5 mi) to west of Green River Drive. Three other sound walls with a maximum height of 2.44 m (8.0 ft) may be constructed on the top of the slopes south of SR-91 outside of Caltrans right-of-way adjacent to the Green River Kindercare facility and behind single-family homes on Manor Way and Highland View Drive/Meridian Circle.

These proposed sound walls are considered reasonable on the basis of cost and effectiveness. Additional input from affected property owners would be obtained before the final design to confirm whether the walls would be constructed.



LEGEND

- Existing Right-of-Way
- Proposed ROW
- Proposed Improvements
- Permanent Easement
- Temporary Construction Easement
- Grading Limits
- Proposed Sound Wall
- Existing Sound Wall
- Proposed Retaining Wall

Affected Bridges

1. Coal Canyon Road Undercrossing (Widen)
2. County Line Creek Culvert (Lengthen)
3. West Prado Overhead (Widen)
4. West Connector Undercrossing (Widen)
5. Route 91/71 Seperation (Widen)

0 200 400 FEET
0 61 122 METERS

SOURCE: Eagle Aerial , 2006.

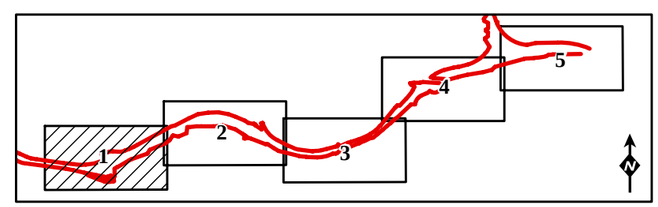


FIGURE 1-4
Sheet 1 of 5
SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Project Components

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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SANTA ANA RIVER

BNSF RR

GREEN RIVER GOLF CLUB

146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166

91

COAL CANYON RD

Orange County

Match Line Sheet 1

Match Line Sheet 3

CHINO HILLS STATE PARK

Bioswale

Regrade Collection Basin

N

0 200 400 FEET

0 61 122 METERS

LEGEND

- Existing Right-of-Way
- Proposed ROW
- Proposed Improvements
- Permanent Easement
- Temporary Construction Easement
- Grading Limits
- Proposed Sound Wall
- Existing Sound Wall
- Proposed Retaining Wall

Affected Bridges

1. Coal Canyon Road Undercrossing (Widen)
2. County Line Creek Culvert (Lengthen)
3. West Prado Overhead (Widen)
4. West Connector Undercrossing (Widen)
5. Route 91/71 Seperation (Widen)

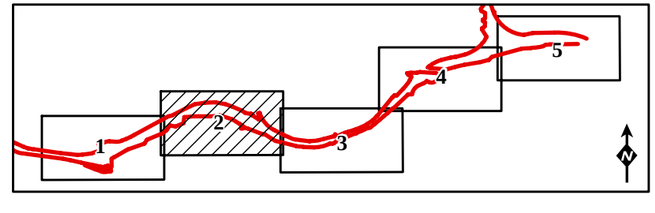

FIGURE 1-4
Sheet 2 of 5

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Project Components

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Eagle Aerial , 2006.

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San Bernardino County

GREEN RIVER GOLF CLUB

SANTA ANA RIVER

Match Line Sheet 2

Match Line Sheet 4

GREEN RIVER RD

SW 3

Regrade Collection Basin

Water Quality Basin

Bioswale

Relocate Access Road

Regrade Collection Basin

Water Quality Basin

Regrade Collection Basin

Regrade Collection Basin

Bioswale

Regrade Collection Basin

Bioswale

Water Quality Basin

Orange County

Riverside County

CHINO HILLS STATE PARK

LEGEND

- Existing Right-of-Way
- Proposed ROW
- Proposed Improvements
- Permanent Easement
- Temporary Construction Easement
- Grading Limits
- Proposed Sound Wall
- Existing Sound Wall
- Proposed Retaining Wall

Affected Bridges

1. Coal Canyon Road Undercrossing (Widen)
2. County Line Creek Culvert (Lengthen)
3. West Prado Overhead (Widen)
4. West Connector Undercrossing (Widen)
5. Route 91/71 Seperation (Widen)

0 200 400 FEET

0 61 122 METERS

SOURCE: Eagle Aerial , 2006.

FIGURE 1-4
Sheet 3 of 5
SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Project Components

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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LEGEND

- Existing Right-of-Way
- Proposed ROW
- Proposed Improvements
- Permanent Easement
- Temporary Construction Easement
- Grading Limits
- Proposed Sound Wall
- Existing Sound Wall
- Proposed Retaining Wall

Affected Bridges

1. Coal Canyon Road Undercrossing (Widen)
2. County Line Creek Culvert (Lengthen)
3. West Prado Overhead (Widen)
4. West Connector Undercrossing (Widen)
5. Route 91/71 Seperation (Widen)

N

0 200 400 FEET

0 61 122 METERS

SOURCE: Eagle Aerial , 2006.

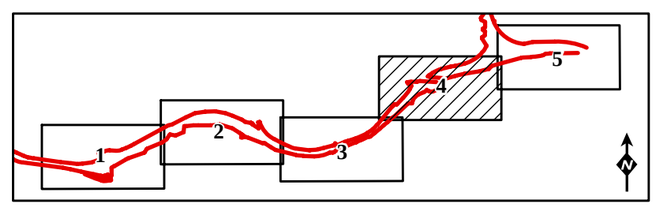

FIGURE 1-4
Sheet 4 of 5

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Project Components

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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LEGEND

- Existing Right-of-Way
- Proposed ROW
- Proposed Improvements
- Permanent Easement
- Temporary Construction Easement
- Grading Limits
- Proposed Sound Wall
- Existing Sound Wall
- Proposed Retaining Wall

Affected Bridges

1. Coal Canyon Road Undercrossing (Widen)
2. County Line Creek Culvert (Lengthen)
3. West Prado Overhead (Widen)
4. West Connector Undercrossing (Widen)
5. Route 91/71 Seperation (Widen)

N

0 200 400 FEET

0 61 122 METERS

SOURCE: Eagle Aerial , 2006.

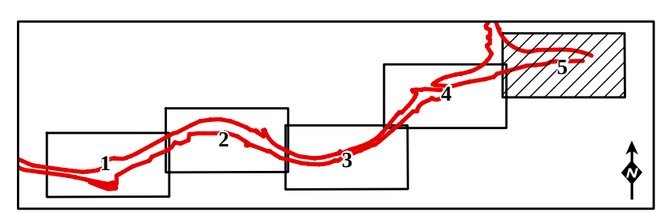

FIGURE 1-4
Sheet 5 of 5

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Project Components

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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Major Drainage Facilities

A total of eight existing reinforced concrete pipe (RCP) or reinforced concrete box (RCB) culverts carry storm water beneath SR-91 within the project limits. Six of these culverts would be extended or modified to accommodate the proposed project. The volumes of the existing collection basins would be retained by regrading these areas at the inlets to the culverts. Existing hillside drainage would be intercepted in new concrete ditches that would run behind the proposed retaining walls and convey drainage to the existing culverts.

Wherever feasible, construction of permanent water quality treatment best management practices (BMPs) would be included during design. These could include biofiltration swales at the toe of the fills on the south side of SR-91 in combination with detention or infiltration basins at the current collection basin locations.

Utilities

An underground crude oil pipeline, deemed to be a high-risk facility, should be "potholed" during final design of the proposed project to determine whether any relocation of this pipeline would be required. It is anticipated that construction activities for relocation of this facility would occur within the anticipated disturbance limits for the proposed project. No other utilities would need to be relocated.

Intelligent Transportation System (ITS) Facilities

The existing Caltrans fiber optic backbone line used in conjunction with the closed-circuit television cameras that observe the traffic conditions on SR-91 would need to be relocated farther south from its existing location or would be replaced with new facilities within the project limits.

New inductive loop detectors, which collect traffic data, would be installed in all eastbound lanes to maximize the service life of the system. The loop detectors on the ramps and connectors would need to be modified. The modification to the ramp meters and vehicle detection systems would occur within the project limits and will be detailed during final design.

The OCTA-owned vaults and cabinets that monitor the SR-91 Express Lanes would need to be relocated within the project limits to accommodate the widening.

Access Road Relocation

The existing private access road traveling under and immediately south of SR-91 in Riverside County from near the Riverside/Orange County line to approximately 3 km

(1.8 mi) west of Green River Village would need to be lengthened and shifted south to accommodate the proposed freeway widening.

Soil Balance

The addition of the eastbound lane would require the modification of existing slopes on the south side of SR-91 and the installation of retaining walls. The existing slopes may be cut back up to 9 m (29.5 ft), resulting in an approximate excavation of 29,500 cubic meters (cm) (1,041,645 cubic feet [cf]) of soil. The material excavated from these locations would be used in other areas within the project limits. An estimated additional 66,000 cm (2,330,460 cf) would be imported and used to construct the project.

Landscaping and Irrigation Systems

Planting plans would be included in the final design for the proposed project. The planting plan would consist of replacement planting for existing trees, shrubs, and ground cover and/or hydroseed that would be appropriate to the area and enhance the existing indigenous species and plant communities.

Irrigation work would consist of new irrigation systems as required for establishment of the replacement planting. New irrigation systems would be designed to use reclaimed water (if available). Irrigation crossovers would be provided for all ramps and overcrossing abutments.

Right-of-Way Acquisition

The proposed project would require acquisition of limited property outside the existing Caltrans right-of-way. Specifically, a 3 to 9 m (9.8 to 29.5 ft) wide strip of additional right-of-way (from Station 1 to Station 6) would be acquired for relocation of the private access road in Riverside County. A replacement ingress/egress easement may be required for shifting the access road. Permanent easements would be required between Stations 174+20 to 175+20 in Orange County and between Stations 4+35 to 6+10 and 6+45 to 7+45 in Riverside County in order to access the basins and retaining walls for maintenance. An aerial easement would be required over the BNSF railroad for widening of the West Prado Overhead over the BNSF railroad right-of-way between Stations 19+10 and 20+60 in Riverside County. Temporary and/or permanent easements may be obtained for sound walls 7, 8, and 9 proposed outside of the SR-91 right-of-way and adjacent to residences and Green River Kindercare.

Railroad

A Railroad Agreement would need to be negotiated between Caltrans and the BNSF for widening of the West Prado Overhead, including an aerial easement over the BNSF railroad right-of-way. Falsework posts would need to be located within BNSF right-of-way line. The structure type has been configured to minimize the effect on the railroad.

1.3.3.2 Temporary Project Components

Construction

Staged construction would be required for all ramp reconstruction and freeway widening. The number of through lanes would be maintained by restriping existing lanes. However, full closure of eastbound SR-91 and northbound SR-71 is not anticipated. The eastbound SR-91 off-ramp to Green River Drive and the SR-91 eastbound to SR-71 northbound connector would be closed periodically during construction. In addition, the Green River Drive on-ramp to eastbound SR-91 and a single eastbound general purpose lane may need to be closed during construction. All closures would be limited to weekends and night time only.

Construction Vehicle Access and Material Staging

Construction vehicle access and staging of construction materials would occur within disturbed or developed areas inside the existing Caltrans right-of-way or the proposed additional right-of-way. Vehicle access and materials staging during construction of the sound walls outside of Caltrans right-of-way would occur in approved designated areas. Equipment maintenance and staging would be in designated areas away from wildlife corridor entrances. All construction vehicle access, materials staging and storage, and other construction activities would occur within the defined disturbance limits for the proposed project.

Construction Lighting

The proposed project would require nighttime construction activities in some parts of the project area. If work is done at night, lighting would be directed away from wildlife corridors and land uses outside the freeway right-of-way.

The hours of construction would be limited to daylight hours at Coal Canyon, Fresno Canyon, and Wardlow Wash to avoid adverse lighting impacts to existing wildlife corridors in these areas.

There would be no permanent changes to lighting.

Temporary Construction Easements

Temporary construction easements (TCEs) would be necessary for shifting the private access road and regrading the collection basins.

TCEs would also be required for sound walls 7, 8, and 9 proposed outside of the SR-91 right-of-way and adjacent to residences and Green River Kindercare.

1.3.3.3 Value Analysis

A Value Analysis (VA) was performed by Value Management Strategies, Inc. for the proposed project. The Project Development Team accepted one VA alternative and conditionally accepted two others. The accepted VA alternative is to implement van pools during construction to reduce vehicles on the freeway during construction. This alternative increases project costs but improves project performance and value by 11 percent. The two conditionally accepted VA alternatives proposed to use pre-cast in lieu of cast-in-place construction techniques for selected structures and to postpone permanent sound wall construction to avoid throwaway. These alternatives would result in minimal cost impacts but would only improve project performance by 3 percent.

The proposed project incorporates the use of precast girders at Coal Canyon Road Undercrossing in lieu of cast-in-place, to speed construction and thereby reduce impacts to wildlife.

1.3.3.4 Project Schedule

Final design is anticipated to be completed in March 2009 and the construction period is anticipated to commence in August 2009 and end in September 2011.

1.4 Identification of the Preferred Alternative

During the initial project development and evaluation process, seven candidate alternatives (Alternatives 1, 1A, 1B, 2, 2A, 2B, and 3) specified in the PSR (Boyle Engineering, April 2004) and Preliminary Environmental Analysis Report (PEAR) (LSA Associates, Inc., January 2004) were reviewed by the Project Development Team (PDT). Five of the seven initial candidate alternatives (1, 1A, 1B, 2, and 2B) considered by the PDT were rejected from further consideration by the PDT early in the project development process.

As stated previously in Section 1.3.1, Project Alternatives, there were only two feasible alternatives for the project; therefore, Alternative 3 in the PSR was renamed

as Alternative 1 (No Build Alternative), and the former Alternative 2A was renamed as Alternative 2 (Build Alternative).

Alternative 2 (Build Alternative) has been selected by the PDT as the Preferred Alternative because it would relieve the chokepoint at the merge of northbound SR-241 and eastbound SR-91; reduce eastbound lane weaving and improve ramp merge/diverge between the SR-91/SR-241 and the SR-91/SR-71 interchanges; minimize right-of-way acquisition; and conform to State, regional, and local plans and policies. Therefore, Alternative 2 (Preferred Alternative) meets the project purpose and need. Alternative 1 (No Build Alternative) would not alleviate the chokepoint resulting from the lane-drop at the junction of northbound SR-241 and eastbound SR-91 near Coal Canyon Road.

1.5 Alternatives Considered but Eliminated from Further Discussion

During preliminary studies, six project alternatives were identified and studied in the PSR (Boyle Engineering, April 2004) and Preliminary Environmental Analysis Report (PEAR) (LSA Associates, Inc., January 2004). All the project alternatives included the addition of one eastbound lane and were differentiated from each other by varying shoulder widths, lane configurations, and structure modifications.

Alternatives 1, 1A, 1B, 2, and 2B were evaluated in the PSR and PEAR but were not carried forward for further evaluation in the Project Report/Environmental Document (PR/ED) phase. Alternative 2A (the Build Alternative in this document) and Alternative 3 (the No Build Alternative) were recommended for analysis in the PR and the ED. The reasons why Alternatives 1, 1A, 1B, 2, and 2B were rejected are provided in the following sections.

1.5.1 Alternative 1 from PSR

This alternative proposed to provide all lanes and shoulders on eastbound SR-91 at standard widths with the exception of the median shoulder. The lanes would be a standard width of 3.6 m (12.0 ft) and the outside shoulders would be a standard width of 3.048 m (10.0 ft). The median shoulder of nonstandard width of 0.9 meter (3.048 ft) would begin 915 m (3,000 ft) west of the Orange/Riverside County line and continue the entire length of the proposed project. The eastbound SR-91 to northbound SR-71 and southbound SR-71 to eastbound SR-91 connectors would each be widened to two standard widths (3.6 m, 12.0 ft) lanes with standard shoulders (1.5 m [5.0 ft] inside and 3.048 m [10.0 ft] outside).

This alternative included widening the connectors from two to four lanes at SR-71, which would require removal and replacement of the SR-71/SR-91 separation structure. Replacing this structure would require complete freeway closures on both SR-91 and SR-71, as well as the development of traffic detours around the structure to be used during demolition and reconstruction activities. This alternative would also involve substantial impacts to wetlands at Wardlow Wash. This alternative was rejected in the PSR as infeasible because of severe freeway operational impacts during reconstruction of the structure, safety issues, and substantial wetlands impacts. Therefore, this alternative was not forwarded for detailed evaluation in the PR/ED.

1.5.2 Alternative 1A from PSR

This alternative proposed to provide all lanes and shoulders on eastbound SR-91 at standard widths, with the exception of the median shoulder. The lanes would be a standard width of 3.6 m (12.0 ft), and the outside shoulders would be a standard width of 3.048 m (10.0 ft). The median shoulder of nonstandard width of 0.9 meter (3.048 ft) would begin 915 m (3,000 ft) west of the Orange/Riverside County line and continue the entire length of the proposed project. The eastbound SR-91 to northbound SR-71 and southbound SR-71 to eastbound SR-91 connectors would each be improved to provide one standard width (3.6 m [12.0 ft]) lane with standard 1.5 m (5.0 ft) left shoulders and nonstandard 2.4 m (7.9 ft) outside shoulders.

This alternative was rejected by the Project Development Team (PDT) during the project approval (PA) &ED phase because it does not meet the purpose of the project, and building the project to full standard is feasible. Therefore, this alternative was not analyzed further.

1.5.3 Alternative 1B from PSR

This alternative proposed to provide all lanes and shoulders on eastbound SR-91 at standard widths, with the exception of the median shoulder. The lanes would be a standard width of 3.6 m (12.0 ft), and the outside shoulders would be a standard width of 3.048 m (10.0 ft). The median shoulder of nonstandard width of 0.9 m (3.048 ft) would begin 915 m (3,000 ft) west of the Orange/Riverside County line and continue the entire length of the proposed project. The eastbound SR-91 to the northbound SR-71 connector would be improved to provide two standard width (3.6 m [12.0 ft]) lanes with nonstandard shoulders beneath the SR-91. The southbound SR-71 to the eastbound SR-91 connector would be improved to provide one standard width (3.6 m [12.0 ft]) lane with nonstandard shoulders beneath the SR-91. For both of these connectors, the width of the nonstandard inside shoulders

would be 1.0 m (3.3 ft), and the width of the nonstandard outside shoulder would be 1.13 m (3.7 ft).

Provision of one lane on the southbound SR-71 to eastbound SR-91 and two lanes on the eastbound SR-91 to northbound SR-71 connector, while maintaining the existing SR-91/SR-71 separation structure, would require redesigning the westbound SR-91 to northbound SR-71 connector to merge to the number 2 connector lane prior to the bridge across the Santa Ana River. A recent improvement project provided a dedicated lane for the westbound SR-91 to northbound SR-71 connector at SR-71 and improved traffic operations at this location. Requiring the westbound SR-91 to northbound SR-71 connector to merge to the number 2 connector lane again would not result in effective operations during peak hours and could result in an increased number of accidents at the merge location. This alternative was rejected due to this operational flaw. Therefore, this alternative was not forwarded for detailed evaluation in the PR/ED.

1.5.4 Alternative 2 from PSR

This alternative proposed to provide all lanes and shoulders on eastbound SR-91 at standard widths of 3.6 m (12.0 ft) lanes and 3.048 m (10.0 ft) shoulders, including the median shoulder throughout the length of the proposed project. The eastbound SR-91 to northbound SR-71 and southbound SR-71 to eastbound SR-91 connectors would each be widened to two standard width (3.6 m [12.0 ft]) lanes with standard shoulders (1.5 m [5.0 ft] inside shoulders and 3.048 m [10.0 ft] outside shoulders).

Widening of the connectors from two to four lanes at SR-71 would require removal and replacement of the SR-71/SR-91 grade separation structure. Removal and replacement of the structure would require complete freeway closures of both SR-91 and SR-71, as well as the development of traffic detours around the structure to be used during demolition and reconstruction activities. This alternative would also involve substantial impacts to wetlands at Wardlow Wash. This alternative was rejected in the PSR as infeasible because of severe freeway operational impacts during reconstruction of the structure, safety issues, and substantial wetlands impacts. Therefore, this alternative was not forwarded for detailed evaluation in the PR/ED.

1.5.5 Alternative 2B from PSR

This alternative proposed to provide all lanes and shoulders on eastbound SR-91 at standard widths of 3.6 m (12.0 ft) lanes and 3.048 m (10.0 ft) shoulders, including the median shoulder throughout the length of the proposed project. The eastbound SR-91

to northbound SR-71 connector would be improved to provide two standard width (3.6 m [12.0 ft]) lanes with nonstandard shoulders beneath the SR-91. The nonstandard inside shoulder would be 1.0 m (3.3 ft) wide, and the nonstandard outside shoulder would be 1.13 m (3.7 ft) wide. The southbound SR-71 to eastbound SR-91 connector would be improved to provide one standard width (3.6 m [12.0 ft]) lane with nonstandard shoulders beneath the SR-91 (1.0 m [3.3 ft] inside shoulders and 1.13 m [3.7 ft] outside shoulders).

Provision of one lane on the southbound SR-71 to eastbound SR-91 and two lanes on the eastbound SR-91 to northbound SR-71 connector while maintaining the existing SR-91/SR-71 separation structure would require redesigning the westbound SR-91 to northbound SR-71 connector to merge to the number 2 connector lane prior to the bridge across the Santa Ana River. A recent improvement project provided a dedicated lane for the westbound SR-91 to northbound SR-71 connector at SR-71 and improved traffic operations at this location. Requiring the westbound SR-91 to northbound SR-71 connector to merge to the number 2 connector lane again would not operate effectively during peak hours and could result in an increased number of accidents at the merge location. This alternative was rejected due to this operational flaw. Therefore, this alternative was not forwarded for detailed evaluation in the PR/ED.

1.5.6 Transportation Systems Management/Transportation Demand Management Alternative

Transportation System Management (TSM) strategies consist of actions that increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include: ramp metering, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. TSM also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and transit.

Transportation Demand Management (TDM) focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation choice in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the

travel experience. Typical activity within this component is providing contract funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases and providing limited rideshare services to employers and individuals.

In the project area, eastbound SR-91 consists of a combination of four to five general-purpose lanes, express toll lanes, transition lanes, HOV lanes, and message signs. The general-purpose lanes vary from nonstandard width to standard width and continue beyond the project limits.

The purpose of the proposed project is to reduce traffic congestion, improve operational deficiencies, and comply with legislative requirements. SR-91 is already served with transit and provides HOV lanes, with the exception of the toll facility section from SR-55 to the Orange/Riverside County line. Ramp metering or auxiliary lanes would not address the capacity, transportation demand, and roadway deficiency needs. Therefore, additional Transportation System Management measures would not satisfy the purpose and need of the project. For these reasons, a separate Transportation Systems Management/Transportation Demand Management Alternative is not evaluated in this environmental document.

1.6 Permits and Approvals

Table 1.5 identifies the permits and/or approvals that are or may be required prior to or during construction of the proposed project.

Table 1.5 Permits and/or Approvals Needed

Permit/Approval	Agency	Status
Encroachment Permit	Burlington Northern and Santa Fe (BNSF) Railway Company	Coordination will occur after environmental document approval
Streambed Alteration Agreement (Section 1600)	California Department of Fish and Game	Application will be submitted after environmental document approval. Coordination is ongoing.
Section 402 NPDES (Construction Activity)	State Water Resources Control Board	Application will be submitted prior to construction.
Section 402 NPDES (Groundwater Dewatering)	Santa Ana Regional Water Quality Control Board	Application will be submitted prior to construction.
Section 401 Permit	Santa Ana Regional Water Quality Control Board	Application will be submitted after environmental document approval. Coordination is ongoing.
Section 404 Permit (Individual or Nationwide[1])	United States Army Corps of Engineers (USACE)	Application will be submitted after environmental document approval. Coordination is ongoing.
Section 7 Consultation for threatened and endangered species	United States Fish and Wildlife Service	The Biological Opinion (BO) was issued on November 29, 2007.
Section 2081 Agreement for threatened and endangered species	California Department of Fish and Game	Consultation with CDFG is occurring concurrently with the Section 7 Consultation process and will be completed following environmental document approval.

Sources: *Project Report* (Kimley-Horn and Associates, Inc., December 2007) and Natural Environment Study (Chambers Group and LSA Associates, January 2007).

[1] After receipt of the Section 404 Permit application, the USACE will determine whether an Individual or Nationwide Permit is applicable.

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

HUMAN ENVIRONMENT

2.1 Land Use

For this analysis, the adopted General Plans for the Counties of Orange (2000) and Riverside (2003) and the Cities of Anaheim (2004), Yorba Linda (1993), and Corona (1986) were reviewed to understand the development trends, land use-related goals, and specific city and county policies that could affect or be affected by the proposed project.

2.1.1 Existing and Future Land Uses

2.1.1.1 Existing Land Uses

The project study area for land use is centered along the existing State Route 91 (SR-91) from approximately State Route 241 (SR-241) in Orange County to State Route 71 (SR-71) in Riverside County. The project area falls within the following cities and counties:

- County of Orange
- City of Anaheim (Orange County)
- City of Yorba Linda (Orange County)
- County of Riverside
- City of Corona (Riverside County)

Existing land uses adjacent to the project segment of SR-91 consist of residential, open space, recreation, commercial, industrial, and vacant land as shown on Figure 2-1. Table 2.1 identifies the specific land uses in the general vicinity of the proposed project.

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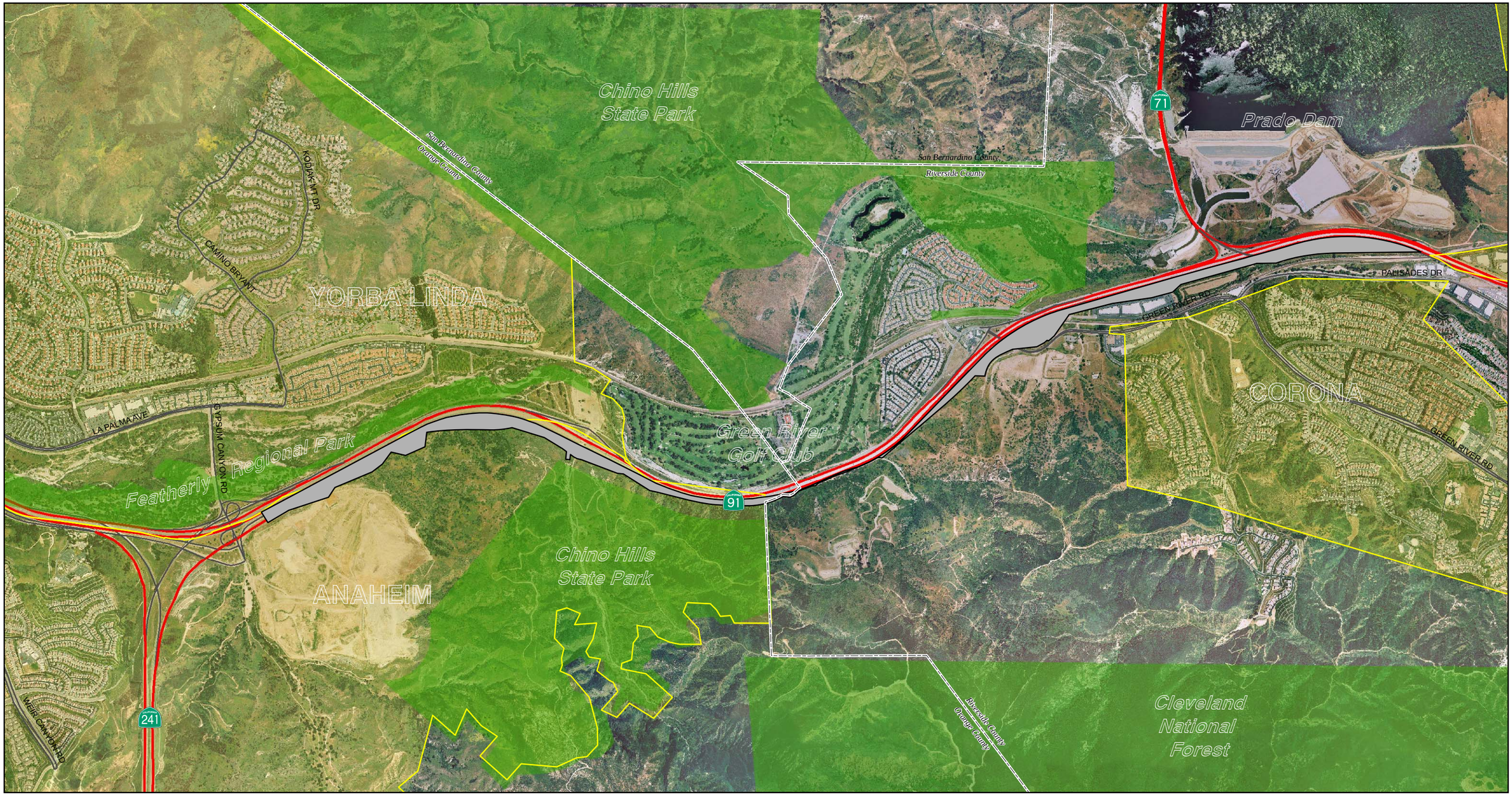

LEGEND

- Project Location
- City Boundary
- County Boundary
- Park Boundary
- Highways

N

0 1,000 2,000 FEET

0 305 610 METERS

SOURCE: SCAG General Plan Land Use, 2006.

FIGURE 1-2

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

Aerial Project Vicinity Map

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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Table 2.1 Project Vicinity Land Uses

Land Use	Orange County	Riverside County	Section 4(f) Resource
Transportation Land Uses			
SR-71 (Chino Valley Freeway)		■	
SR-241 (Eastern Transportation Corridor toll road)	■		
Green River Road Park-and-Ride		■	
West Corona Metrolink Station		■	
Burlington Northern Santa Fe Railroad and Metrolink Regional Commuter Railroad	■	■	
Residential/Commercial/Industrial Land Uses			
Green River Village Mobile Home Park		■	
Corona Auto Center		■	
City of Corona Wastewater Treatment Plant No. 1		■	
Robertson's Ready Mix aggregate quarry	■		
Institutional Land Uses			
Bryant Ranch Elementary School (publicly owned: Placentia-Yorba Linda Unified School District)	■		■
Casar Chavez Elementary School (publicly owned: Corona-Norco Unified School District)		■	■
Susanna Bixby Bryant Museum and Botanic Garden (publicly owned: City of Yorba Linda)	■		■
Recreation/Forest/Conservation Land Uses			
Featherly Regional Park (publicly owned: County of Orange)	■		■
Green River Golf Club (publicly owned: County of Orange)	■	■	■
Canyon Recreational Vehicle (RV) Park at Featherly Regional Park (publicly owned: County of Orange; part of Featherly Regional Park)	■		■
Brush Canyon Park (publicly owned: City of Yorba Linda)	■		■
Butterfield Park (publicly owned: City of Corona)		■	■
Santa Ana River Trail (publicly owned: Counties of Riverside and Orange)	■	■	■
Clearwater Sports Fields (publicly owned: City of Corona)		■	■
Serfas Club Park (publicly owned: City of Corona)		■	■
Mountain View Country Club (privately owned)		■	
Ridgeline Park (publicly owned: City of Corona)		■	■
Cleveland National Forest (publicly owned: United States Forest Service)	■	■	■
Chino Hills State Park (publicly owned: State of California Department of Parks and Recreation)	■	■	■
Coal Canyon Ecological Reserve (publicly owned: State of California Department of Parks and Recreation)	■		■
Orange County Central and Coastal Subregion Natural Communities Conservation Plan (NCCP) and Habitat Conservation Plan (HCP)	■		
Western Riverside County Multi-species Habitat Conservation Plan (MSHCP)		■	
Wildlife Land Uses			
Gypsum Canyon (privately owned: The Irvine Company)	■		
Fresno Canyon (publicly owned: City of Corona)		■	■
Wardlow Wash Significant Natural Resource Area (multiple public and private owners)		■	■
Water-Related Land Uses			
Prado Flood Control Basin		■	
Prado Dam and Spillway		■	
Santa Ana River	■	■	

Parks and Recreation

Several parks and recreational facilities are located in the vicinity of the project segment of SR-91. Table 2.2 provides a description of the park and recreational facilities in the vicinity of the project segment of SR-91. Several of these facilities are Section 4(f) resources, as shown on Figure 2-2. A Section 4(f) resource is a publicly owned park or recreation area, or wildlife and waterfowl refuge, and any land from a historic site of National, State, or local significance. However, all nontransit uses related to Featherly Regional Park, as depicted in Table 2.2, are outside of the proposed project construction limits.

Existing Travel Patterns

SR-91 is a major vehicular transportation corridor connecting Orange County, western Riverside County, and southwestern San Bernardino County. There are no parallel vehicular transportation connectors between these areas within approximately 16 kilometers (km) (10 miles [mi]) of SR-91.

Generally, westbound SR-91 is congested during the a.m. peak travel period. Conversely, during the p.m. peak travel period, eastbound SR-91 is congested. A substantial number of segments of SR-91 in Orange and Riverside Counties operate at or exceed capacity during peak hours. In addition to the high vehicle volumes, congestion is due to a combination of factors such as nonstandard lane widths, chokepoints, and transitions from the SR-91 Express Lanes and the high occupancy vehicle (HOV) lane.

2.1.1.2 Planned Land Uses

The General Plan land use designations for the areas adjacent to the project segment of SR-91 include residential, open space, recreation, and commercial uses, as shown on Figure 2-3 and described briefly below.

As shown on Figure 2-3, the planned land uses on the north side of SR-91 are consistent with the existing land uses in this area, as shown earlier on Figure 2-1. However, on the south side of SR-91, in the Cities of Anaheim, Yorba Linda, and Corona, the existing undeveloped areas are largely designated as residential uses in the relevant General Plans.

Table 2.3 provides the General Plan land use designations of land adjacent to the project area, by city and county.

Table 2.2 Parks and Recreational Facilities

Facility Name	Size	Sec. 4(f)	Description
Orange County			
Featherly Regional Park	322 hectares (ha) (795 acr es [ac])	Yes	Amphitheater, guided nature walks, recreational vehicle (RV) camping (Canyon RV Park), barbeques, fire rings, camp sites, hiking trails, horseshoe pits, interpretive programs and interpretative center, playground and tot lot, and picnic areas. Owned and operated by the County of Orange.
Canyon RV Park	(Part of Featherly Regional Park)	Yes	Facilities include 140 RV hook-up sites, cabin rentals, bike trails, outdoor amphitheatre, swimming pool, laundry facilities, open fire pits, and an RV dump station. Owned by the County of Orange and operated by a private party under contract to the County of Orange.
Brush Canyon Park	3.0 ha (7.0 ac)	Yes	Ball fields, soccer fields, basketball court, play equipment, tennis courts, and picnicking areas. This facility is owned and operated by the City of Yorba Linda.
Gypsum Canyon	575 ha (1,421 ac)	No	Recreational: There are no improved facilities. Scheduled docent-led nature walks by the Nature Conservancy. Wildlife: No improvements specific to wildlife. Gypsum Canyon is privately owned by The Irvine Company.
Bryant Ranch Elementary School	8.5 ha (21.0 ac)	Yes	Play field, track field, and three baseball fields. The Junior United Soccer Association and the American Youth Soccer Organization use the school facilities for practice and league games after normal school hours. This school is owned and operated by the Placentia-Yorba Linda Unified School District.
Susanna Bixby Bryant Museum and Garden	0.40 ha (1 ac)	Yes	Existing facilities include a restored 1800s ranch house, Yorba Linda Heritage Museum, and botanical gardens. This facility is owned and operated by the City of Yorba Linda.
Coal Canyon Ecological Reserve	276 ha (681 ac)	Yes	Recreational: Scheduled nature walks on designated trails. Wildlife: No improvements specific to wildlife. The County of Orange owns and operates this reserve.
Riverside County			
Fresno Canyon	22 ha (55 ac)	Yes	Recreational: There are no improved facilities. Wildlife: No improvements specific to wildlife. This canyon is owned by the City of Corona.
Wardlow Wash	54 ha (134 ac)	Yes	Wardlow Wash is designated a Significant Natural Resource under the California Department of Fish and Game (CDFG) Land and Natural Areas Program pursuant to Fish and Game Code Sections 1930 to 1932. There are no improved facilities associated with this resource. The land within this Significant Natural Resource is owned by a number of public and private owners.
Ridgeline Park	2 ha (5 ac)	Yes	Ball fields, barbeques, picnic grounds, restrooms, and drinking fountains. This facility is owned and operated by the City of Corona.
Serfas Club Park	2.3 ha (5 ac)	Yes	Ball fields, basketball courts, barbeques, play equipment, and picnic grounds. This facility is owned and operated by the City of Corona.
Clearwater Sports Fields	2.3 ha (5.7 ac)	Yes	Ball fields, football fields, and play equipment. This facility is owned and operated by the City of Corona.

Facility Name	Size	Sec. 4(f)	Description
Cesar Chavez Elementary School	14 ha (35 ac)	Yes	Basketball courts, track and soccer fields, and grassy open areas. This school is owned and operated by Corona-Norco Unified School District. The City of Corona, Parks and Community Services Department runs an after-school program at this school called Kids Club.
Butterfield Park	26 ha (64 ac)	Yes	Ball fields, soccer fields, concession stand, exterior jogging, barbeques, play equipment, picnic grounds, restrooms, drinking fountains, and a dog park. This facility is owned and operated by the City of Corona.
Mountain View Country Club	41 ha (100 ac)	No	A golf course, banquet facilities, clubhouse, and restaurant. This facility is privately owned and operated.
Resources in Both Orange and Riverside Counties			
Cleveland National Forest	186,162 ha (460,000 ac)	Yes	Hunting, horseback riding, mountain biking, developed campgrounds, undeveloped camping, and wilderness area. Improvements within the Trabuco Ranger District include 22 trails, 10 trail heads, 4 family campgrounds, 2 picnic areas, 1 group campground, and the San Mateo Canyon Wilderness Area. Cleveland National Forest is owned and operated by the United States Forest Service.
Chino Hills State Park	5,039 ha (12,452 ac)	Yes	Bike trails, nature exhibits and programs, family campsites, guided nature tours, hiking trails, horseback trails, trailheads, vista overlooks, picnic areas, automobile camp sites, wildlife corridors, and wildlife crossings under existing SR-91. This park is owned and operated by the State of California Department of Parks and Recreation.
Green River Golf Club	22 ha (560 ac)	Yes	Two championship courses, clubhouse, and banquet facilities. The golf club is owned by the County of Orange and operated by a private party under contract to the county.
Santa Ana River Trail	6.3 km (3.91 miles[mi])	Yes	In the vicinity of the proposed project, the trail occurs in multiple alignments. The trail is completed approximately west of the Orange/Riverside County boundary along the north side of SR-91. Another alignment of the trail is completed adjacent to the north side of Featherly Regional Park from just east of Gypsum Canyon Road west to Weir Canyon Road. The trail in the project area is owned and operated by the Counties of Orange and Riverside.
Santa Ana River (SAR)	8.53 km (5.63 mi)	No	Although there are designated recreational facilities near the SAR, there are no existing or planned recreational facilities specifically associated with the SAR riverbed in the vicinity of the proposed project. Land underlying the SAR is owned by multiple public and private owners.

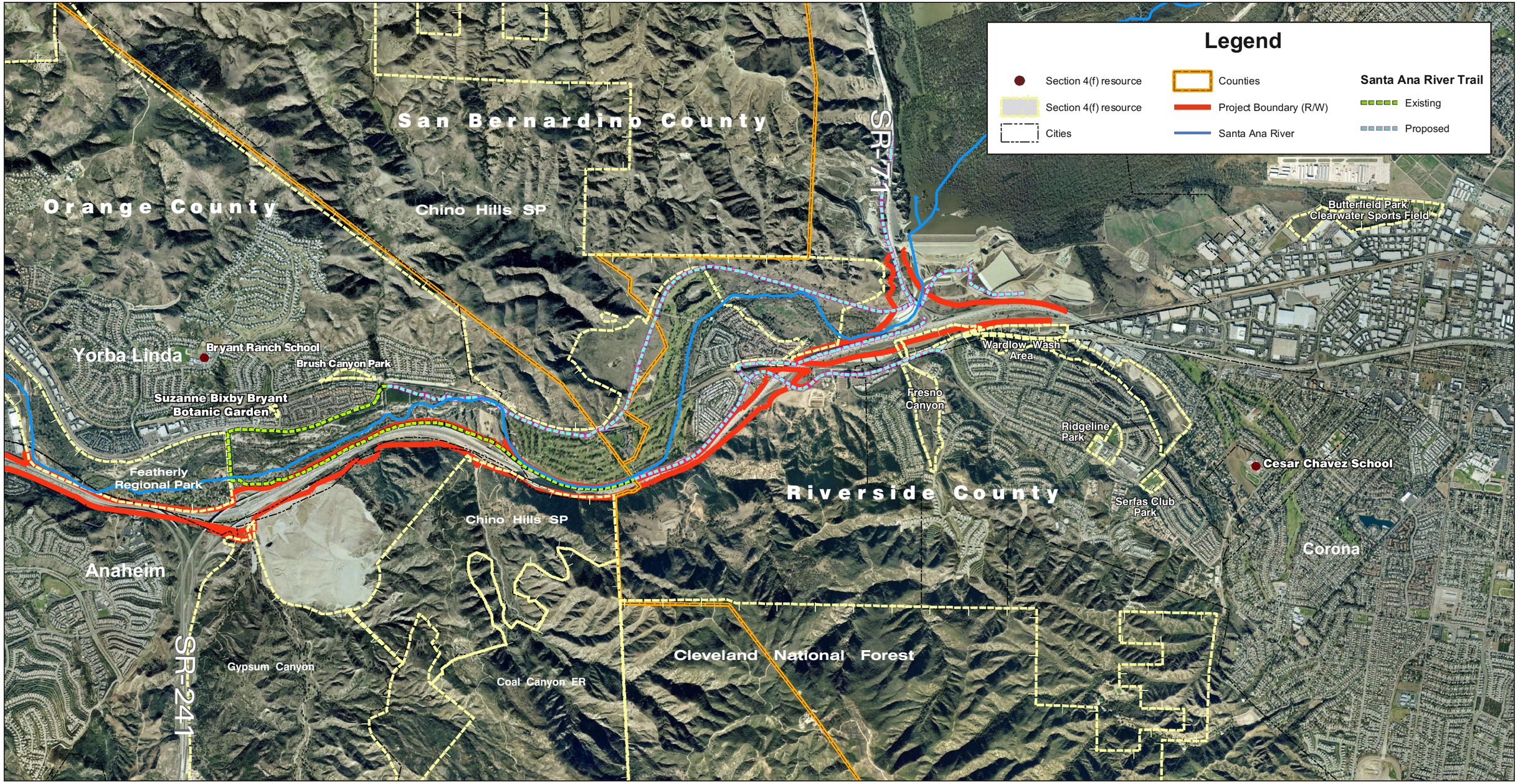

FIGURE 2-2

N

0 0.25 0.5
MILES

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Section 4(f) Resources

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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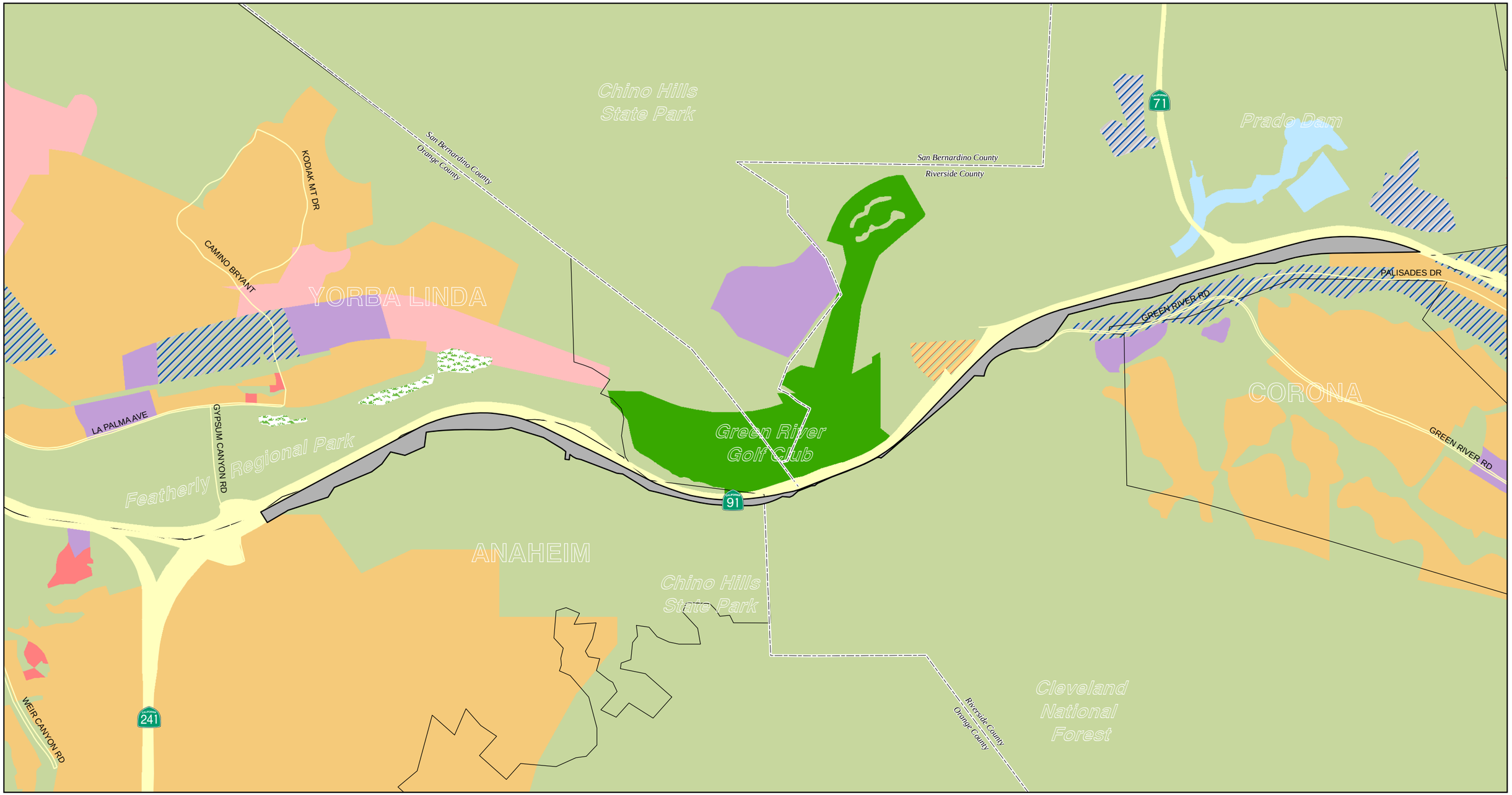

LEGEND

- Project Location
- City Boundary
- County Boundary

Planned Land Use

- Agriculture
- Commercial
- Industrial
- Mixed Use
- Open Space
- Open Space - Recreation
- Planned Development
- Public Facilities
- Residential
- Transportation
- Water

N

0 1,000 2,000 FEET

0 305 610 METERS

SOURCE: SCAG General Plan Land Use, 2006.

FIGURE 2-3

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

General Plan Land Use Designations

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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Table 2.3 Adjacent General Plan Land Use Designations

Jurisdiction	General Plan Land Use Designations
County of Orange	Open Space
City of Anaheim	Institutional Low Medium Density Residential Open Space
City of Yorba Linda	Open Space with Floodplain Overlay Planned Community
County of Riverside	Rural Mountains
City of Corona	General Commercial Light Industrial Low Density Residential Medium Density Residential Mixed Use II: Industrial and Commercial Open Space – General Open Space – Recreation

Sources: County of Orange, General Plan Land Use Element, 2000.
City of Anaheim, General Plan Land Use Element, 2004.
City of Yorba Linda, General Plan Land Use Element, 1999.
County of Riverside, General Plan Land Use Element, 2003.
City of Corona, General Plan Land Use Element, 1986.

Orange County (Unincorporated Areas)

Future land uses in unincorporated Orange County in the vicinity of the project segment of SR-91 are open space, as shown on Figure 2-3.

Riverside County (Unincorporated Areas)

Future land uses in unincorporated areas in western Riverside County in the project vicinity are open space, predominantly in the Cleveland National Forest, and some residential uses on the north side of SR-91, as shown on Figure 2-3. Unincorporated western Riverside County in the project area has limited areas for new development, as it is predominantly built out or in open space designations.

City of Anaheim (Orange County)

In the area south of the project segment of SR-91, land use designations in the City of Anaheim are predominantly residential, as shown on Figure 2-3.

City of Corona (Riverside County)

As shown in Figure 2-3, land use designations in the City of Corona adjacent to the project segment of SR-91 include commercial and residential uses. The Prado Basin and Dam are in a large designated open space area north of SR-91 and are not affected by the proposed project, which is on the south side of SR-91.

City of Yorba Linda (Orange County)

General Plan land use designations in the east part of the City of Yorba Linda in the vicinity of the project segment of SR-91 include residential, commercial, and planned development uses, as shown on Figure 2-3.

Planned Developments

Table 2.4 identifies approved and planned land uses in the vicinity of the project segment of SR-91.

Table 2.4 Approved and Planned Land Uses in the Project Vicinity

Name	Jurisdiction	Development	Status
Mountain Park Specific Plan	City of Anaheim	2,500 residential units, 875 ha (2,163 ac) of open space, and related infrastructure.	Approved by the City Council; preparing tract map
Phillips 66/Tosco Corporation	County of Orange	New self-service fuel station and Circle K store.	Granted with Conditions of Approval
Mammoth Equity	City of Corona	Office building on 1.5 ha (3.6 ac)	Granted with Conditions of Approval by Planning Commission
Green River Ranch	City of Corona	Mixed use, commercial, and estate residential on 67 ha(165 ac)	EIR approved; under plan review

Sources: City of Anaheim, telephone interview with the Planning Department, July 2006.
City of Corona, telephone interview with the Planning Department, July 2006.
County of Orange, telephone interview with the Planning Department, July 2006.
City of Yorba Linda, telephone interview with the Planning Department, July 2006.

2.1.2 Consistency with State, Regional, and Local Plans

2.1.2.1 General Plans

Relevant land use and circulation/transportation-related goals and policies objectives in the Cities of Anaheim, Corona, and Yorba Linda and the Counties of Orange and Riverside General Plans are described below.

City of Anaheim General Plan

Goal 1.1 Provide a comprehensive multimodal transportation system that facilitates current and long-term circulation of people and goods in and through the City of Anaheim.

Goal 1.2 Support improvements to highways passing near and through the City of Anaheim.

Goal 2.2 Provide a safe circulation system.

Goal 2.3 Improve regional access for City of Anaheim residents and workers.

City of Corona General Plan

Goal 1.1 A community that contains a diversity of land uses that supports the needs of and provides a high quality of life for its residents, sustains and enhances the City of Corona's economy and fiscal balance, is supported by adequate community infrastructure and services, and is compatible with the environmental setting and resources.

Goal 6.2 Support development of a network of regional roadway facilities which ensure the safe and efficient movement of people and goods from within the City of Corona to areas outside its boundaries, and which accommodate the regional travel demands of developing areas outside the City.

Policy 6.2.1 Support the addition of capacity improvements such as high occupancy vehicle lanes, general-purpose lanes, or auxiliary lanes to SR-91 and Interstate 15 (I-15).

City of Yorba Linda General Plan

Goal 1 To develop a circulation system that meets the needs of current and future residents of the City of Yorba Linda, has adequate capacity for projected future traffic demands at acceptable levels service, and facilitates the safe and efficient movement of people and goods throughout the City.

Goal 2 Support development of a network of regional roadway facilities which ensures the safe and efficient movement of people and goods from within the City of Yorba Linda to areas outside its boundaries, and which accommodates the regional travel demands of areas outside of the City.

County of Orange General Plan

Policy 4 Land Use/Transportation Integration: To plan an integrated land use and transportation system that accommodates travel demand.

County of Riverside General Plan

Policy C 1.1 Design the transportation system to respond to concentrations of population and employment activities, as designated by the Land Use Element and in accordance with the Circulation Plan.

Policy C.2.1 Maintain the following countywide target Levels of Service: LOS C along all County maintained roads and conventional state highways

Policy C.3.2 Maintain the existing transportation network, while providing for future expansion and improvement based on travel demand, and the development of alternative travel modes.

Temescal Canyon Area Plan

Policy TCAP 11.1 Design and develop the vehicular roadway system in accordance with the functional classifications and standards specified in the Circulation Element.

Policy TCAP 11.2 Maintain the County's roadway Level of Service standards as described in the Circulation Element.

2.1.2.2 Transportation Plans

Transportation plans relevant to the proposed project include the State Transportation Improvement Program (STIP), Regional Transportation Improvement Program (RTIP), County of Orange Measure M, County of Riverside Measure A, State Proposition 1B, and Caltrans Traffic Congestion Relief Program (TCRP).

Several regional and subregional transportation plans and programs apply to the Cities of Anaheim, Corona, and Yorba Linda and the Counties of Orange and Riverside. They include the Riverside County Congestion Management Program (RCCMP), the Orange County Congestion Management Program (OCCMP), the Southern California Association of Governments Comprehensive Transportation Plan (SCAG CTP), and the Regional Transportation Plan (RTP).

2.1.2.3 Habitat Conservation Plans

The proposed project is adjacent to two existing HCPs: the Orange County Natural Community Conservation Plan and Habitat Conservation Plan (NCCP and HCP) and the Western Riverside County Multi-species Habitat Conservation Plan (MSHCP), as described below.

Orange County NCCP and HCP

The Orange County NCCP and HCP were prepared pursuant to the NCCP Act of 1991 to protect and manage habitat supporting a broad range of plant and animal populations. The specific purposes of this plan are:

- Planning for the protection of multiple species and multiple habitats within the coastal sage scrub habitat mosaic by creating a habitat reserve system that contains substantial sage scrub, chaparral, grasslands, riparian, oak woodlands, cliff and rock, forest, and other habitats;
- Developing a conservation program that shifts away from the current focus on a project-by-project, single species protection to conservation and management of many species and multiple habitats on a subregional level;
- Allowing social and economic uses within the subregion that are compatible with the protection of identified species and habitats;
- Protecting the federally listed coastal California gnatcatcher in a manner consistent with Section 10(a) of the Federal Endangered Species Act (FESA) and the Special 4(d) Rule for the gnatcatcher while providing for future incidental take of the species;
- Protecting two other target species, the coastal cactus wren and orange-throated whiptail lizard, by treating them "as if they were listed" under Section 10(a) of FESA and allowing incidental take of these species;
- Protecting coastal sage scrub habitat within the coastal sage scrub habitat mosaic at a level comparable to the protection provided by coastal sage scrub, thereby contributing to the protection of a broader range of species than just the target species or coastal sage scrub species;
- Addressing the habitat needs of the nontarget species within the subregion and the non-coastal sage scrub habitats, including protecting six other federally listed species consistent with FESA Section 10(a) and treating 30 other identified species "as if they were listed" under Section 10(a) of the FESA;
- Addressing the conservation of sensitive species located on the Dana Point Headlands site, including the coastal California gnatcatcher, Pacific pocket mouse, other identified species, and five designated plant species;
- Building on prior regional open space planning that has occurred in Orange County and integrating that open space planning into the creation of the habitat reserve system and subregional conservation strategy; and,
- Addressing impacts to coastal sage scrub and non-coastal sage scrub habitats and related NCCP and HCP species in a joint Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) in a manner that will be used and relied on in conjunction with future environmental reviews and documents.

The Orange County NCCP and HCP plan area encompasses approximately 842 square kilometers (sq km) (325 square miles [sq mi]) and was adopted in July 1996.

The project segment of SR-91 and the project limits are immediately north of, and outside of, the NCCP plan area in this part of Orange County.

Western Riverside County MSHCP

The Western Riverside County MSHCP, adopted on June 17, 2003, is a comprehensive, multi-jurisdictional HCP focusing on conservation of species and their associated habitats in western Riverside County. The MSHCP is one of several large, multi-jurisdictional habitat planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity in a rapidly urbanizing region. The MSHCP will allow Riverside County and cities in Riverside County to better control local land use decisions and maintain a strong economic climate in the region while addressing the requirements of the FESA and California Endangered Species Act (CESA).

The MSHCP Plan Area encompasses approximately 3.11 million ha (1.26 million ac). It includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. This HCP addresses multiple species and multiple habitats within a diverse landscape, from urban centers to undeveloped foothills and mountain forests, all under multiple jurisdictions. It extends across many bioregions, including the Santa Ana Mountains, Riverside Lowlands, San Jacinto Foothills, San Jacinto Mountains, Agua Tibia Mountains, Desert Transition, and San Bernardino Mountains.

The MSHCP serves as an HCP pursuant to Section 10(a)(1)(B) of FESA, as well as a NCCP under the NCCP Act of 2001. The approval of the MSHCP and execution of the Implementation Agreement (IA) by the United States Fish and Wildlife Service (USFWS) and the CDFG allows these agencies to issue Take Authorizations to the signatories of the IA. Issuance of Take Authorization to the local jurisdictions allows Plan participants to implement land use decisions consistent with the MSHCP without project-by-project review and permitting by the wildlife and resources agencies. A local, streamlined approach to planning for endangered/sensitive species results in greater economic development certainty and provides for and maintains biological diversity by creating an interconnected MSHCP Conservation Area in the Plan Area. In addition to the preservation of species and associated habitats, the MSHCP Conservation Area provides open space and recreational opportunities, which enhance the quality of life in Riverside County.

The eastern portion of the project site is located within a proposed criteria area as part of the MSHCP area for western Riverside County. There were six Criteria Areas and three Narrow Endemic Plant Species identified by the Riverside County MSHCP as having the potential to occur on the project site. The criteria cells that the project limits are within are as follows: 1702, 1704, 1612, and 1616. In compliance with Caltrans obligations in the MSHCP Implementation Agreement, Section 13.8 (A), habitat suitability assessments and required surveys were performed in accordance with MSHCP guidelines.

2.1.3 Environmental Consequences

2.1.3.1 Build Alternative (Alternative 2)

Permanent Impacts

Alternative 2, the Build Alternative, proposes widening existing eastbound SR-91 largely within existing Caltrans right-of-way. The proposed improvements are consistent with the relevant General Plans and transportation plans because they would contribute to the goal of reducing traffic congestion in the region. SR-91 is recognized in the regional and State transportation plans as an important transportation facility connecting Orange, Riverside, and San Bernardino Counties. The proposed project is consistent with both the RTP and the RTIP.

The proposed project is intended to meet the existing and/or projected traffic demand based on the local land use plans. The project is part of the choke point program aimed at alleviating an existing choke point. The proposed project would not prohibit development of other projects in the surrounding area.

This alternative would result in the acquisition of partial parcels of privately owned land to relocate an existing access road, but would not require the acquisition of any structures. The proposed right-of-way is in an area that is designated as open space. The project would also require permanent easements to access the basins and retaining walls for maintenance and may obtain permanent easements to maintain sound walls outside of Caltrans right-of-way.

The proposed project would not conflict with the adopted HCPs in the project vicinity because it would not result in fragmentation of sensitive habitats or degradation of important wildlife corridors identified in the HCPs.

Visual impacts to adjacent Section 4(f) resources would be minimal because the proposed project involves no changes to the vertical alignment of SR-91 and minor changes to the horizontal alignment.

The noise analysis found that at the seven receptor locations measured along trails in Chino Hills State Park and Featherly Regional Park, noise levels at two out of the seven receptors would increase by 1 dBA when the build condition was compared to the existing condition. This increase is minimal and would not be detected by human ears. In addition, because trail use is a transient activity, it does not qualify for noise abatement under FHWA protocol. Featherly Regional Park and Chino Hills State Park are also not considered sensitive receptors because within the study area there are no picnic areas or campsites within these parks; the only facilities are bike trails or walking trails, which are only subject to transient use. The Featherly Regional Park amphitheatre and camping area are approximately 0.4 km (0.25 mi) outside of the project area with existing noise abatement features between the project area and the park facilities; therefore they would not be affected by noise increases from the proposed project.

Noise abatement was not considered for the Green River Golf Club because the previous owner of the Golf Club indicated in a February 9, 2006, letter (Appendix B) that construction of noise barriers would adversely affect its business. In addition, the golf course is considered a location of transient use. Therefore, the Green River Golf Club does not qualify for noise abatement.

No historic sites would be affected by the proposed project.

There would be no adverse permanent impacts to land uses or Section 4(f) resources.

Temporary Impacts

Several temporary construction easements (TCEs) would be required. A TCE would be required from private property in Riverside County in order to regrade two existing collection basins within Caltrans right-of-way and relocate an existing access road to this property. TCEs would be required from private properties in order to construct SW-7, SW-8, and SW-9.

Finally, a TCE would be required within Chino Hills State Park in order to access and regrade an existing collection basin within Caltrans right-of-way. The area that would be temporarily impacted is estimated to be 266 m^2 (2,860 ft^2). This temporary occupancy would not be considered a use because: (1) the scope of work would be minor and less than the construction time for the project; (2) there would be no temporary or permanent adverse impacts; and (3) the affected land would be fully restored. The Caltrans letter regarding the scope of this temporary occupancy and

State Department of Parks and Recreation Concurrence letter are provided in Appendix B.

Vegetation clearance within Caltrans right-of-way would be needed where Chino Hills State Park and Fresno Canyon/Wardlow Wash meet SR-91, and disturbed vegetation would be restored. Natural resources impacts are discussed in Sections 2.16, 2.17, and 2.18; this activity would not be considered a use of Section 4(f) resources.

Construction noise would be minimized through compliance with Caltrans standard specifications. Refer to Section 2.15, Noise, for additional information.

Chino Hills State Park would be impacted by a TCE; therefore, they were contacted regarding the impacts to the resource. Featherly Regional Park would not have any impacts or use; therefore, they were not contacted.

Summary of Section 4(f) Resource Impacts

A Formal Section 4(f) Evaluation and a De Minimis Determination were determined to not be applicable for the proposed project because there would be no uses of Section 4(f) resources as defined in 23 CFR 771.135(p). That is: (1) no land from a Section 4(f) resource would be permanently incorporated into the project right-of-way, (2) the temporary occupancy would not be adverse in terms of the Section 4(f) statute's preservationist purposes, and (3) there would be no constructive use of land that would impair the activities, features, or attributes of a Section 4(f) resource. Therefore, a Section 4(f) Evaluation or a De Minimis Determination were not prepared for the proposed project.

The following list summarizes the impacts to the resources described in Table 2.2.

Featherly Regional Park- The Featherly Regional Park amphitheatre and camping area are approximately 0.4 km (0.25 mi) outside of the project area with existing noise abatement features between the project area and the park facilities; therefore they would not be affected by noise increases from the proposed project.

There are no impacts to permanent resources due to lack of proximity and existing noise abatement features. Transient uses such as trails are not considered sensitive receptors.

Canyon RV Park- A permanent resource within Featherly Regional Park and is not impacted as described above.

Brush Canyon Park- No impact due to lack of proximity.

Gypsum Canyon- Not a Section 4(f) Resource.

Bryant Ranch Elementary School- No impact due to lack of proximity.

Susanna Bixby Museum and Garden- No impact due to lack of proximity.

Coal Canyon Ecological Reserve- No impact due to lack of proximity.

Fresno Canyon- Vegetation clearance within Caltrans right-of-way would be needed where Fresno Canyon meets SR-91, and disturbed vegetation would be restored. This activity would not be considered a use of a Section 4(f) resource.

Wardlow Wash- Construction of the retaining wall in the vicinity of Wardlow Wash would occur primarily from the freeway side, thus avoiding permanent impacts to habitat in Wardlow Wash.

Ridgeline Park- No impact due to lack of proximity.

Serfas Club Park- No impact due to lack of proximity.

Clearwater Sports Field- No impact due to lack of proximity.

Cesar Chavez Elementary School- No impact due to lack of proximity.

Butterfield Park- No impact due to lack of proximity.

Mountain View Country Club- Not a Section 4(f) Resource.

Cleveland National Forest- No impact due to lack of proximity.

Chino Hills State Park- Vegetation clearance within Caltrans right-of-way would be needed where Chino Hills State Park meets SR-91, and disturbed vegetation would be restored. This activity would not be considered a use of a Section 4(f) Resource. In addition, Chino Hills State Park is not considered a sensitive noise receptor because within the study area there are no picnic areas or campsites within this park.

Green River Golf Club- There are no physical impacts to this resource and noise abatement was not considered for the Green River Golf Club because the previous owner (Green River Golf Corporation) indicated in a February 9, 2006, letter (Appendix B) that construction of noise barriers would adversely affect its business.

In addition, the golf course is considered a location of transient use. Therefore, the Green River Golf Club does not qualify for noise abatement and there are no Section 4(f) Resource impacts. In addition, the new owner (County of Orange Resource and Development Management Department) concurs that additional noise studies are not required but requests that the issue be revisited as part of any future SR-91 project studies in this vicinity.

Santa Ana River Trail- There are no physical impacts to this resource and it is considered a location of transient use. Therefore, this resource does not qualify for noise abatement nor are there Section 4(f) Resource impacts.

Santa Ana River- Not a Section 4(f) Resource.

There are no Section 4(f) Resource "uses" within the project area. Additionally, the temporary and permanent right of way acquisitions anticipated to be needed for this proposed project are not expected to result in any use impacts to any of the Section 4(f) resources listed above. Therefore, provisions for a Section 4(f) evaluation or determination are not triggered.

2.1.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in construction of any transportation improvements and therefore would not result in temporary impacts related to land use or parks and recreational facilities.

The No Build Alternative would not result in right-of-way acquisition or other impacts related to existing and planned land uses. However, this alternative is not consistent with the local General Plan goals and relevant transportation plans because it would not provide transportation improvements consistent with existing and planned development in the Cities of Anaheim, Corona, and Yorba Linda and the Counties of Riverside and Orange.

2.1.4 Avoidance, Minimization, and/or Mitigation Measures

Right-of-way would be acquired in compliance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), and disturbed vegetation would be restored. The acquisitions would not affect the viability of any existing land use along the southern edge of the existing right-of-way for the SR-91. Other than noise measures listed in Section 2.15, no additional avoidance, minimization, or compensation measures are required.

2.2 Growth

The analysis of the potential growth-inducing impacts of the proposed project is based on demographic information from the 2005 Southern California Association of Governments (SCAG) City Projections (www.scag.ca.gov/forecast/index.htm).

2.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences that may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 Code of Federal Regulations (CFR) 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

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

2.2.2 Affected Environment

This section describes demographic characteristics of Orange and Riverside Counties and the Cities of Anaheim, Corona, and Yorba Linda. The study area for potential growth effects includes all three cities and parts of the two counties and, as a result, extends beyond the immediate project limits to include areas in those cities and counties anticipated to be potentially directly and/or indirectly affected and/or benefited by the proposed project. To portray the demographic characteristics of this community impact study area, SCAG population estimates were evaluated. Table 2.5 shows the 2005 populations, the projected 2030 populations, and the projected percent increase in population between 2005 and 2030 for Orange and Riverside Counties and the Cities of Anaheim, Corona, and Yorba Linda.

Table 2.5 Population Growth Estimates

City or County	2005 Population	2030 Population	Projected Growth
Orange County	3,103,337	3,552,742	13%
Riverside County	1,850,231	3,143,468	70%
Anaheim	352,032	383,739	9%
Corona	141,335	171,395	21%
Yorba Linda	66,286	76,811	16%

Source: 2004 SCAG Growth Projections, www.scag.ca.gov.

According to SCAG population estimates, the population in Orange County was 3,103,337 persons in 2005. SCAG projects that the population in Orange County will increase by 13 percent, to 3,552,742 persons, by 2030.

According to SCAG, the population in western Riverside County was 1,850,231 persons in 2005. SCAG projects that the population in western Riverside County will increase by 70 percent, to 3,143,468 persons, by 2030.

The 2005 populations in the Cities of Anaheim, Corona, and Yorba Linda were 352,032, 141,335, and 66,286 persons, respectively. SCAG projects that the population in Anaheim will increase by 9 percent, to 383,739 persons, by 2030. The population in the City of Corona is projected to increase by 21 percent, to 171,395 persons, by 2030. The population in the City of Yorba Linda is projected to increase by 16 percent, to 76,811 persons, by 2030. The projected growth, shown in the tables above, includes future projects such as Mountain Park Development.

The project segment is a pass through segment of SR-91 and there are no regional retail or commercial centers adjacent or near the project area. Future housing developments within the project area include the Mountain Park development which has already been accounted for in the local jurisdiction's growth projections. The environmental consequences discussion in the following section, does not address housing and jobs since there are no regional centers or unanticipated housing developments within the project area.

2.2.3 Environmental Consequences

2.2.3.1 Build Alternative (Alternative 2)

Alternative 2 would reduce traffic congestion and improve operational deficiencies on SR-91. Alternative 2 would specifically address existing congestion on this segment of eastbound SR-91. Growth in the three cities and two counties, as summarized in Table 2.5, is forecasted based on land use plans, economic conditions, and other factors. The proposed project would accommodate existing deficiencies as well as

planned growth and would not foster growth in excess of what is projected. The proposed project would not be expected to influence the amount, location, and/or distribution of growth in the area cities and counties. The proposed project would not, in itself, result in changes in land use, economic vitality, and population density. Therefore, the proposed project is not considered growth-inducing.

2.2.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not accommodate growth that has already occurred and growth that is forecasted in the cities and counties based on adopted land use plans and SCAG projections. While the No Build Alternative would not reduce traffic volumes, it also would not induce growth elsewhere in the cities or counties. Therefore, the No Build Alternative is not anticipated to influence the amount, location, and/or distribution of growth in the Cities of Corona, Anaheim, and Yorba Linda, or the Counties of Orange and Riverside.

2.2.4 Avoidance, Minimization, and/or Mitigation Measures

Alternative 2 would not result in growth-inducing impacts; therefore, no avoidance, minimization, or mitigation measures are required.

2.3 Farmlands/Timberlands

There are no commercially harvestable timberlands in Southern California. Therefore, timberlands are not analyzed in this section.

2.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 USC 4201-4209; and its regulations, 7 CFR Chapter VI Part 658) require federal agencies such as the Federal Highway Administration (FHWA), and Caltrans as assigned, to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For the purposes of the FPPA, farmland includes Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance.

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

2.3.2 Affected Environment

The project area does not contain any designated farmlands.

2.3.3 Environmental Consequences

There are no designated farmlands in the project area; therefore, there are no impacts to farmlands as a result of the Build and No Build Alternatives for the proposed project.

2.3.4 Avoidance, Minimization, and/or Mitigation Measures

There are no impacts associated with farmlands; therefore, no avoidance, minimization, or mitigation measures are required.

2.4 Community Impacts

The following information is summarized from the United States Census Bureau (2000 Census) and the 2005 Southern California Association of Governments (SCAG) Growth Projections.

This section describes the demographic characteristics of the project study area, which is primarily within State-owned right-of-way. The study area for community impacts extends beyond the proposed eastbound lane addition disturbance limits to include those communities that could potentially be anticipated to be directly and/or indirectly impacted by the proposed project. To portray the demographic characteristics of this community impact study area, four census tracts from the 2000 Census were evaluated. The analysis in this section focuses on potential project impacts related to community character and cohesion.

The potential for the proposed project to adversely or beneficially affect community cohesion in the Cities of Anaheim, Corona, and Yorba Linda and the Counties of Orange and Riverside was evaluated based on data from the 2000 Census and, specifically, data for Census Tracts 218.26, 218.28, 419.04, and 419.07.

The questions asked in assessing whether the project would result in adverse or beneficial effects to community cohesion were:

- What features, services and/or amenities in these cities contribute to the overall community character and the cohesiveness of the cities? What is the overall character of each city?
- Would the proposed project result in adverse effects that would result in degradation of the community character of the entire cities or parts of the cities?
- Would the proposed project result in adverse effects that would contribute to the degradation of the existing cohesiveness of the cities?
- Would the proposed project result in beneficial effects that might positively affect the overall community character and/or the cohesiveness of the cities?

2.4.1 Community Character and Cohesion

2.4.1.1 Regulatory Setting

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

(FHWA), in its implementation of NEPA (23 USC 109[h]), directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

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

2.4.1.2 Affected Environment

Community cohesion is the degree to which residents have a sense of belonging to their neighborhood, their level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time (Caltrans, June 1997). The demographics provided within this assessment were obtained from a combination of sources, including the United States Census Bureau and SCAG.

Elements of community cohesion can be found in demographic data used to profile communities from the 2000 U.S. Census. Some specific indicators of community cohesion are listed below and are discussed in detail later in this chapter:

- Age: Elderly and stay-at-home parents tend to be more active in their community. They have time to become involved. The transit-dependent population is comprised of the population under age 18 and age 65 and older.
- Ethnicity: Ethnic homogeneity is associated with a higher degree of community cohesion.
- Household Size: Households of two or more people tend to correlate with a higher degree of community cohesion.
- Housing Tenure: Households that have been residents of a community for a longer period of time tend to correlate with a higher degree of community cohesion.

- Transit-Dependent Population: Residents who tend to walk or use public transportation for travel tend to correlate with a higher degree of community cohesion.

The study area for community impacts extends beyond the SR-91 alignment to include those areas that could potentially be directly and/or indirectly impacted and/or benefited by the proposed project. The study area includes four Census Tracts, which encompass the limits of the proposed project.

Census Tracts 218.26 and 218.24 are in the County of Orange. Census Tract 218.26 includes part of the City of Anaheim and is generally bounded by the Burlington Northern Santa Fe (BNSF) railroad to the north, the Santa Ana River to the south, San Bernardino County to the east, and North Weir Canyon Road to the west. Census Tract 218.24 includes parts of Yorba Linda and is bounded by Lost Trough Canyon Trail to the north, the BNSF railroad to the south, San Bernardino County to the east, and Via Lomos de Yorbo East to the west.

Census Tracts 419.04 and 419.07 are in the County of Riverside. Census Tract 419.04 includes parts of the City of Corona and the County of Riverside and is generally bounded by the Santa Ana River and SR-91 to the north, Green River Road and Palisades Drive to the south, Paso Grande to the east, and the County of Orange to the west. Census Tract 419.07 includes parts of the County of Riverside and is generally bounded by SR-91 to the north, SR-74 to the south, the City of Corona to the east, and the County of Orange to the west.

The United States Census Bureau reports that the County of Orange population totaled 1,420,386 persons in 1970 and doubled to 2,846,289 persons in 2000. The County of Riverside population totaled 459,074 persons in 1970 and more than tripled to 1,545,387 persons in 2000. SCAG projects that this growth will continue for the next two decades.

In the last decade, population growth in the City of Anaheim (23 percent) was more than the growth in the County of Orange (18 percent) as well as statewide (14 percent). Growth in the City of Yorba Linda (12 percent) was lower than both the County of Orange and the statewide rates. Over the last decade, growth in the City of Corona (64 percent) was double that in the County of Riverside (32 percent) and greater than four times the statewide growth (14 percent). The population in each study area census tract in 2000 is shown in Table 2.6.

Table 2.6 Population in the Study Area Census Tracts

Census Tract	Population 2000
218.24	2,905
218.26	2,569
419.04	4,623
419.07	1,706
Total	8,898

Source: United States Census Bureau, Census 2000.

Table 2.7 shows the distribution of the population by age within the study area counties, cities, and census tracts. As shown, the median ages for the Cities of Anaheim (30.3 years) and Corona (29.9 years) are approximately 10 percent lower than the counties and the State (all at approximately 33 years). Higher median age is often a characteristic of a more mature and affluent community. The City of Yorba Linda median age (37.4 years) was almost 14 percent higher than the county average (33 years). However, the percentages of population over the age of 64 in all three cities are lower than the percentages in both counties.

Table 2.7 Age Distribution

Jurisdiction	Percentage			
	Median Age	Population Less than 18 Years Old	Population 18 to 64 Years Old	Population Greater than 64 Years Old
County of Orange	33.3	27%	63%	10%
County of Riverside	33.1	30%	57%	13%
City of Anaheim	30.3	30%	62%	8%
City of Corona	29.9	31%	61%	6%
City of Yorba Linda	37.4	29%	63%	8%
Census Tract				
218.24	33.0	30%	66%	4%
218.26	31.6	27%	70%	3%
419.04	32.7	32%	61%	7%
419.07	33.7	28%	66%	6%

Source: United States Census Bureau, Census 2000.

The ethnic compositions of the study area counties, cities, and census tracts are shown in Table 2.8. The Cities of Anaheim and Corona have percentages of non-White residents that are comparable to or higher than the counties' averages (Orange County, 35.2 percent; Riverside County, 34.4 percent). In contrast, Yorba Linda has a predominantly white population (81.5 percent). For all five jurisdictions, the majority of the population is White, followed by Hispanic, Asian, and African American. The exception is Riverside County, which has a greater African American population compared to Asian. Tracts 419.04 and 419.07, both within the City of Corona, have a

Table 2.8 Ethnic Composition (2000)

Jurisdiction	Total Percentages[1]						
	White	African American	American Indian/ Native	Asian[2]	Hawaiian/ Pacific Islander	Hispanic	Other
County of Orange	64.8%	1.7%	0.7%	13.6%	0.3%	30.8%	14.8%
County of Riverside	65.6%	6.2%	1.2%	3.7%	0.3%	36.2%	18.7%
City of Anaheim	57.8%	2.7%	0.9%	12.0%	0.4%	46.8%	24.2%
City of Corona	62.0%	6.4%	0.9%	7.5%	0.3%	35.7%	17.5%
City of Yorba Linda	81.5%	1.2%	0.4%	11.1%	0.1%	10.3%	2.7%
Census Tract							
218.24	63.1%	2.2%	0.2%	25.8%	0.0%	11.2%	6.1%
218.26	78.6%	2.2%	0.2%	11.5%	0.2%	12.6%	4.2%
419.04	74.7%	2.3%	0.5%	4.2%	0.3%	27.8%	15.8%
419.07	77.7%	6.2%	0.3%	5.6%	0.8%	17.5%	7.2%

Source: United States Census Bureau, Census 1990 and Census 2000.

1 Percentages do not add to 100 percent because White, African American, American Indian/Native American, Hawaiian/Pacific Islander, and Other populations include persons identified with one ethnicity only; the Hispanic population overlaps with other ethnicities.

2 In 1990, the Asian population included the Hawaiian/Pacific Islander population; in 2000, the Asian population did not include the Hawaiian/Pacific Islander population.

fairly high percentage of Hispanic residents (nearly 28 percent and 18 percent, respectively).

Table 2.9 provides a summary of other demographic characteristics of the Cities of Anaheim, Corona, and Yorba Linda, the Counties of Orange and Riverside, and the State of California for 2000. Median household income in the City of Anaheim is comparable with the State average, but lower than the County of Orange average. The median household income is 88 percent higher in the City of Yorba Linda and 25 percent higher in the City of Corona than the State average. The proportion of persons living in poverty in the City of Anaheim (10.4 percent) was comparable to the statewide average (10.6 percent), but higher than the County of Orange average (7.0 percent). The proportions of persons living in poverty in the Cities of Corona (6.0 percent) and Yorba Linda (2.5 percent) were both lower than the counties and statewide averages. Fewer residents in the City of Anaheim and more residents in the Cities of Corona and Yorba Linda hold high school and college diplomas compared to the State and county averages.

The 2000 housing profiles for the study area cities and counties are shown in Table 2.10.

Table 2.9 2000 Local, Regional, and State Demographic Summaries

Characteristic	Study Area Cities			Counties		State
	Anaheim	Corona	Yorba Linda	Orange County	Riverside County	California
Population	328,014	124,966	58,918	2,846,289	1,545,387	12,214,549
Median household income	$47,122	$59,615	$89,593	$58,820	$42,887	$47,493
Families below poverty[1]	10.4%	6.0%	2.5%	7.0%	10.7%	10.6%
High School Graduates (over age 25)	69.3%	80.6%	93.4%	79.5%	75.0%	77%
College Graduates (over age 25)	19.6%	22.0%	41.5%	30.8%	16.6%	27%
Population > 65	8.2%	5.8%	7.7%	9.9%	12.7%	8.1%
Persons per household	3.34	3.29	3.05	3.00	2.98	2.87
Study Area Census Tracts						
	218.24	**218.26**	**419.04**	**419.07**		
Population	2905	2569	4623	1706		
Median household income	$107,584	$66,757	$66,835	$88,716		
Families below poverty[1]	1.1%	3.9%	1.6%	0.0%		
High School Graduates (over age 25)	96.2%	92.2%	84%	91%		
College Graduates (over age 25)	47%	38.1%	22.8%	35.3%		
Population > 65	4%	3%	7%	6%		
Persons per household	3.39	2.48	3.25	3.09		

Source: United States Census Bureau, Census 2000.

[1] Poverty level is based on the size of a family and the number of children under 18. For example, in 1999, the poverty threshold was $17,029 for a family of four.

Table 2.10 2000 Housing Profiles

Characteristic	Study Area Cities			Regional	
	Anaheim	Corona	Yorba Linda	Orange County	Riverside County
Total Housing Units	99,719	39,271	19,567	969,484	584,674
Housing Units Occupied	97%	96.4%	98.4%	96.5%	86.6%
Owner-Occupied Housing Units	50%	67.5%	84.7%	61.4%	68.9%
Renter-Occupied Housing Units	50%	32.5%	13.3%	38.6%	31.1%
Housing Affordability Index	N/A	N/A	N/A	28%	48%
Median Home Price	213,800	194,400	346,100	270,400	138,560
Study Area Census Tracts					
	218.24	**218.26**	**419.04**	**419.07**	
Total Housing Units	863	1087	1468	654	
Housing Units Occupied	99%	95%	97%	84%	
Owner-Occupied Housing Units	97%	53.5%	91%	93.5%	
Renter-Occupied Housing Units	3%	46.5%	9%	6.5%	

Source: United States Census Bureau, Census 2000, www.scag.ca.gov/economy.

In 2000, 48 percent of Riverside County residents could afford the median-priced home based on the county's Housing Affordability Index (HAI), which is the highest in Southern California. In comparison, only 28 percent of Orange County residents could afford the median-priced home because Orange County has the lowest HAI in Southern California. The median home price in the City of Anaheim ($213,800) was lower than in Orange County ($270,400). The median home price in Yorba Linda ($346,000) was higher than in Orange County. The median home price in the City of

Corona ($194,400) was higher than in Riverside County ($131,700). The City of Anaheim has a lower percentage of owner-occupied housing units (50 percent) than the Orange County average (61.4 percent). The City of Yorba Linda (84.7 percent) has a much higher rate of owner-occupied units than Orange County (61.4 percent). The City of Corona has a comparable percentage (67.5 percent) of owner-occupied housing units compared to Riverside County (68.9 percent).

As indicated above, the Cities of Anaheim and Corona are ethnically diverse, while the City of Yorba Linda has a high percentage of white residents. However, the ethnic composition of the study area census tracts (shown in Table 2.8) indicates that the White population is the majority, comprising on average nearly 74 percent of the population. In Tract 419.04, in the City of Corona, the Hispanic population comprises nearly one-third of the total population. The three cities do not have high percentages of elderly residents compared to the two county averages. As shown in Table 2.7, the population over age 64 in the study area census tracts averages 5 percent, only slightly below the average for the study area cities. The home ownership rate is well below the Orange County average in the City of Anaheim and well above the Orange County average in the City of Yorba Linda. However, the home ownership rates in the study area census tracts (shown in Table 2.10) are substantially higher than both the regional average and the study area communities. With the exception of Tract 218.26, the average is nearly 94 percent, compared with 67 percent in the study area communities and 65 percent in the regional areas.

As shown later in Table 2.11, the study area census tracts have a very low percent of transit-dependent persons. Tracts 218.24 and 218.26 report no transit-dependent persons, while Tracts 419.07 and 419.04 report 1.7 percent transit-dependent population. Transit-dependent populations are discussed in further detail in Section 2.4.3, Environmental Justice.

As shown earlier on Figure 2.3, the General Plan land uses adjacent to the project segment are predominantly open space and recreation uses, including Green River Golf Club, Featherly Regional Park, Chino Hills State Park, and Cleveland National Forest. On the west end of the project segment, developed areas in the Cities of Yorba Linda and Anaheim include residential, commercial, and industrial uses. On the east end of the project segment in the City of Corona, there are developed areas with residential, commercial, and industrial uses. Based on the demographic data provided earlier, each of the three cities likely has an average sense of community cohesion. However, there is likely little community cohesion across the SR-91, which, with the

Santa Ana River, effectively serves as a physical barrier separating the Cities of Yorba Linda and Anaheim. Furthermore, along the project segment of SR-91, no arterial roads provide access across SR-91. As a result, there is not a strong sense of community cohesion between the areas north and south of the project segment of SR-91.

Based on the indicators of community cohesion, there is an average degree of community cohesion within the three study area cities. While the percentage of persons per household in the study area census tracts are higher than the city and county averages, and the populations are fairly ethnically homogeneous with high degrees of owner-occupied housing, the median age of the populations and the low percentage of transit-dependent populations do not indicate a high level of community cohesion.

In summary, it is expected that there is an average degree of community cohesion within the four study census tracts, diminishing at the regional and study area cities level, based on these demographic characteristics.

2.4.1.3 Environmental Consequences

***Build Alternative* (Alternative 2)**

The project segment of SR-91 traverses three cities and two counties. The character and cohesion of these communities are defined by the land uses, services, facilities, and other features within these areas and not by the presence of SR-91. The project proposes one additional eastbound lane on the existing SR-91. The project would not require the full acquisition of any residential or nonresidential land uses and would not acquire or adversely affect public services or facilities in these jurisdictions. The proposed project would not physically divide an established community. Therefore, the construction and operation of the proposed project would not adversely affect the character or cohesion of the Cities of Yorba Linda, Anaheim, and Corona or the Counties of Riverside and Orange. In addition, other planned developments, such as the Mountain Park development, would not be affected.

Construction of the proposed project would require the temporary weekend and night time closures of the SR-91/Green River Road eastbound on- and off-ramps and the SR-91 eastbound to SR-71 northbound connector; however, the improvements at these ramps would not be constructed at the same time. Development of a Traffic Management Plan (TMP), described in detail in Section 2.6, would be coordinated with local jurisdictions and would provide alternative access to SR-91 during the

temporary closures. Therefore, the temporary ramp closures are not anticipated to adversely affect community cohesion.

***No Build Alternative* (Alternative 1)**

The No Build Alternative does not propose any improvements and therefore would not result in any community character and cohesion impacts.

2.4.1.4 Avoidance, Minimization, and/or Mitigation Measures

There are no project impacts associated with community character and cohesion; therefore, no avoidance, minimization, or compensation measures are required.

2.4.2 Relocations

2.4.2.1 Regulatory Setting

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

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Refer to Appendix C for the Caltrans Title VI Policy Statement.

2.4.2.2 Affected Environment

The affected environment in the project area was described earlier in Section 2.4.1, Community Character and Cohesion.

2.4.2.3 Environmental Consequences

Build Alternative (Alternative 2)

Alternative 2 would not require the acquisition of any residential or nonresidential structures. The Build Alternative would require the acquisition of partial parcels, but would not affect any structures on those properties. Specifically, Alternative 2 would require shifting a private access road for a property south of SR-91 to accommodate the additional eastbound lane. This property has an alternative access route that would be available during the limited period when the existing access road is closed and the new access road is being constructed. No temporary or permanent relocation of residences or businesses would be required for the proposed project. All partial

acquisitions would be conducted in compliance with the Uniform Act. In summary, the proposed project would not result in relocation impacts.

No Build Alternative (Alternative 1)

The No Build Alternative would not result in the acquisition of any property and, therefore, would not result in relocation impacts.

2.4.2.4 Avoidance, Minimization, and/or Mitigation Measures

All property acquisition for the proposed project would be conducted in compliance with the Uniform Act. No other avoidance, minimization, or compensation measures are required.

2.4.3 Environmental Justice

2.4.3.1 Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the United States Department of Health and Human Services (DHHS) poverty guidelines. For 2006, this was $20,000 for a family of four (Federal Register 2006 Vol. 71, No. 15, January 24, 2006, pp. 3848-3849).

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project, which requires that no person because of race, color, religion, national origin, sex, age, or handicap be excluded from participation in, denied benefits of, or be subjected to discrimination by any federal aid activity. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which is provided in Appendix C. The Americans with Disabilities Act of 1990 (ADA) extends the protection of the 1964 Civil Rights Act to the disabled, prohibiting discrimination in public accommodations, transportation, and other services.

2.4.3.2 Affected Environment

The environmental justice analysis was conducted using census tract information from the 2000 United States Census for the census tracts discussed earlier in Section 2.4.1, Community Character and Cohesion. This analysis provides a

comparison of the following measures used to evaluate the potential impacts of the project related to environmental justice:

- Percentage of Non-White residents
- Percentage of Hispanic residents; the United States Census Bureau considers Hispanic or Latino ethnicity distinct from racial background
- Percentage of population below poverty level
- Median household income
- Population over 65 years of age
- Transit-dependent persons

The composition of minority and low-income populations in the study area census tracts and for the Cities of Anaheim, Corona, and Yorba Linda and the Counties of Orange and Riverside are shown in Table 2.11.

Table 2.11 Environmental Justice Demographics in 2000

Geographic Area	% Non-White Residents	% Hispanic Residents	% Populations below Poverty Level[1]	Median Household Income	% Population > 65	% Transit-Dependent Persons
State of California	40.5	32.4	11	$47,493	10.6	5.1
County of Orange	35.2	30.8	7.0	$58,820	9.9	2.8
City of Anaheim	42.2	46.8	10.4	$47,122	8.2	4.6
Census Tract 218.24 (Anaheim)	36.9	11.2	2.1	$107,584	4.1	0
City of Yorba Linda	18.5	10.3	2.5	$89,593	7.7	0.5
Census Tract 218.26 (Yorba Linda)	21.4	12.6	3.5	$66,757	3.0	0
County of Riverside	34.4	36.2	10.7	$42,887	12.7	1.4
Census Tract 419.07 (Riverside County)	22.3	17.5	1.1	$88,716	6.4	1.7
City of Corona	38	35.7	6.0	$59,615	5.8	1.2
Census Tract 419.04 (Corona)	25.3	27.8	2.6	$66,835	7.2	1.7

Source: United States Census Bureau, Census 2000.

[1] Poverty level is based on the size of a family and the number of children under 18. For example, in 1999, the poverty threshold was $17,029 for a family of four.

As shown in Table 2.11, the study area census tracts have percentages of Non-White and Hispanic residents comparable to or considerably lower than the averages of the city and/or county in which they are located.

As shown in Table 2.11, all the study area census tracts have a comparable or lower percentage of persons living in poverty compared to the cities and counties. Three of the four census tracts have a higher median household income than the city and/or county in which they are located. Census Tract 218.26 has a lower median

household income compared to the City of Yorba Linda. However, the median household income ($66,757) in this census tract is higher than the California median ($47,493).

One of the four census tracts has a higher percentage of elderly residences than the cities or counties in which it is located. The two census tracts in Orange County show no transit-dependent persons. However, the percentage of transit-dependent populations in the two census tracts in Riverside County is higher (1.7 percent) than in the City of Corona and in Riverside County.

In summary, as shown in Table 2.11, the residents in the four study area census tracts do not represent an unusually high level of minority or low-income populations. Further, the demographic data do not appear to indicate that there are any concentrations of minority, low-income, or other environmental justice populations in the study area census tracts.

2.4.3.3 Environmental Consequences

Build Alternative (Alternative 2)

Permanent Impacts

The Build Alternative would enhance mobility and improve connections for minority and low-income populations in the Cities of Anaheim, Corona, and Yorba Linda and in the surrounding Counties of Orange and Riverside. Alternative 2 would not displace any residents. Alternative 2 would not displace any residential or nonresidential uses and would not divide any existing communities. Permanent visual impacts would potentially occur from retaining walls and sound walls that are proposed as part of the project. However, the shapes, textures, and colors of the sound walls and retaining walls would be harmonious with the existing natural formations along the project segment of SR-91 as required under Mitigation Measures V-1 and V-2 (refer to Section 2.7, Visual/Aesthetics). Sound walls proposed adjacent to residential uses would be designed to use a clear product to maintain current views from those residences (Mitigation Measure V-3). Likewise, visual impacts related to landscaping disturbance would be mitigated through compliance with the applicable corridor master plan as required by Mitigation Measures V-4 and V-5 (Section 2.7).

Temporary Impacts

As discussed in Section 2.4.1.3, the Green River Road ramps would be temporarily closed during construction, which would require nearby residents and other users to utilize alternative access described in Section 2.6. These impacts would be temporary

and are not considered adverse. Similarily, temporary visual impacts would occur during construction of the proposed project, and these impacts would cease following completion of the project

In summary, Alternative 2 would not result in disproportionately high or adverse permanent or temporary impacts on minority or low-income populations, neighborhoods, or communities.

No Build Alternative (Alternative 1)

The No Build Alternative would not result in property acquisition, community disruption, or other changes that could adversely affect populations. The No Build Alternative would not result in adverse permanent or temporary environmental impacts.

2.4.3.4 Avoidance, Minimization, and/or Mitigation Measures

The proposed project would not result in adverse impacts related to environmental justice. Therefore, no avoidance, minimization, or compensation measures are required.

2.5 Utilities/Emergency Services

This analysis of the potential impacts of the proposed project was based on a review of existing utility and service providers and facilities in and immediately adjacent to the project disturbance limits.

2.5.1 Affected Environment

The following utility facilities either cross the project segment of SR-91 or are located within the facility's right-of-way:

- 400 millimeter (mm) (15.75 inch [in]) underground crude oil pipeline (crosses SR-91 along a north/south axis, east of the Riverside County/Orange County boundary)
- 80 mm (3.15 in) underground gas pipeline (crosses SR-91 along a north/south axis, adjacent to the Burlington Northern Santa Fe (BNSF) railroad undercrossing, east of Green River Road)
- 2,770 mm (109.05 in) underground water line (crosses SR-91 along a north/south axis, adjacent to the BNSF railroad undercrossing, east of Green River Road)
- Underground telephone line (crosses SR-91 along a north/south axis, adjacent to the BNSF railroad undercrossing, east of Green River Road)
- Underground fiber optic backbone line (parallels the south side of SR-91). As discussed in the Draft Project Report, this fiber optic line serves the following purposes:
    - Collection and consolidation of communication signals for Intelligent Transportation Systems (ITS) field elements, such as traffic census stations and closed circuit television (CCTV) cameras.
    - Provision of high-bandwidth interconnection between the Caltrans Districts 8 and 12 Transportation Management Centers (TMC).

The nearest police and fire stations to the project site are listed in Table 2.12. Emergency services providers in Anaheim and Yorba Linda access areas to the north and south of SR-91 via local arterial and secondary roads. In addition, emergency services providers in these two cities can cross the project segment of SR-91 at Gypsum Canyon Road in the event that emergency services personnel and/or equipment are needed on the other side of the freeway from the stations at which those services are based. Emergency services providers in Orange County can, if

Table 2.12_ Local Fire and Police Stations

Public Service Department	Service Area	Station and Address
Anaheim Police Department	Anaheim	East District 8201 E. Santa Ana Canyon Road Anaheim, CA
Anaheim Fire Department	Anaheim	East District Weir Canyon Station 10 8270 E. Monte Vista Anaheim, CA
Brea Police Department	Yorba Linda	1 Civic Center Circle Brea, CA 92821
Orange County Fire Authority	Yorba Linda	Station 53 25415 La Palma Avenue Yorba Linda, CA 92887
Corona Police Department	Corona	849 W. Sixth Street Corona, CA 92882
Corona Fire Department	Corona	Station 5 1200 Canyon Crest Corona, CA 92882
Riverside County Sheriff	Riverside County	Norco Sheriff Department 2870 Clark Avenue Norco, CA 92860
Riverside County Fire Department	Riverside County	Northwest Division Station 14 3770 Blair Street Corona, CA 92879
San Bernardino County Fire Department	San Bernardino County	2413 North Euclid Avenue Upland, CA 91783
San Bernardino County Sheriff	San Bernardino County	13843 Peyton Drive Chino Hills, CA 91709

Source: LSA Associates, Inc. (2007).

requested under mutual aid agreements, travel on SR-91 to reach locations in San Bernardino and Riverside Counties.

Emergency services providers in San Bernardino County (north of SR-91) would respond from stations located in San Bernardino and would not necessarily need to use SR-91 to access emergency locations. However, those emergency services providers could use SR-91 and SR-71 in the event personnel/equipment are arriving from more distant stations or are responding to requests for service in Orange County under mutual aid agreements.

Emergency services providers in Riverside County (north and south of SR-91) would respond from stations located in the Cities of Corona and Norco, as shown in Table 2.12. Those responders would not necessarily need to use SR-91 to access emergency locations. However, those emergency services providers could use SR-91 from more eastern locations in the City of Corona and Riverside County in the event personnel/equipment are coming from more distant stations or are responding to requests for service in Orange County under mutual aid agreements.

2.5.2 Environmental Consequences

2.5.2.1 Build Alternative (Alternative 2)

The existing underground fiber optic backbone line would be relocated as part of the proposed project. Construction of new conduit for the fiber optic line would be completed prior to disconnection of the existing line. There would be no disruption to fiber optic service during project construction.

The OCTA-owned vaults and cabinets that monitor the SR-91 Express Lanes would also be relocated within the project limits as part of Alternative 2. These facilities may be inoperative for short periods of time.

Preliminary review of as-built plans for the crude oil pipeline indicated that the proposed project would not conflict with this utility line. However, as discussed in the Draft Project Report, test hole exploring (potholing) is recommended during the Plans, Specifications, and Estimates (final design) phase to confirm that there would be no conflict. If relocation of this pipeline is required, it can be accommodated within the project limits of grading. No other utilities would require relocation under Alternative 2.

The preliminary Traffic Management Plan (TMP) identifies alternative routes that may be used to accommodate traffic diversion resulting from the following temporary closures during construction of the proposed project:

- Eastbound SR-91 off-ramp to Green River Road
- Eastbound SR-91 connector to northbound SR-71
- Green River Road on-ramp to eastbound SR-91
- Potential SR-91 mainline lane closures at 0.8 km (0.5 mi) increments

Construction of the proposed project would require the temporary weekend and night time closures of the SR-91/Green River Road eastbound on- and off-ramps and the SR-91 eastbound to SR-71 northbound connector; however, the improvements at these ramps would not be constructed at the same time. Emergency services providers in the cities and counties along the project segment of SR-91 do not need to use SR-91 to access most of their service areas. It is possible that SR-91 is used by emergency services providers if they are arriving from more distant stations and/or if they are responding to mutual aid requests. In the event that emergency services providers use the project segment of SR-91, construction of the project and the temporary closure of the eastbound SR-91 to northbound SR-71 connector could potentially delay their responses. However, with the exception of Orange County

responders destined for San Bernardino County locations via SR-91 and SR-71, it is not anticipated that emergency services providers would be adversely affected by the temporary closure of that connector. Emergency services providers coming from Orange County in response to mutual aid requests would be adversely affected by the temporary closure of this connector. However, the TMP described above, which would be coordinated with area emergency services providers, would provide alternative access to the north side of SR-91 during the temporary closure of this connector. Therefore, the temporary closure of the SR-91 to SR-71 connector is not anticipated to adversely affect emergency services providers.

Existing developed areas that could be affected by the temporary closures include residential and commercial uses along the south side of SR-91, near the Green River Road interchange in the City of Corona. These developments are serviced by Corona Fire Station No. 5 (1200 Canyon Crest) and the Corona Police Department (849 W. Sixth Street). To assess the impact associated with the SR-91/Green River Road eastbound on- and off-ramps closure, the follow alternate routes were mapped for Corona Fire Station No. 5 (1200 Canyon Crest) and the Corona Police Department (849 W. Sixth Street):

- Route from the fire and police stations to an address on the south side of SR-91, near the Green River Road interchange, assuming no closure of the eastbound ramps.
- An alternate route assuming closure of these ramps. The route would exit SR-91 at Serfas Club Drive and then proceed westbound on Green River Road.

The alternative route during ramp closures at SR-91/Green River Road would add 0.8 km (0.5 mi) of travel distance to the emergency routes. The alternative route would result in emergency vehicles exiting SR-91 earlier than the current route, which without mitigation could adversely impact emergency services by potentially increasing response times, depending on prevailing speeds on the freeway.

2.5.2.2 No Build Alternative (Alternative 1)

The No Build Alternative does not propose any improvements and therefore would not result in any impacts to utilities or emergency services. However, continued congestion on the project segment of SR-91 under the No Build Alternative would potentially result in increased delays for emergency services providers in the future.

2.5.2.3 Avoidance, Minimization, and/or Mitigation Measures

Temporary construction-related impacts on emergency service providers would be addressed through a TMP implemented during project construction to minimize localized congestion and travel delays during construction. Refer to Section 2.6.4, Avoidance, Minimization, and Compensation Measures, for Measure T-1, which describes the TMP in detail.

2.6 Traffic and Transportation

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). (Note: recreational trails, such as equestrian trails, are covered under the Parks and Recreation section of the document.) The following information is based on the *Final Traffic Analysis Report* (Meyer, Mohaddes Associates, June 2007).

2.6.1 Regulatory Setting

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

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

2.6.2 Affected Environment

2.6.2.1 Existing SR-91 Lane Configuration and Chokepoint

Table 2.13 describes the existing lane configuration for SR-91 eastbound from SR-241 to SR-71. The proposed project would improve an existing chokepoint (i.e., a location where capacity issues create operational problems and result in traffic congestion). This chokepoint is on SR-91 eastbound at Coal Canyon Road, where the eastbound right lane is dropped, resulting in congestion for traffic entering SR-91 from Gypsum Canyon Road and the SR-241 connector.

Table 2.13 Existing SR-91 Lane Configuration

Eastbound SR-91 Segment	Lane Configuration
From the northbound SR-241 connector to Coal Canyon Road	5 general purpose lanes plus 2 toll lanes
From Coal Canyon Road to approximately the Orange/Riverside County line	4 general purpose lanes plus 2 toll lanes
From approximately the Orange/Riverside County line to approximately the Green River Road on-ramp	4 general purpose lanes plus 2 HOV lanes
From approximately Green River Road on-ramp to just east of the northbound SR-71 connector	5 general purpose lanes plus 1 HOV lane

Source: *Final Traffic Analysis Report* (Meyer, Mohaddes Associates, June 2007).

2.6.2.2 Existing Levels of Service

Level of service (LOS) describes the efficiency of traffic flow and how such conditions are perceived by those persons traveling in the traffic stream and accounts for such variables such as speed and travel time, freedom to maneuver, traffic interruptions, traveler comfort and convenience, and safety. LOS ranges from LOS A (free traffic flow with low volumes and high speeds resulting in low densities) to LOS F (traffic volumes exceed capacity and result in forced flow operations at low speeds resulting in high densities). Figure 1-3, provided earlier, is a graphic depiction of relative levels of congestion and speed associated with each LOS.

Table 2.14 summarizes the existing peak-hour LOS for freeway segments and ramp junctions along the project segment of SR-91. As shown, the chokepoint described above contributes to the p.m. peak-hour congestion at the Green River Road on-ramp merge, on the SR-91 freeway segment between Green River Road and SR-71, and at the eastbound-to-northbound SR-91 connector to SR-71.

Table 2.14 Existing Levels of Service (LOS)

Location on EB SR-91	Peak Hour	Year 2005			
		Number of Lanes	Peak-Hour Volume	Density (pc/km/h)	LOS
Northbound SR-241 connector (merge)	AM	1	1,970	13.4	C
	PM		2,120	13.9	C
Northbound SR-241 connector to Coal Canyon Road	AM	5	8,480	17.2	D
	PM		9,100	19.0	D
Coal Canyon Road to Green River Road	AM	4	7,940	22.3	E
	PM		8,080	23.2	E
Green River Road off-ramp (diverge)	AM	1	225	23.3	E
	PM		1,890	29.3	F
Green River Road on-ramp (merge)	AM	1	245	10.9	B
	PM		215	>45	F*
Green River Road to SR-71	AM	5	8,240	16.6	D
	PM		7,810	>45	F*
Connector to northbound SR-71(diverge)	AM	1	1,020	22.3	E
	PM		1,450	>45	F*

Source: *Final Traffic Analysis Report* (Meyer, Mohaddes Associates, June 2007).
pc/km/hr = passenger cars per kilometer per hour.
*Note: The LOS indicated for ramp junctions and the freeway segment between the Green River Road on-ramp and SR-71 takes into account the bottleneck on eastbound SR-91 and northbound SR-71 downstream of the northbound SR-71 connector ramp.

2.6.2.3 Traffic Accidents

There were 1,200 accidents and 301 injury accidents in the project area from 1999 to 2003. Rear-end accidents were the most common, followed by sideswipe accidents.

2.6.2.4 Bicycle Facilities

In the vicinity of the project segment of SR-91, there is an existing Class I bicycle trail along the Santa Ana River (Santa Ana River Trail) and Class II bicycle facilities on Green River Road and Palisades Drive in the City of Corona.

2.6.3 Environmental Consequences

2.6.3.1 Build Alternative (Alternative 2)

Table 2.15 summarizes the peak-hour LOS for freeway segments and ramp junctions for existing and 2010 and 2030 with and without project conditions. Alternative 2 would alleviate congestion associated with an existing chokepoint on eastbound SR-91 and, once operational, would have a beneficial impact on freeway and ramp operations. Under 2010 conditions, the proposed project would improve LOS on the following mainline and connector facilities, compared to existing and 2010 without project conditions:

- SR-91 mainline freeway from Coal Canyon Road to Green River Road, a.m. and p.m. peak hours
- Green River Road off-ramp (diverge), a.m. peak hour only
- Green River Road on-ramp (merge), p.m. peak hour only
- SR-91 mainline freeway from Green River Road to SR-71, p.m. peak hour only

Based on forecasted traffic conditions, traffic is anticipated to operate at LOS F along eastbound SR-91 within the project area by 2030. However, the a.m. and p.m. congested periods and related traffic delays should be substantially less than if the no build alternative is selected. Based on preliminary analysis, and assuming linear growth of traffic volumes between 2010 and 2030, the mainline segments within project limits would reach LOS F at year 2027 for the a.m. peak hour and 2024 for the p.m. peak hour. Until that time, even with the growth in traffic the mainline segments analyzed with the proposed project would operate at LOS E or better during both peak hours, which would be similar to existing conditions in the a.m. peak hour, but an improvement in LOS would be achieved during the P.M. peak hour. As previously mentioned, the p.m. peak hour is LOS F in the existing condition. The mainline segments would benefit from the proposed project for the next 15 to 20 years with the increased capacity.

Table 2.15 Level of Service Summary for 2005, 2010, and 2030

Location on EB SR-91	Peak Hour	Year 2005				Year 2010 without Project				Year 2010 with Project			
		Number of Lanes	Volume	Density (pc/km/h)	LOS	Number of Lanes	Volume	Density (pc/km/h)	LOS	Number of Lanes	Volume	Density (pc/km/h)	LOS
Northbound SR-241 connector (merge)	AM	1	1,970	13.4	C	1	2,360	14.1	C	1	2,360	14.1	C
	PM		2,120	13.9	C		2,540	14.6	C		2,540	14.6	C
Northbound SR-241 connector to Coal Canyon Road	AM	5	8,480	17.2	D	5	9,010	18.7	D	5	9,010	18.7	D
	PM		9,100	19.0	D		9,650	21.1	D		9,650	21.1	D
Coal Canyon Road to Green River Road	AM	4	7,940	22.3	E	4	8,440	25.9	E	5	8,440	17.1	D
	PM		8,080	23.2	E		8,590	27.2	E		8,590	17.5	D
Green River Road off-ramp (diverge)	AM	1	225	23.3	E	1	235	24.7	F	1	235	20.2	D
	PM		1,890	29.3	F		1,980	30.9	F		1,980	26.4	F
Green River Road on-ramp (merge)	AM	1	245	10.9	B	1	255	17.3	F	1	255	14.1	C
	PM		215	>45	F[1]		225	16.8	F		225	13.6	C
Green River Road to SR-71	AM	5	8,240	16.6	D	5	10,570	26.0	E	6	10,570	18.1	D
	PM		7,810	>45	F[1]		10,140	25.0	E		10,140	18.5	D
Connector to northbound SR-71 (diverge)	AM	1	1,020	22.3	E	1	710	26.1	F	1	710	22.4	E
	PM		1,450	>45	F[1]		2,010	29.7	F		2,010	26.1	F

Table 2.15 Level of Service Summary for 2005, 2010, and 2030 (continued)

Location on EB SR-91	Peak Hour	Year 2030 without Project				Year 2030 with Project			
		Number of Lanes	Volume	Density (pc/km/h)	LOS	Number of Lanes	Volume	Density (pc/km/h)	LOS
Northbound SR-241 connector (merge)	AM	1	4,640	17.4	F	1	4,820	17.6	F
	PM		5,000	18.0	F		5,170	18.1	F
Northbound SR-241 connector to Coal Canyon Road	AM	5	11,520	>45	F	5	12,050	>45	F
	PM		11,780	>45	F		12,340	>45	F
Coal Canyon Road to Green River Road	AM	4	10,840	>45	F	5	11,330	>45	F
	PM		11,040	>45	F		11,530	>45	F
Green River Road off-ramp (diverge)	AM	1	290	31.2	F	1	290	26.5	F
	PM		2,360	38.7	F		2,400	34.0	F
Green River Road on-ramp (merge)	AM	1	300	17.6	F	1	330	15.1	F
	PM		270	17.8	F		290	15.3	F
Green River Road to SR-71	AM	5	10,900	>45	F	6	11,410	20.5	D
	PM		10,960	>45	F		11,490	22.2	F[2]
Connector to northbound SR-71 (diverge)	AM	1	2,070	31.5	F	1	2,310	29.4	F
	PM		3,190	35.5	F		3,280	32.9	F

Source: *Final Traffic Analysis Report for Project Report (PR) and Environmental Document (ED)* (Meyer, Mohaddes Associates, June 2007).
Notes: pc/km/h = passenger cars per kilometer per hour

[1] The LOS indicated for ramp junctions and the freeway segment between Green River Road and SR-71 takes into account the chokepoint locations on eastbound SR-91 and northbound SR-71 downstream of the northbound SR-71 connector. If these chokepoints did not exist, the calculated LOS for the EB 91/ Green River Road on-ramp merge, the eastbound SR-91 freeway segment in this area, and the eastbound 91/SR-71 connector diverge would be B, D, and E, respectively.

[2] The eastbound SR-91 between Green River Road and the connector to northbound SR-71 is anticipated to operate at LOS F if the general purpose and HOV lanes are combined (i.e., excess demand for the HOV lane would flow into the general purpose lane, creating an average traffic demand of 2,030 veh/ln/hr).

Under 2030 conditions, all ramps and mainline lanes would be characterized by congested LOS F conditions during both peak hours, both with and without the proposed project. However, the proposed project would be beneficial in terms of weaving, merge/diverge, and vehicle hours traveled (VHT). These benefits of the proposed project are summarized in Tables 2.16 through 2.18.

The effects of the SR-91 project were evaluated based on improvements in:

- VHT: This identifies the number of hours traveled on a specific segment of freeway.
- Merge/diverge density: This identifies the numbers of vehicles merging onto or exiting (diverging) at freeway ramp terminals and mainline locations.
- Weaving density: This identifies the numbers of vehicles crossing two or more traffic streams along a specific highway segment without traffic control devices.

As described in these tables, the proposed project would improve VHT, merge/ diverge density, and weaving density under 2030 conditions compared to the No Build Alternative. The proposed project would not eliminate congested conditions during the peak traffic hours in the project area through 2030; however, the improvements would reduce the vehicle density and delays on this segment of eastbound SR-91.

With respect to accident risk, the proposed project would widen all eastbound lanes and shoulders to standard widths and would reduce congestion, improve merging and diverging between SR-91 and SR-241. It is anticipated that these improvements would reduce the risk of traffic accidents, especially rear-end and sideswipe accidents associated with merge and weave operations. The standard lane widths and shoulders would further enhance safety conditions in the project area.

During construction, the proposed project could result in a temporary adverse impact to traffic circulation due to traffic diversions resulting from ramp closures and temporary lane closures on SR-91. Ramp closures would be limited to weekends and night time only. The proposed project would be constructed in stages to minimize disruptions due to closures. For example, the closure of the Green River Road eastbound on-ramp to SR-91 eastbound would not take place concurrently with the closure of the SR-91 eastbound to SR-71 northbound connector. This staging would reduce the volume of diverted traffic at the SR-91/Serfas Club Drive interchange.

Table 2.16 Vehicle Hours Traveled Analysis Comparison

SR-91 EB Freeway Segments	Peak Hour	Year 2030 without Project			Year 2030 with Project			VHT Improvement	
		Flow pc/h/ln	VMT	VHT	Flow pc/h/ln	VMT	VHT	VHT Change	Percentage of Improvement
From northbound SR-241 connector to Coal Canyon Road	AM	2,498	5,046	144	2,613	5,278	151	-7	N/A[1]
	PM	2,554	5,159	147	2,676	5,406	154	-7	N/A[1]
Coal Canyon Road to Green River Road	AM	2,938	5,847	167	2,457	4,889	140	27	16%
	PM	2,992	5,954	170	2,500	4,975	142	28	16%
Green River Road to SR-71	AM	2,364	2,506	72	2,062	2,186	62	9	13%
	PM	2,377	2,520	72	2,076	2,201	63	9	13%

Source: *Final Traffic Analysis Report for Project Report (PR) and Environmental Document (ED)* (Meyer, Mohaddes Associates, June 2007).
Notes: VMT = Vehicles Mile Traveled; VHT = Vehicle Hours Traveled; pc/h/ln = passenger cars per hour per lane
[1] No improvements are proposed along this segment of SR-91.

Table 2.17 Ramp Merge/Diverge Analysis Comparison

Location along SR-91	Peak Hour	Year 2030 without Project			Year 2030 with Project			Density Improvement	
		Volume	Density (pc/km/h)	LOS	Volume	Density (pc/km/h)	LOS	Density Difference	Percentage of Improvement
Green River Road off-ramp (diverge)	AM	290	31.2	F	290	26.5	F	4.7	18%
	PM	2,360	38.7	F	2,400	34.0	F	4.7	14%
Green River Road on-ramp (merge)	AM	300	17.6	F	330	15.1	F	2.5	17%
	PM	270	17.8	F	290	15.3	F	2.5	16%
Northbound SR-241 connector (merge)	AM	4,640	17.4	F	4,820	17.6	F	-0.2	N/A[1]
	PM	5,000	18.0	F	5,170	18.1	F	-0.1	N/A[1]
Connector to northbound SR-71(diverge)	AM	2,070	31.5	F	2,310	29.4	F	2.1	7%
	PM	3,190	35.5	F	3,280	32.9	F	2.6	8%

Source: *Final Traffic Analysis Report for Project Report (PR) and Environmental Document (ED)* (Meyer, Mohaddes Associates, June 2007).
Notes: pc/km/h = passenger cars per kilometer per mile; LOS = Level of Service
[1] No improvements are proposed along this segment of SR-91.

Table 2.18 Weaving Analysis Comparison

Merging/Diverging Location along SR-91	Peak Hour	Year 2030 without Project			Year 2030 with Project			Density Improvement	
		No. of Lanes	Density (pc/km/h)	LOS	No. of Lanes	Density (pc/km/h)	LOS	Density Difference	Percentage of Improvement
Green River Road on-ramp to SR-71 (merge)	AM	5	36.9	F	6[1]	34.7	F	2.2	6%
	PM		44.9	F		41.3	F	3.6	8%

Source: *Final Traffic Analysis Report for Project Report (PR) and Environmental Document (ED)* (Meyer, Mohaddes Associates, June 2007).
[1] An average per-lane volume was assumed using the future volume forecasts; pc/km/h = passenger cars per kilometer per mile; LOS = Level of Service

Pedestrian, transit, or other types of facilities are not allowed within the project area. Therefore, the Americans with Disabilities Act (ADA) Standards for Accessible Design (28 CFR Part 36) do not apply. Outreach would be conducted as part of the Traffic Management Plan (TMP) described below in Measure T-1.

The proposed ramp closures would not interrupt bicycle access along the Santa Ana River Trail, or at Green River Road and Palisades Drive in the City of Corona. Therefore, no impacts to bicycle facilities would occur.

2.6.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not provide any road improvements on the project segment of SR-91. As a result, traffic congestion would continue to increase along SR-91. LOS would continue to deteriorate on the Green River Road on-ramp merge during the morning peak hour, and vehicle density would increase on other segments due to anticipated traffic volume increases between existing and 2010 and 2030 conditions.

2.6.4 Avoidance, Minimization, and/or Mitigation Measures

T-1 A detailed Traffic Management Plan (TMP) will be prepared during the final design phase of the proposed project. The objective of the TMP is to minimize the potential impacts that construction activities may have on the traveling public and emergency service providers. Preparation of the TMP will be coordinated with the emergency services providers in the project vicinity to minimize response delays resulting from traffic delays, temporary ramp and lane closures, and detours during project construction.

The TMP for the proposed project will include the following elements and strategies:

- Traffic control plans and related specifications, to be completed during final design of the proposed project, will be developed in accordance with the Work Area Traffic Control Handbook (also referred to as the WATCH manual), Section 5 of the Caltrans Traffic Manual, applicable city requirements, and Orange County Transportation Authority (OCTA) Express Lane requirements. These plans and specifications will include elements such as: Advance Signs and portable Changeable Message Signs (CMSs); traffic surveillance; temporary call boxes (during call-box relocations); lane/shoulder closures; and temporary signing/striping on local streets, the eastbound on- and off-ramps at the Green River Road

interchange, SR-91 eastbound to SR-71 northbound connector; and the SR-91 mainline. Temporary lane closures of SR-91 are anticipated during temporary restriping of the existing eastbound lanes, including the toll lanes. This work will be done at night from 11:00 p.m. to 5:00 a.m. Lane closures will be coordinated with Caltrans and the OCTA Express Lanes facility manager. Anticipated detour routes during construction of the eastbound on- and off-ramps at the Green River Road interchange and SR-91 eastbound to SR-71 northbound connector will be identified in the preliminary TMP. Signal timing may be adjusted along the detour routes to enhance traffic operations.

- The proposed project will implement a Construction Zone Enhanced Enforcement Program (COZEEP) and use California Highway Patrol (CHP) officers to enforce lane closures and provide a visual deterrent to errant/speeding vehicles.
- The proposed project will implement a Public Awareness Campaign (PAC). Although any lane closures will occur at night, there will still be a potential temporary impact to vehicles traveling through the construction zone. The purpose of this PAC is to keep the surrounding community abreast of the proposed project's progress and construction activities that could affect the public's travel plans and to minimize delays or confusion to the motoring public during construction activities. The use of mailers/flyers and local newspaper advertising will be used to disseminate this information.
- The proposed project will implement a Construction Freeway Service Patrol (CFSP) program. The CFSP will provide tow truck service to aid stranded motorists and remove disabled vehicles from the traveled way or shoulders.
- The proposed project will implement the following construction strategies to minimize construction related impacts:
    - Perform major construction activities at off-peak hours, such as at night or during the weekends, when feasible and reasonable.
    - Finalize ramp and connector closure charts during the final design phase. The lane closure charts developed by District 8 do not allow full closure of the ramps. During final design, the proposed lane and connector closures will be presented to the Caltrans Lane Closures Review Committee (LCRC) for approval.

  - Coordinate construction with adjacent projects. Coordination is important to address possible temporary increases in traffic due to detours from adjacent projects. Construction of the adjacent projects is anticipated to be completed prior to construction of the proposed project.
  - All ramp reconstruction and freeway widening will be constructed in stages to minimize disruption.
- The proposed project will include contingency plans that specify the actions that will be taken in the event that something unexpected occurs with respect to construction activities or traffic operations. The contractor will review these plans and incorporate them into the contractor's contingency plan.
- The proposed project will implement a subsidized or free vanpool service during construction to minimize traffic congestion on the SR-91 mainline lanes.

2.7 Visual/Aesthetics

A *Scenic Resource Evaluation/Visual Impact Assessment* (VIA) (Tatsumi and Partners, Inc., April 2007) was prepared to assess the potential adverse visual impacts of the proposed project and to identify measures to avoid, minimize, and mitigate those adverse impacts. The VIA for the proposed project follows the guidance contained in the Federal Highway Administration's (FHWA) *Visual Impact Assessment for Highway Projects* (FHWA 1981) to assess visual impacts of proposed freeway improvements. The findings of the VIA are summarized in this section.

2.7.1 Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings [42 United States Code [USC] 4331(b)(2)]. To further emphasize this point, in its implementation of NEPA [23 USC 109(h)], FHWA directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts including, among others, the destruction or disruption of aesthetic values.

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

California Scenic Highway Program

California's Scenic Highway Program was established in 1963 through Senate Bill 1467. The purpose of this program is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq.

Highway construction proposed on designated State Scenic Highways is evaluated in terms of the visual impact to scenic views. If major adverse impacts occur, then appropriate avoidance, minimization, and mitigation measures will be proposed. Generally, designating segments of a route as a scenic highway would not substantially alter the type of project proposed or the environmental compliance process. There are no special restrictions for construction or maintenance activities on

scenic highways. However, Caltrans works with appropriate agencies to coordinate transportation proposals and maintenance activities and to ensure the protection of scenic corridors to the maximum extent feasible.

2.7.2 Affected Environment

SR-91 is a major east-west freeway that links the cities and communities of Orange, Riverside, and San Bernardino Counties. SR-91 is officially designated as a State Scenic Highway between State Route 55 (SR-55) in the City of Anaheim and the eastern Anaheim city limit, a distance of approximately 6.4 kilometers (km) (4.0 miles [mi]). SR-91 within the project area is not designated as a State Scenic Highway. The Orange County Master Plan of Scenic Highways designated SR-91 as a Type I Scenic Highway (Viewscape Corridor). The Orange County segment of the proposed project falls within these limits.

Within the viewscape corridor, the project segment runs through the Santa Ana River Canyon adjacent to Featherly Regional Park and the Santa Ana River Trail. Views within this corridor include residential and commercial development and near and distant views of chaparral and coastal sage scrub-covered hillsides. These views are within the line of vision for travelers on the project segment of SR-91.

Parts of Chino Hills State Park, Featherly Regional Park, the Santa Ana River Trail, Green River Golf Course, and Green River Village Mobile Home Park border the north side of SR-91 along the project segment. To the south, the project segment is predominantly bordered by steeply rising and rolling hills that turn lush green after winter rains and golden brown as the summer progresses. This area also includes parts of Chino Hills State Park. This part of Chino Hills State Park is not a public access area and is used as a wildlife corridor only. To the east, motorists on SR-91 and northbound SR-71 can also view Prado Dam north of SR-91 and east of SR-71.

The proposed project would be viewed primarily by motorists consisting of local and regional daily commuters and travelers who use SR-91. Viewer exposure to the SR-91 project site from the road is high, considering that approximately 127,000 vehicles travel eastbound on SR-91 daily. Daily commuters may have an increased awareness of views from the road due to the amount of time spent on the freeway each day.

Because the freeway is at a higher elevation than the majority of the nearby residential areas on the north side of SR-91, views of the freeway are obscured by the freeway embankment. The hillside residents on the south side of SR-91 and at the

east end of the project area, for the most part, have expansive views of the Santa Ana River Canyon Landscape Unit, and would be aware of the SR-91 widening as part of the larger views of the canyon.

2.7.3 Environmental Consequences

2.7.3.1 Visual Resource Analysis Methodology

The visual impact analysis follows the *Visual Impact Assessment for Highway Projects* (FHWA 1981). The visual impacts of the proposed project were determined by assessing the visual resource change due to the project and predicting viewer response to that change.

The degree of visual quality in a view is evaluated using the following FHWA descriptive terms:

- **Vividness:** The visual power or memorability of landscape components as they combine in striking and distinctive visual patterns (e.g., the vividness of Niagara Falls).
- **Intactness:** The visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes and natural settings (e.g., a two-lane road that meanders through the countryside).
- **Unity:** The visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape (e.g., an English or Japanese garden).

The following visual impacts levels were used in determining visual impacts:

- **Low:** Minor adverse change to the existing visual resource, with low viewer response to change in the visual environment. May or may not require mitigation.
- **Moderate:** Moderate adverse change to the visual resource with moderate viewer response. Impact can be mitigated within 5 years using conventional practices.
- **Moderately High:** Moderate adverse visual resource change with high viewer response or high adverse visual resource change with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required would generally take longer than 5 years to mitigate.
- **High:** A high level of adverse change to the resource or a high level of viewer response to visual changes such that architectural design and landscape treatment

cannot mitigate the impacts. Viewer response level is high. An alternative project design may be required to avoid highly adverse impacts.

2.7.3.2 Build Alternative (Alternative 2)

Permanent Impacts

Because it is not feasible to analyze all the views in the project area, it was necessary to select a number of key viewpoints, or key views, which would most clearly display existing views and the anticipated visual effects of Alternative 2. Key views also represent the viewpoints of the primary viewer groups that would potentially be affected by the proposed project. The locations of the key views for the proposed project are shown in Figure 2-4. The key views from these locations are shown in Figures 2-5 through 2-9. The key views are numbered in order of similarity.

Table 2.19 summarizes the potential adverse impacts to these key views that would result from the proposed improvements. A detailed discussion of project effects on each key view follows the table.

Key View No. 1 (Refer to Figure 2-5)

This key view looks southeast from SR-91 and is representative of the steeply rising Santa Ana Mountains adjacent to the south edge of SR-91. The hillsides are heavily vegetated with native material that contributes to the vividness and memorability of the view.

This view depicts the effects of the proposed retaining wall on views from the eastbound lanes of SR-91. The character of this view would change with the addition of the eastbound lane and the construction of the retaining wall. The wall would be a noticeable visual feature in this view. It would encroach on the views from this segment of SR-91 and would alter the existing visual character of this segment of the freeway. It would block short-range views and diminish mid- and long-range views of the natural elements of the landscape south of SR-91. The change in visual character along this segment of SR-91 is likely to be perceived as adverse by the viewer groups on this segment of SR-91.

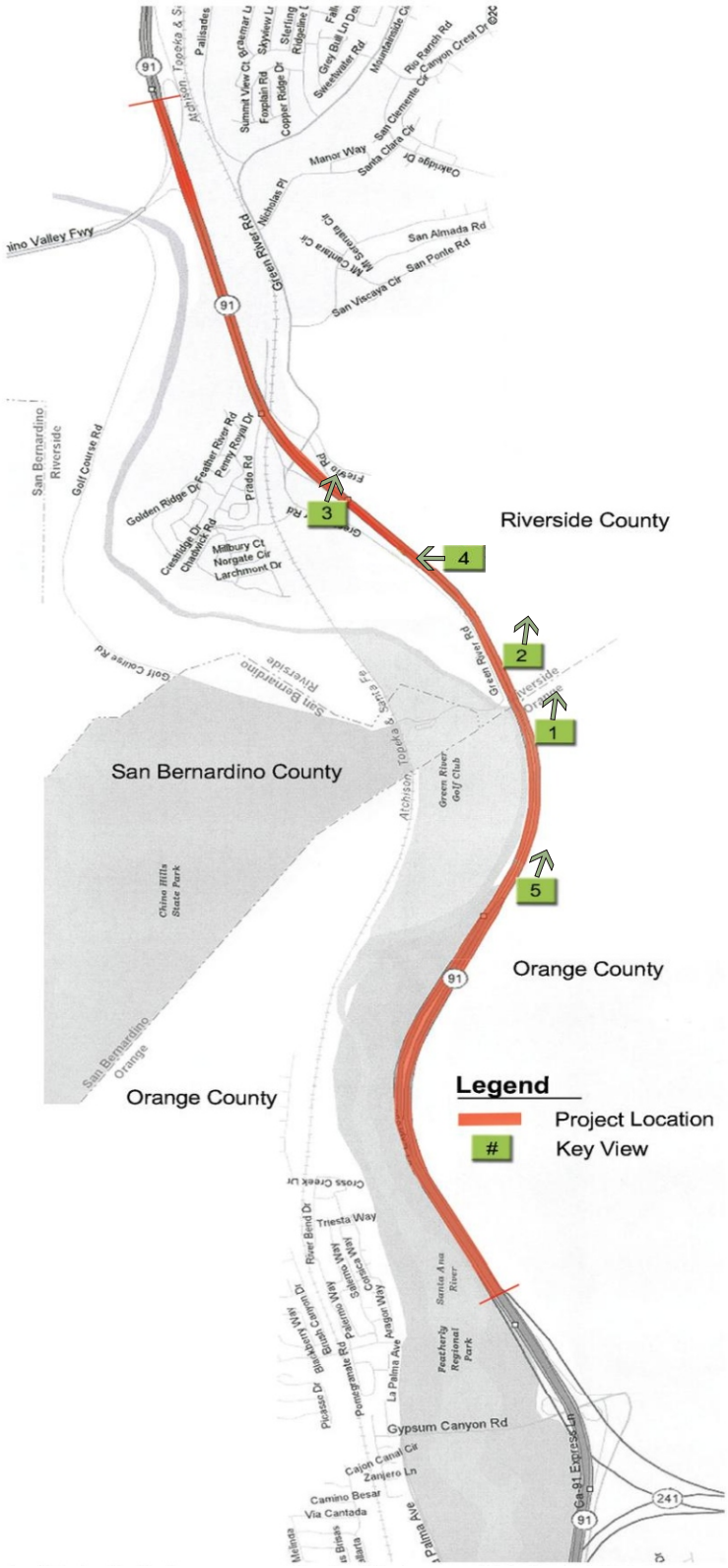

FIGURE 2-4

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Key View Location

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

N

NO SCALE

SOURCE: Tatsumi and Partners, Inc.

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KEY VIEW 1

Existing View

STA 175+70 (ORA) Looking Southeast

Proposed View (After Construction)

FIGURE 2-5

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Key View 1

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Tatsumi and Partners, Inc.

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KEY VIEW 2

Existing View

STA 4+60 (RIV) Near Green River Road Looking Southeast

Proposed View (After Construction)

FIGURE 2-6

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Key View 2

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Tatsumi and Partners, Inc.

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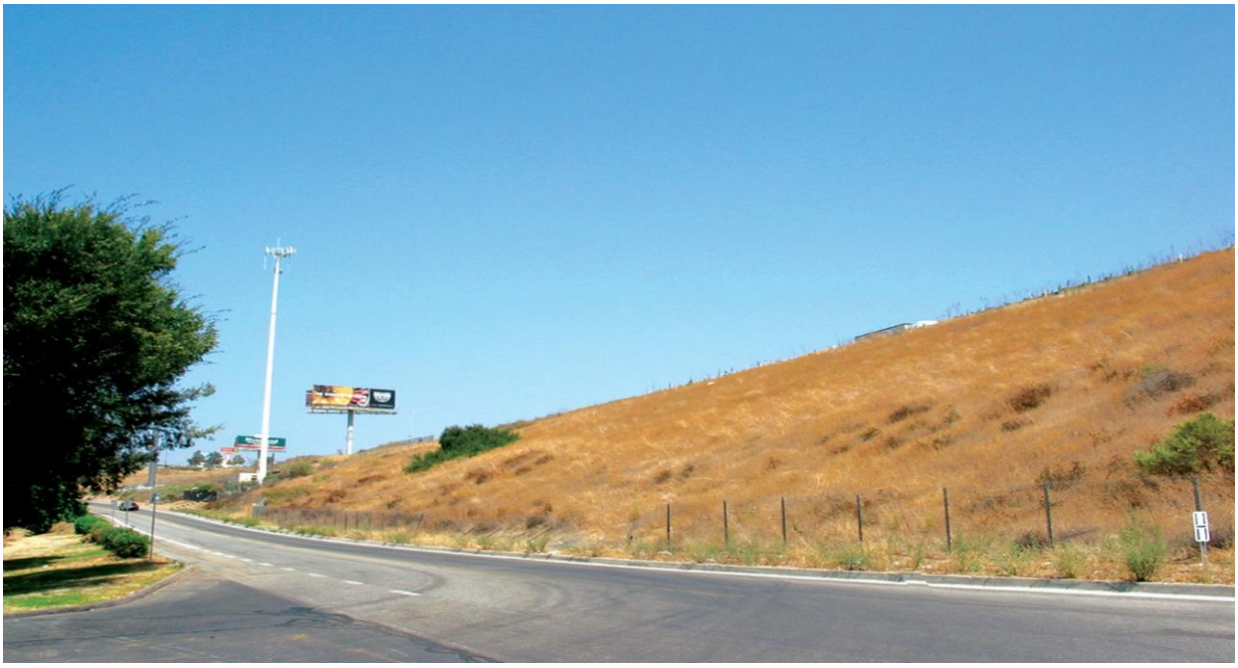
KEY VIEW 3



Existing View

STA 14+00 (RIV) Near Green River Road Looking Southeast

Proposed View (After Construction)

FIGURE 2-7

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Key View 3

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Tatsumi and Partners, Inc.

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KEY VIEW 4

Existing View

STA 7+40 (RIV) Looking Northeast

Proposed View (After Construction)

FIGURE 2-8

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Key View 4

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Tatsumi and Partners, Inc.

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KEY VIEW 5

Existing View

STA 161+00 (ORA) Near Coal Canyon Looking Southeast

Proposed View (After Construction)

FIGURE 2-9

SR-91 Eastbound Lane Addition
Between SR-241 and SR-71

Key View 5

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Tatsumi and Partners, Inc.

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Table 2.19 Key View Impact Summary

Key View No.	Proposed Features Seen in this View	Project Visual Impact on this View
1	Additional eastbound lane and retaining wall on the south side of SR-91	The adverse change to the visual quality of this view would be generally moderate. The overall visual impact would be low to moderate with mitigation described later in this section.
2	Additional eastbound lane and two retaining walls on the south side of SR-91	The adverse change to the visual quality would be generally moderate. The overall visual impact would be moderate with mitigation described later in this section
3	Additional eastbound lane and a sound wall on the north side of SR-91	The resulting visual impact would be low to moderate.
4	Additional eastbound lane and proposed sound wall on the north side of SR-91	The change to the visual quality and character of this view would be highly adverse. The resulting adverse visual impact would be moderate with mitigation described later in this section.
5	Additional eastbound lane on the south side of SR-91	The positive change to the visual quality and character would be low to moderate. The resulting visual impact would be low to moderate.

Source: *Final Scenic Resource Evaluation/Visual Impact Assessment* (Tatsumi and Partners, April 2007).

Viewer sensitivity to this change in the visual environment is likely to be moderate to high because the wall would conflict with the freeway's designation as a scenic highway, especially if the wall were not aesthetically enhanced to blend with the surrounding environment. The viewer response is expected to be moderately high along the very short length of this element. The adverse change to the visual quality would be generally moderate. The overall visual impact would be low to moderate with mitigation, as described later in this section.

Key View No. 2 (Refer to Figure 2-6)

This key view looks southeast from SR-91, just east of the Orange County/Riverside County line near Green River Road. This location has a longer view of the Santa Ana Mountains adjacent to the south edge of SR-91 and a view of the private road in proximity to and above the freeway. The area immediately adjacent to SR-91 is vegetated with ruderal, nonnative plants. The hillside above the private road is vegetated with native material that contributes to the moderate to high vividness and memorability of the view from this location. Because the existing freeway and private road encroach on the naturalistic setting, intactness and unity in this view are low to moderate.

This view depicts the effects of two proposed retaining walls on views from the eastbound lanes of SR-91. The character of this view would change with the addition of the eastbound lane and the two retaining walls. These walls would be a noticeable

visual feature in this view. They would encroach on the views from eastbound SR-91 and would alter the existing visual character of this segment of SR-91. They would block short-range views and diminish mid- and long-range views of the natural elements of the landscape. This change in visual character is likely perceived to be adverse to the viewer groups traveling along the very short length of this element.

Viewer sensitivity to this change in the visual environment is likely to be high because the walls would conflict with the designation of this segment of SR-91 as a scenic highway if the walls were not aesthetically enhanced to blend with the surrounding environment. The viewer response is expected to be moderate to moderately high along the very short length of this element. The adverse change to the visual quality would be generally moderate. The overall visual impact would not be substantial because this key view is a very short length and the walls would be aesthetically enhanced to blend with the surrounding environment, as specified below in Mitigation Measure V-1.

Key View No. 3 (Refer to Figure 2-7)

This key view looks southeast from the entrance to the mobile home development up toward oncoming westbound freeway traffic. The view is foreshortened due to the existing freeway embankment. The character is that of a native grass-covered berm. The existing freeway and embankment create an unmemorable view with low vividness. Because of the encroachment of the high slope to the freeway, intactness is low. Unity is low because there is a lack of compositional harmony.

This view depicts the effects of the proposed sound wall on the north side of SR-91, primarily on residents of the mobile home development and travelers to and from the Golf Course farther west. The character of this view would change with the addition of the sound wall. The wall would be a noticeable visual feature in this view; however, the change in visual character would be low. Viewer response is expected to be low to moderate.

Key View No. 4 (Refer to Figure 2-8)

This key view looks northeast to the westbound lanes from the eastbound side of the freeway. From both the eastbound and westbound lanes on SR-91, there are short-range views of treetops north of the freeway. Long-range views of residential development in Yorba Linda and Chino Hills, and the hills themselves, are visible from the westbound lanes. The views are vivid and memorable. Because the freeway is elevated, views are more encompassing and the intactness is moderate. Unity is

moderate to high and the coherence of the landscape is strengthened because viewers can see a greater part of the landscape unit.

This view depicts the proposed sound wall on the north side of SR-91. The character of this view would change with the addition of the sound wall by foreshortening views. Although of short length and noticeable when driving for a short length of time, the wall would be a noticeable visual feature in this view. The adverse change to the viewshed would be moderate to moderately high.

Viewer sensitivity to this change in the visual environment is likely to be moderate to high because the wall would foreshorten views and conflict with the designation of this segment of SR-91 as a scenic highway, especially if the wall was not aesthetically enhanced to blend with the surrounding environment. The viewer response is expected to be moderate to moderately high. The change to the visual quality and character in this view would be highly adverse. The resulting adverse visual impact would be moderate with mitigation, as described later in this section.

Key View No. 5 (Refer to Figure 2-9)

This key view is looking southwest from just east of the Coal Canyon underpass. The location has near and distant views of the Santa Ana Mountains, which contribute to the moderate to high vividness and memorability of the view. Immediately adjacent to the freeway is ruderal nonnative land cover sloping down and away from SR-91 to a drainage area south of SR-91. Because the existing freeway encroaches on the natural setting, intactness and unity are moderate.

This view depicts the effects of the proposed eastbound lane and revegetation to reinforce the scenic corridor views and enhance the visual quality of this view. The change in visual character is likely to be perceived as beneficial to viewer groups traveling eastbound on this segment of SR-91.

Viewer sensitivity to this change in the visual environment is likely to be moderate because it is consistent with the designation of this segment of SR-91 as a scenic highway. Viewer response is expected to be low to moderate. The positive change to the visual quality and character would be low to moderate. The resulting visual impact would be low to moderate.

Views from Hillside Areas

The project proposes three sound walls that could potentially block views from the backyards of residential uses on the south side of SR-91. The locations of these sound

walls were shown earlier on Figure 1-4. SW-7 is proposed at the top of the slope adjacent to the Green River Kindercare, SW-8 is proposed at the top of the slope adjacent to the single-family detached residences on Manor Way, and SW-9 is proposed at the top of the slope adjacent to single-family residences. The installation of these sound walls could block or substantially reduce views from these locations. Visual impacts from these areas would be moderate to high unless mitigation (described later) is implemented.

Temporary Impacts

Temporary visual impacts during construction such as construction activity, staging sites, truck hauling, detour signage, and construction lighting are anticipated under Alternative 2. Construction staging areas would be located within the project disturbance limits.

2.7.3.3 No Build Alternative (Alternative 1)

Permanent Impacts

The No Build Alternative would not result in the development of any of the improvements that are proposed under the Build Alternative such as the additional eastbound lane, retaining walls, and sound walls. The visual resources along the project segment of SR-91 would remain unchanged under the No Build Alternative.

Temporary Impacts

The No Build Alternative would not result in construction of the proposed project. Therefore, there would be no temporary visual impacts associated with construction activities.

2.7.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes recommended actions that avoid, minimize, or mitigate for the adverse visual impacts as a result of the proposed project.

Visual measures for project visual impacts consists of adhering to the following design requirements in cooperation with the District Landscape Architects for Caltrans Districts 8 and 12. The requirements represent context-sensitive solutions arranged by project feature and include design options in order of effectiveness. All visual mitigation would be designed and implemented with the concurrence of the applicable District Landscape Architects.

Visual improvements, aesthetic treatments, landscaping, and restoration of natural areas within Riverside County will be based on the 215/91 Corridor Master Plan to

ensure consistent design and aesthetically pleasing views throughout the SR-91 project segment. The County of Riverside communities have expressed concerns regarding the location and aesthetic treatment of sound walls and retaining walls in the SR-91 corridor.

Retaining Walls at Edge of Pavement

V-1 The shapes, textures, and colors or retaining walls will be consistent with the existing natural formations found in the view corridor.

The shapes of the retaining walls will capture the distance views of the gently sloping and rolling hills; the tops of the walls will be somewhat rounded to curvilinear in shape-softening engineered height variances. The retaining walls will have a smooth to medium texture, emulating rock outcroppings. Retaining wall colors will be a subtle blending of the natural colors evident in far and rear views of a surrounding environment.

In areas where retaining walls constructed with soil are required, ecosystem-appropriate natives will be planted at the back wall and allowed to cascade over the wall.

As a second option, and only where dictated by engineering considerations, soil nail walls will be plantable crib walls. The colors and textures of the plantable crib walls will be consistent with existing natural formations. Crib walls will be intensely planted with ecosystem-appropriate natives so that they will blend in with the surrounding environment.

Sound Walls

V-2 Where the backs of sound walls are visible to residents, recreational area users and commercial areas, and where areas are available for landscaping within Caltrans right-of-way, trees, shrubs, vines, and groundcover will be planted to screen views of the walls from the adjacent land uses.

The colors and textures of the sound walls will be consistent with the existing natural formations within in the view corridor.

Where sound walls are visible from the highway and there is no space in front of the walls for planting, vines will be planted at the back of the walls to climb over the walls.

Where feasible, vineways will be constructed to penetrate the base of sound walls at specified intervals. The intent would be to allow vines to grow through the walls and cover from the base upward.

V-3 The sound walls to be constructed adjacent to residential uses will be designed to use a clear product (such as tempered glass or Lucite) for as much of the wall height as possible to minimize adverse visual effects while achieving the desired noise reduction.

Graded Areas Adjacent to Edge of Pavement

V-4 Land cover areas disturbed by grading and project construction will be revegetated with ecosystem-appropriate native trees, shrubs, and/or groundcover. The revegetation will blend with adjacent undisturbed land cover areas. Plant materials used for landscaping within Caltrans right-of-way adjacent to the project segment of SR-91 will be consistent with the native species identified in the I-215/SR-91 Corridor Master Plan and Executive Order 13112, Invasive Species.

General

V-5 An aesthetic Design Review Team to include Caltrans Landscape Architecture units will be established to ensure that the project complies with the 215/91 Corridor Master Plan for improvements within Riverside County.

2.8 Cultural Resources

This section is based on the *Historic Property Survey Report (HPSR)* (Chambers Group, Inc., March 2006) and the *First Supplemental Historic Property Survey Report* (LSA Associates, Inc., June 2007).

2.8.1 Regulatory Setting

Cultural resources as used in this environmental document refer to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources are described below.

The National Historic Preservation Act of 1966 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (National Register). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the ACHP, Federal Highway Administration (FHWA), the State Historic Preservation Office (SHPO), and Caltrans went into effect for all Caltrans projects, both state and local, with FHWA involvement. The PA implements the Federal-Aid Highway Program in California (36 CFR 800.14[b]).

The HPSR and First Supplemental HPSR were prepared in accordance with the January 2004 PA among FHWA, the ACHP, the California SHPO, and Caltrans, and meets the standards for reporting cultural resource investigations under California Environmental Quality Act (CEQA) Guidelines, Section 15064.5 (a).

2.8.2 Affected Environment

An Area of Potential Effects (APE) and a revised APE map were developed for the proposed project, as shown in Appendix F. Minor changes were made to the APE map. A memo summarizing these changes is attached in Appendix F. The APE includes the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. In addition, the APE includes areas of soil disturbance associated with the following activities anticipated under Alternative 2: bridge widening, culvert extensions, modification and relocation of Intelligent Transportation System

(ITS) facilities, possible relocation of a subsurface roadway petroleum pipeline, installation of new landscaping and irrigation, relocation of a private access road adjacent to the roadway, and construction of retaining walls, sound walls, and drainage inlets.

Because the majority of project construction activities would take place within the existing Caltrans right-of-way, the APE is contained primarily within the existing SR-91 right-of-way. East of the Orange County/Riverside County boundary, the APE extends to the south of the existing Caltrans right-of-way to encompass easements associated with detention basins on the south side of SR-91 and includes the proposed right-of-way acquisition required to accommodate the private access road relocation near the Orange/Riverside County line culvert (Riverside County Station 1+20). The APE includes the three areas on the south side of SR-91 in Corona where sound walls are proposed adjacent to residential uses. Because construction would take place predominantly on the south side of the freeway, the APE did not extend north of the SR-91 centerline, except for the area adjacent to Sound Wall 3 west of Green River Road.

The project site is within the ethnographic territory of the Tongva (Gabrielino). The Tongva were hunters and gatherers who used both inland and coastal food resources. They hunted and collected seasonally available food resources and led a semisedentary lifestyle, often living in permanent communities along inland watercourses and coastal estuaries. Commonly chosen habitation sites included rivers, streams, and inland watercourses, sheltered coastal bays and estuaries, and the transition zone marking the interface between prairies and foothills. The most important factors in choosing a habitation site were the presence of water, a stable food supply, and some measure of protection from flooding. Tongva communities in the interior regions maintained permanent geographical territories or use areas that may have averaged 7,770 hectares (ha) (30 square miles [sq mi]).

In addition to permanent settlements, the Tongva occupied temporary campsites used seasonally for hunting, fishing, and gathering plant foods and shellfish. Hunting was primarily for rabbit and deer, while collecting included plant foods such as acorns, buckwheat, chia, berries, and fruits. They also established seasonal camps along the coast and near bays and estuaries to gather shellfish and hunt waterfowl.

A records search of all previously recorded historic and prehistoric archeological sites within a 0.8 kilometer (km) (0.5 mile [mi]) radius of the APE was conducted on

October 3 and 4, 2003. The records search identified six previously recorded archaeological sites within the 0.8 km (0.5 mi) radius of the APE. The six resources are summarized in Table 2.20.

Table 2.20 Archaeological Sites Recorded in the Vicinity of the Project APE

State Trinomial or Other Designator	Initially Recorded	Site Type and Description
CA-RIV-6532H	M. Sterner 2000	Alta Vista/Green River Camp, site of the historic town of Alta Vista, 1910 to 1950
CA-RIV-4730H	Hampson/Kaptain 1992	Historic Prado Dam
CA-RIV-3694H	Brock/Elliot 1989	Historic Santa Ana School Site
30-150052	D. Marsh 1996	Historic Bixby Bryant National Register Property
30-000303	Shepard 1970	Prehistoric site consisting of several caves
30-001073	Desautels 1983	Millingstone prehistoric site

Source: *Archaeological Survey Report* (Chambers Group, Inc., March 2006), and *Historical Property Survey Report*, (Chambers Group, Inc., March 2006).

One of the six recorded resources identified by the records search is within the project APE. This site (CA-RIV-6532H), or Alta Vista/Green River Camp, includes the remains of the abandoned town of Alta Vista. Occupation of the town began in 1910 to 1920, and buildings were abandoned or removed beginning in the 1950s with the construction of the Green River Golf Course. The subsequent construction of SR-91 effectively ended the existence of this town. Testing at the historic town of Alta Vista shows that the site has been substantially degraded since its abandonment and retains little integrity. A letter from SHPO dated March 8, 2001, indicated that the site was not eligible for inclusion in the National Register (Appendix I). The site is crossed by SR-91. The north side of the site includes one concrete patio and brick fireplace. Subsurface testing on the south side of the site outside Caltrans right-of-way indicated the presence of some structural remains, primarily foundation remnants.

Native American consultation was conducted on August 12, 2005. The Native American consultation did not identify any Native American cultural resources or sacred lands in or near the APE for the proposed project. The following tribes and individuals were consulted:

- Ms. Susan Frank, Gabrielino Tongva Band of Mission Indians of California
- Mr. Robert Dorame, Tribal Chair, Gabrielino Tongva Indians of California Tribal Council
- Mr. Craig Torres, Gabrielino Tongva
- Ms. Cindi Alvitre, Ti'At Society

- Mr. John Tommy Rosas, Tribal Administrator, Tongva Ancestral Territorial Tribal Nation
- Mr. Anthony Morales, Chairperson, Gabrielino/Tongva Tribal Council

Architectural field surveys of the APE were conducted on July 28 and August 28, 2005. No archaeological or historic resources were identified within or immediately adjacent to the APE for the proposed project. The area within the APE is highly disturbed, with several areas of fill. During the field survey, no remnants of the Alta Vista/Green River Camp were found in the APE on the south side of SR-91.

2.8.3 Environmental Consequences

2.8.3.1 Build Alternative (Alternative 2)

The historic town site of Alta Vista has been substantially degraded since its abandonment and retains little integrity. Sound Wall 3, proposed on the north side of SR-91 west of Green River Road, would not impact any of the remaining features or elements of this site because the excavation for the sound wall would be in certified fill east of and outside the town site, adjacent to the existing residential development. Therefore, proposed Sound Wall 3 would not result in adverse impacts to this town site.

No remnants of the Alta Vista town site have been found within Caltrans right-of-way on the south side of SR-91. Therefore, Alternative 2 would not result in adverse impacts to this town site south of SR-91 because there are no remaining features of the Alta Vista site within Caltrans right-of-way where project construction would occur.

No historic Section 4(f) resources were identified in the study area.

Sound Walls 7, 8, and 9 would be constructed within the APE, on the south side of SR-91; the locations of these sound walls were shown earlier in Figure 1-4. The locations for these sound walls have previously been disturbed for construction of the residences, landscaping, and slope maintenance. None of the six cultural resource sites documented in the records search and listed later in Table 2.21 are located at or near the locations for these proposed sound walls. These sound walls would be built on private property in accordance with contract terms to be agreed on by the property owners and Caltrans. Because Sound Walls 7, 8, and 9 would be built in existing disturbed areas, no adverse impacts to cultural or archaeological resources are anticipated as a result of the construction of these project features.

There is a potential for the area east of the SR-71 interchange, which consists of native soils, to contain buried deposits. This section of roadway would be elevated by the placement of fill. If construction requires removal of these soils, there is a potential that buried cultural material may be encountered.

2.8.3.2 No Build Alternative (Alternative 1)

Because the No Build Alternative would not involve any construction activities or improvements, there would be no impact to any historical or archaeological resources.

2.8.4 Avoidance, Minimization, and/or Mitigation Measures

The measure below would substantially reduce the potential for impacts related to the discovery of previously unknown cultural materials and human remains during construction of the proposed project.

CR-1 If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner will be contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendant (MLD). At this time, the person who discovered the remains will also contact the District 8 (if the remains are found in Riverside County) or District 12 (if the remains are found in Orange County) Environmental Branch Chief so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

PHYSICAL ENVIRONMENT

2.9 Hydrology and Floodplains

The analysis of the potential impacts of the proposed project described in this section is based on the *Summary of Floodplain Encroachment* (LSA Associates, Inc., April 2007).

2.9.1 Regulatory Setting

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

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

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

2.9.2 Affected Environment

The drainage area in the vicinity of the project segment of SR-91 encompasses approximately 48 square kilometers (30 square miles) of watershed on both sides of the Santa Ana River. The main stem of the Santa Ana River is divided into six reaches. Each reach is generally a hydrologic and water quality unit as defined by the Regional Water Quality Control Board (RWQCB). Reach 2, in the project vicinity, carries all the upstream surface water flows down Santa Ana Canyon to Orange County. Drainages that enter the Santa Ana River in the project area include Aliso and Brush Canyons from the Chino Hills to the north, Wardlow Wash from the east, and Fresno, Coal, and Gypsum Canyons and Green River Creek from the south.

Annual flows through Reach 2 vary greatly in any given year; however, flows are typically at their peak during the winter/spring season. Prado Dam and the new Seven

Oaks Dam, immediately upstream from the project segment of SR-91, regulate flows between the upper and lower Santa Ana River basins and reduce flooding to below the 100-year flood levels by storing and releasing storm flows over a longer period of time. Prado and Seven Oaks Dams are operated under set procedures agreed to by several agencies with the intent of minimizing downstream flood damage, maximizing the availability of surface water for groundwater recharge programs, and minimizing adverse effects to endangered species in wetland areas above Prado Dam.

The part of the project segment of SR-91 near Coal Canyon is partly within the 100-year Flood Zone A. (Federal Insurance Rate Map [FIRM] No 0602450670A, April 15, 1980; Appendix H). Zone A identifies a special flood hazard area for which no Base Flood Elevation (BFE) has been provided.

A Location Hydraulic Study (Kimley-Horn and Associates, July 2007) has been prepared and supports the evaluation as summarized below. Formal coordination with federal, state, and regional agencies is not required at this time. Future coordination with the appropriate agencies would be conducted as part of final design and prior to construction.

2.9.3 Environmental Consequences

2.9.3.1 Build Alternative (Alternative 2)

Permanent Impacts

The Build Alterative would not result in any modifications or encroachments into the Santa Ana River. Existing drainage facilities along and crossing the project segment of SR-91 would be modified during project construction to accommodate runoff from the additional lane on eastbound SR-91.

One of the four culverts that would be modified as part of the proposed project is located in the Federal Emergency Management Agency (FEMA) mapped 100-year floodplain. The culvert headwall at this location would be removed and replaced with a new, higher headwall. The new culvert headwall would be placed in the same location as an existing headwall within the 100-year floodplain; therefore, there would be no new encroachment into the floodplain compared with existing conditions. In addition, the floodplain encroachment is not a longitudinal encroachment; it is a vertical encroachment because the new headwall would be higher, but not wider or longer compared to the existing structure.

The proposed project would not add any additional structures or fill to the floodplain that would increase the 100-year water surface elevation. In addition, implementation

of the proposed project would not result in interruption of emergency services or routes. Therefore, there would be no floodplain-related risks to life or property associated with implementation of the proposed project.

The proposed action would not support probable incompatible floodplain encroachment; the encroachment involves drainage improvements to an existing transportation facility.

Therefore, the Build Alternative is not anticipated to result in adverse permanent impacts related to hydrology and floodplains.

Temporary Impacts

Construction equipment would be operated within the floodplain during construction of the new headwall. At the completion of construction activities within the floodplain, the disturbed area would be returned to the existing condition.

2.9.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction or operation of any transportation improvements and therefore would not result in adverse impacts related to hydrology and floodplains.

2.9.4 Avoidance, Minimization, and/or Mitigation Measures

Mitigation measures to minimize construction impacts on the natural and beneficial floodplain values are discussed in Section 2.10, Water Quality and Stormwater Runoff, and Sections 2.16 through 2.21, Biological Environment. There are no permanent impacts associated with hydrology and floodplains; therefore, no additional avoidance, minimization, or mitigation measures are required.

2.10 Water Quality and Storm Water Runoff

Analysis of the potential water quality and storm water impacts of the proposed project is based on the *Water Quality Assessment Report* (LSA Associates, Inc., December 2007).

2.10.1 Regulatory Setting

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit to dredge or fill within waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all Caltrans activities on its highways and facilities. Department construction projects are regulated under the statewide permit, and projects performed by other entities on Department right-of-way (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. Construction projects with disturbances of 0.4 hectare (1 acre) or more require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction.

2.10.2 Affected Environment

2.10.2.1 Surface Water

The project site is located in the Lower Santa Ana River Watershed. The Santa Ana River is north of the project area, parallel to SR-91. Drainages that enter the Santa Ana River in the project vicinity include Aliso and Brush Canyons from the Chino Hills from the north, Wardlow Wash from the east, and Fresno, Coal, and Gypsum Canyons and Green River Creek from the south. These drainages respond to intermittent local precipitation and pose increased seasonal flow to the Santa Ana River.

Within the project limits, 20 storm water inlets/override drains along the shoulder of SR-91 control storm water runoff, and 8 storm water drainage culverts convey storm water beneath SR-91 into the Santa Ana River.

In general, the quality of surface water in the Santa Ana River Basin becomes progressively poorer as water flows downstream. The segment of the Santa Ana River in the project area is not on the 2006 Clean Water Section 303(d) List of Water Quality Limited Segments approved by the SWRCB in October 2006. On March 8, 2007, the United States Environmental Protection Agency (EPA) partially disapproved California's 2004–2006 303(d) List; that is, it disapproved the State's omission of impaired waters that met federal listing regulations or guidance. EPA is adding 64 waters and 37 associated pollutants to the State's 303(d) list. The Santa Ana River, Reach 2, is not on the list of waters being added to the 2006 303(d) list.

The following beneficial uses were identified in the *Santa Ana River Basin Water Quality Control Plan* (California Regional Water Quality Control Board, 1995) for the Santa Ana River, Aliso Creek, and Coal Canyon Creek in the project area:

- Groundwater recharge
- Body-contact recreation (e.g., swimming and wading)
- Nonbody-contact recreation (e.g., boating and fishing)
- Warm water habitat for fish amenable to reproduction in warm water
- Habitat for wild plants and animals
- Habitat for rare (threatened and endangered) plants and animals

In addition, municipal water supply is designated as a beneficial use for Aliso Creek and Coal Canyon Creek, and agricultural use is designated as a beneficial use for the Santa Ana River.

2.10.2.2 Groundwater

The project site is not located above a groundwater basin. However, the Santa Ana Forebay groundwater basin is located to the west (downstream) of the project area. There are no sole-source aquifers in the project area.

The primary source of groundwater in the project vicinity is the Santa Ana River, which feeds the underground aquifers in the area. An aquifer is an underground layer of rock and sand that contains water. Secondary sources of groundwater include springs and runoff from the hills south of SR-91. Based on groundwater levels encountered in borings conducted as part of the geotechnical investigation for the

proposed project, groundwater elevations in the project area range from 3.7 meters (m) (12.1 feet [ft]) to more than 20 m (65.6 ft) below ground surface (bgs).

Groundwater in Santa Ana Canyon does not have designated beneficial uses; however, designed beneficial uses for the Santa Ana Forebay, which is the receiving water for the canyon, are municipal, industrial, and process water supply.

The project site is located in a high risk area, which is defined as a location where spills from State-owned rights-of-way, activities, or facilities can discharge directly to municipal or domestic water supply reservoirs or groundwater percolation facilities. The Orange County Water District maintains several groundwater recharge basins along the Santa Ana River approximately 9.5 kilometers (km) (6 miles [mi]) west of the western project limits. SR-91 discharges directly into the Santa Ana River, and is therefore considered a "high risk" area.

2.10.3 Environmental Consequences

2.10.3.1 Build Alternative (Alternative 2)

Short-Term Impacts During Construction

Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality and aquatic habitats. During construction, the total disturbed area from the proposed project is estimated to be approximately 14 ha (35 ac). Short-term construction activities that can cause a potential adverse impact to the water quality within and downstream of the project area are:

- Grading and excavating activities can loosen soil and expose it to storm water and other runoff. The runoff-transported soil can enter the surface water body, degrading the water by adding mineral constituents that increase turbidity, increase salinity, and/or clog riverbed or recharge pond percolation.
- Equipment operation, maintenance, and storage activities can transport sediments off the construction site, extending the area of potential sediment impact.
- Construction materials and refuse (concrete forms, food wrappers, etc.) on and near construction sites present an opportunity to be carried into surface water bodies by runoff.
- Wet season runoff could be substantial for the proposed project depending on the phase of active construction occurring during the wet season. There may be seasonal work restrictions between October 1 and May 1, during the rainy season.

- Equipment operation, maintenance, and storage may result in spills of fuels, coolants, lubricants, and hydraulic fluids. These constituents can then be carried in runoff to the river or, if spilled in sufficient quantities, directly infiltrate groundwater.

Construction site Best Management Practices (BMPs) would be required during construction of the Build Alternative. According to the WQAR, the BMPs during construction of the SR-91 project are anticipated to include, but not be limited to:

- Silt fences at the bottoms of slopes and around stock piles to intercept sediment flow
- Fiber rolls on the faces of slopes to slow down runoff and remove sediments
- Construction entrances to reduce tracking of dirt onto roads
- Concrete washouts to avoid cement flowing to drainage systems
- Gravel bags to provide additional protection and intercept sediments
- Standard Caltrans inlet protection and energy dissipaters at drainage systems
- Temporary Fencing (type ESA) for preservation of existing vegetation

If Construction Site BMPs are properly designed, implemented, and maintained as presented below in Avoidance Measure WQ-1, no adverse water quality impacts related to construction activities would occur.

In addition, dewatering may be necessary to construct structure footings. If groundwater or other non-stormwater dewatering is necessary during construction, compliance with the De Minimus Permit (Order No. R8-2003-0061, NPDES No. CAG998001), presented later in Avoidance Measure WQ-3, would prevent adverse water quality impacts during dewatering activities.

Long-Term Impacts During Operation

The eastbound lane addition to SR-91 would result in an increase in impervious area of 6 ha (15 ac) compared to the existing freeway facility. An increase in impervious area would increase the volume of runoff during a storm, which would more effectively transport pollutants to receiving waters. Pollutants of concern during operation include sediments, trash, petroleum products, and chemicals. Long-term operational activities that can cause a potential adverse impact to water quality in and downstream of the project area are as follows:

- Trash thrown from vehicles traveling on SR-91 would present an opportunity for this type of debris to reach the Santa Ana River.
- Erosion of nearby soils can be collected on the road from rainfall events, concentrating the sedimentation through the road drainage structures. Also, the concentration of runoff from road drainage may increase soil erosion at the discharge point.
- Operation of vehicles on SR-91 would distribute residues from fuel combustion, tire wear, and oil and coolant leaks on the road and shoulder surfaces.

Currently, runoff from SR-91 in the project limits is untreated. As part of the proposed project, Design Pollution Prevention, Treatment, and Maintenance BMPs must be implemented as feasible to target constituents of concern in runoff from the project area. All BMPs are included in the disturbance limits of the proposed project. According to the WQAR, these BMPs are anticipated to include, but not be limited to, the following:

Design Pollution Prevention BMPs

- Slope/surface protection systems such as revegetated slopes with minimal cut/fill would be used. In some locations, retaining walls would be incorporated to reduce steepness of slopes.
- Concentrated flow conveyance systems such as flared culvert inlets/outlets and protection/velocity dissipation devices would be used. It is anticipated that these would be implemented at pipe outlets or ditches.
- Preservation of existing vegetation is an important aspect of pollution control. The proposed project would maximize protection of desirable existing vegetation to provide erosion and sediment control benefits. All vegetation to be retained would be coordinated with the Caltrans Environmental Branch and identified in the contract plans during the final design phase. All areas to be preserved would be protected with orange polypropylene fencing during construction.

Treatment BMPs

- Biofiltration swales/strips would be designed per Caltrans standards during the final design phase. The project design would facilitate adequate hydraulic function for flood routing and drainage. Biofiltration swales are proposed south of SR-91 at the toe of fills, as shown earlier in Figure 1-4. Biofiltration strips may be used to treat sheet flow. It is anticipated that biofiltration swales would follow existing slopes and natural or low-cut sections.

- Water quality basins are also proposed for the SR-91 project and were shown earlier on Figure 1-4. The basins would be designed per Caltrans standards during the final design phase. The basins may be used in combination with biofiltration swales/strips to maximize treatment. The actual locations and type (detention or extended detention) of these basins may be modified based on detailed engineering per the detailed geotechnical studies conducted during final design.
- Infiltration basins may also be considered instead of detention basins. Further geotechnical studies conducted during final design would provide additional information for consideration of infiltration basins as features in the proposed project.

Maintenance BMPs

- Sediment would be removed when it reaches a maximum depth of 0.6 m (2 ft)
- Basins would be cleaned at least once each year
- The basins and swales/strips would be inspected after every substantial rain event
- During long-term storm events, the basins would be inspected every 24 hours
- The basins would be inspected at least every two weeks during the rainy season
- Drain inlets would be stenciled to indicate that no waste dumping is allowed because the drains discharge to a stream

Proper design, inspection, and maintainance of design pollution and treatment BMPs and adherence to the the Caltrans NPDES permit and the SWMP (June 2007 or subsequent issuance) as presented below in Avoidance Measure WQ-2 would prevent adverse water quality impacts during project operations.

2.10.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction or operation of any transportation improvements on this segment of SR-91. Therefore, the No Build Alternative would not result in adverse impacts related to storm water runoff and water quality.

2.10.4 Avoidance, Minimization, and/or Mitigation Measures

Caltrans SWMP (June 2007 or subsequent issuance) is the guidance for compliance with the NPDES permit requirements for discharge. As part of Caltrans Project Delivery Storm Water Management Program described in the SWMP (June 2007 or subsequent issuance), selected Construction Site, Design Pollution Prevention, and Treatment BMPs would be incorporated into the final design of the proposed project. Compliance with the standard requirements of the SWMP (June 2007 or subsequent

issuance) for potential short- and long-term impacts (listed below in Avoidance Measures WQ-1, WQ-2, and WQ-3) is required.

WQ-1 As applicable, the provisions of the *NPDES General Permit, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activities (Order No. 99-08-DWQ, NPDES No. CAS000002)* and any subsequent permit as they relate to construction activities for the project will be complied with during construction.

The provisions of the *Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ NPDES No. CAS000003)* and any subsequent permit as they relate to construction activities for the project will be complied with during construction. This will include submission of a *Notice of Construction* (NOC) to the Santa Ana Regional Water Quality Control Board at least 30 days prior to the start of construction, preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), and submission of a *Notice of Construction Completion* (NCC) to the Santa Ana Regional Water Quality Control Board upon completion of construction and stabilization of the site.

WQ-2 The procedures outlined in the *Storm Water Quality Handbooks, Project Planning and Design Guide* (March 2007 or subsequent issuance) will be followed during implementation of Treatment Control Best Management Practices (BMPs) for the project. This will include coordination with the Santa Ana Regional Water Quality Control Board with respect to feasibility, maintenance, and monitoring of Treatment Control BMPs as set forth in the Caltrans *Statewide Storm Water Management Plan*. (SWMP, June 2007 or subsequent issuance).

WQ-3 During dewatering activities, the provisions of the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality, Order No. R8-2003-0061 NPDES No. CAG998001, as they relate to construction activities for the project, will be followed. This will include submission of a *Notice of Intent* to the Santa Ana Regional Water Quality Control Board at least three months prior to the start of dewatering and compliance with all applicable provisions in the De Minimus permit, including water sampling, analysis, and reporting of dewatering-related discharges.

2.11 Geology/Soils/Seismic/Topography

This section is based on the *Preliminary Geotechnical Information Report* (Kleinfelder, Inc., April 2007) prepared for the SR-91 project.

2.11.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "…outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The current policy is to use the anticipated Maximum Credible Earthquake (MCE), from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

2.11.2 Affected Environment

2.11.2.1 Site Geology

The project segment of SR-91 is located at the northern edge of the Santa Ana Mountains, within the Peninsular Ranges geomorphic province. The Peninsular Ranges province is a northwest/southeast-oriented grouping of mountain ranges and valleys that are subdivided into smaller units by fault lines.

The project segment of SR-91 lies on fill, which overlies alluvial, fluvial, and colluvial sediments derived from the surroundings hills and the Santa Ana River. The alluvial and fluvial soils generally consist of gravelly sand and sand. Superimposed on the bedrock materials are several areas of landslide debris derived from the bedrock formations. The depth to groundwater in the vicinity of the project segment of SR-91 ranges from 3.7 to 19.8 meters (m) (12 to 65 feet [ft]) below ground surface (bgs).

Geotechnical conditions at the sound wall locations were determined based on site visits, extrapolation of existing data, and reviews of available geologic information performed as part of the *Preliminary Geotechnical Information Report*. Based on these investigations, fill is most likely the primary foundation material at the proposed location for the sound wall adjacent to westbound SR-91 (SW-3). The

proposed sound walls on the hillsides above SR-91 (SW-8 and SW-9) are anticipated to be constructed on native bedrock materials. The proposed sound wall adjacent to the preschool (SW-7) is anticipated to be founded on native alluvial materials.

2.11.2.2 Seismic Conditions

Major fault systems in the Peninsular Ranges province include the San Andreas, San Jacinto, Whittier-Elsinore, and Newport-Inglewood Faults. Steep northwest-facing slopes and more gentle westerly slopes characterize this part of the Peninsular Ranges. The Whittier-Elsinore Fault traverses the project area near the Orange/Riverside County boundary. The location of the fault in this area is not precisely known because a large landslide (i.e., the Mindeman landslide) hides indications of the fault line. The western end of the project limits is approximately 6.0 kilometers (km) (3.7 miles [mi]) from the El Modeno-Puente Hills Fault, and the eastern end is approximately 1.0 km (0.6 mi) from the Chino Fault.

2.11.2.3 Landslides

A large landslide occurred along the south side of the Santa Ana River, near the Green River Golf Club. This large landslide has been called several names, including the Mindeman landslide and the Green River landslide. The limit of the landslide straddles the Orange/County Riverside County boundary and extends along SR-91 approximately 902 m (2,959 ft), from 320 m (1,050 ft) west of the county line to 582 m (1,910 ft) east of the county line. Many subsequent landslides in the area are also present along the south side of the project alignment and are superimposed on the Mindeman landslide.

During the preliminary geotechnical investigation, evidence of possible slope instability near a portion of the proposed SW-9 (slope covered with black plastic) was observed adjacent to a resident at 777 Highland View Drive. Based on the absence of obvious distress aboveground, the slope instability is most likely relatively shallow.

2.11.2.4 Groundwater Conditions

The primary source of groundwater in the project vicinity is the Santa Ana River, which feeds the underground aquifers in the area. The Santa Ana River runs parallel to SR-91 on the north side. Secondary sources of groundwater include springs and runoff from the hills south of SR-91. The depth to groundwater in the project area ranges from 3.7 m (12.1 ft) to more than 20 m (65.6 ft).

2.11.3 Environmental Consequences

2.11.3.1 Build Alternative (Alternative 2)

Ground Surface Rupture

The project site is not in an Alquist-Priolo Fault Zone; however, the SR-91 alignment between SR-241 and SR-71 is in proximity to several known active to potentially active fault zones and is subject to hazards from moderate to large earthquakes. Based on the Caltrans Seismic Hazard Map, the Whittier-Elsinore Fault could produce an MCE of magnitude 7.5, and the El Modeno-Peralta and Chino Faults could produce an MCE of magnitude 6.5. As noted in the *Preliminary Geotechnical Information Report*, the potential for a major earthquake to occur during the life of the project (within 50 years) on the Whittier-Elsinore Fault is moderate to high.

The Whittier segment of the Elsinore Fault Zone, which crosses SR-91, has a slip rate of 2.5 millimeters per year (mm/yr) (0.1 inch [in]/yr). If a magnitude 7.5 earthquake were to occur on this fault zone, the maximum displacement at ground surface at the SR-91 alignment could be as great as 1.0 m (3.3 ft).

Seismic Shaking

Based on the distance to area faults and the anticipated maximum shaking the project site could be exposed to, the project site could be susceptible to peak bedrock acceleration (PBA) of approximately 0.7 g (acceleration due to gravity), except for the SR-91/SR-71 separation, where the PBA is 0.6 g. Design features would be included in the project final design specifically to address the potential effects of seismic shaking on the project structures and facilities.

Liquefaction

Liquefaction involves a sudden loss in strength of a saturated soil caused by strong shaking, such as an earthquake. Typically, liquefaction occurs in areas where depth to groundwater is less than 15 to 20 m (49 to 66 ft) bgs and where the soils are composed of predominantly poorly consolidated sands and silty sands. According to the *Preliminary Geotechnical Information Report*, liquefaction-induced ground settlement of up to 50 mm (2 in) may occur in the project area.

Seismic Compaction

Seismic compaction is a phenomenon in which loose, dry, to partly saturated sands tend to settle or densify during earthquake shaking. According to the *Preliminary Geotechnical Information Report*, earthquake-induced settlement during an MCE of up to 50 mm (2 in) may occur in the project area.

Slope Instability

Slope instability, in the form of landslides and mudslides, is a potential adverse impact associated with seismic shaking. Because of local areas of slope instability, there may be an impact from the widening of SR-91 along its south shoulder and construction of SW-9, which would encroach on these existing unstable slopes. Embankment fill slopes constructed for the eastbound lane at an inclination of 1 vertical to 2 horizontal (1:2) or less should have adequate stability during a major seismic event.

Tsunami and Seiche Potential

The project site is approximately 30 km (19 mi) from the Orange County coastline. Therefore, tsunami is not a potential issue for the proposed project because of the distance to the ocean from the project site. In addition, the elevation of the project area, which varies between 122 m (400 ft) and 183 m (600 ft), is above the highest anticipated height of water surges associated with tsunamis.

Seiches are movements in enclosed bodies of water. The nearest large enclosed body of water to the project limits is the Prado Basin behind the Prado Dam. In the event that a major seismic event occurs during a time when water levels are high within the Prado Basin area, then there would be a possibility of a seiche occurring. This occurrence and the level of water at the time may generate enough energy to allow water to overtop the Prado Dam and cause downstream damage. However, the likelihood of all these circumstances occurring is small, and the potential for impacts is low. In addition, the implementation of the proposed project does not increase the likelihood of seiche occurrence or the number of persons that could potentially be affected compared to the No Build Alternative.

Scour

Scour is not a design issue for most of the bridge sites. The County Line Creek Bridge (culvert) is concrete-lined; therefore, scour is not expected at that site. There may be a potential for scour to occur at the SR-91/SR-71 Separation Bridge.

Corrosion

Due to low values of electrical resistivity, the on-site soils have a high potential to corrode buried metal.

2.11.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction of any transportation improvements and therefore would not result in impacts related to geology, soils, and

seismicity. However, similar to existing conditions, the No Build Alternative would continue to be subject to potential impacts associated with seismic activity.

2.11.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures are recommended to minimize adverse impacts to the project related to soils, seismicity, and topography:

GS-1 Subgrade preparation will consist of the following:

- Removal of existing pavements, structures, vegetation, debris, and any unsuitable materials in conformance with Section 15 of Caltrans Standard Specifications.
- Excavate materials a minimum of 0.6 meters (m) (2 feet [ft]) prior to placement of new fill materials.
- Proof-roll the exposed surface with loaded heavy equipment.
- Loose soils on the exposed surface will be overexcavated and recompacted. Any such loose soils that cannot be recompacted will be removed and disposed of off-site.
- Scarify and compact the exposed surface to the specified density before placement of new fill.
- Achieve a minimum relative compaction of 95 percent for all subgrade soils to a minimum depth of 0.2 m (8 inches [in]) below the grading plane for the width between the outer edges of shoulders for both infill and inexcavation.
- Achieve a minimum relative compaction of 95 percent for all subgrade materials to a depth of 0.2 m (8 in) below the finished grade the width of the traveled way plus a distance of 0.9 m (3 ft) horizontally beyond the traveled way, whether in embankment or excavation.

GS-2 Areas where the back slope is steeper than 1 vertical to 1.5 horizontal and/or in the instability risk areas identified in the tables on pages A-29 and A-30 of the *Preliminary Geotechnical Information Report* (Kleinfelder, Inc., April 2007), nonstandard retaining walls will be required, as summarized in the table on page A-30 of the *Information Report*. For areas where the slope above the wall is to remain 1 vertical to 1.5 horizontal and not in the slope instability risk areas, Caltrans standard retaining walls may be selected.

GS-3 To assist final geotechnical design of the walls and improve cut slope stability analyses, geotechnical instrumentation will be installed at several locations under the supervision of a Registered Geotechnical Engineer within the existing slide zones. Instrumentation should include inclinometers at approximate stations 173+80, 175+50, and 4+20. Inclinometers should be constructed on the slopes above the proposed work area to a depth sufficient to penetrate the deepest landslide slip plane. Inclinometers should be sited to provide both near-cut and overall deformation information.

GS-4 Peak bedrock acceleration (PBA) values contained in the table on page A-22 of the *Preliminary Geotechnical Information Report* (Kleinfelder, Inc., April 2007) will be submitted to Caltrans for review and approval.

GS-5 Project design will address the potential for buried metal to be corroded by the soil.

GS-6 If hillside sound walls are approved by the affected residents, a geotechnical engineer will approve the wall foundation design. Foundations for the portion of SW-9 located on unstable slopes should be planned as cast-in-drilled hole foundations with depths and structural rigidity greater than normal. In addition, to determine slope stability, surface mapping, drilling, and borehole sampling should be performed at the top of the slopes where sound walls will be constructed to a distance of at least 30.5 m (100 ft) downhill.

GS-7 The potential for scour at the SR-91/SR-71 Separation Bridge will be investigated during final design. The final project design will address the potential for scour at this structure's location.

2.12 Paleontology

The analysis in this section is based on the *Paleontological Identification and Evaluation Report* (LSA Associates, Inc., June 2007).

2.12.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. Although there is no federal law that specifically protects paleontological resources, there are a number of laws that have been interpreted to do so. The primary law is the Antiquities Act of 1906, which protects historic or prehistoric ruins or monuments and objects of antiquity. This Act has been amended to specifically allow funding for paleontological mitigation. Under California law, paleontological resources are protected by California Environmental Quality Act (CEQA), California Administrative Code, Title 14, Section 4306 et seq., and Public Resources Code (PRC) Section 5097.5.

2.12.2 Affected Environment

A majority of the project segment of SR-91 is underlain by fill; however the project segment also passes through bedrock formations and other units, including: the Baker Canyon Member of the Ladd Formation, the Silverado Formation, the Santiago Formation, the Undifferentiated Sespe/Vaqueros Formation, and the Sycamore Canyon Member of the Puente Formation. In addition, Quaternary-aged deposits that include Pleistocene-aged nonmarine terrace deposits, Pleistocene-aged landslides, and Holocene alluvium also occur within the project alignment. There is potential for paleontological resources to be found in these rock units. Paleontological resources in the study area potentially include fossil remains, fossil localities, and formations that have produced fossil material in other nearby areas.

To assess the potential for paleontological resources in the project area, available maps, reports, and papers that pertain to the geology and paleontology of the lithologic units that underlie the proposed project were examined for documentation of fossil occurrences. In addition, a search of the records and archives of San Bernardino County Museum was conducted. A field survey of the project site was conducted to determine whether any fossils were present on the surface.

Table 2.21 provides a description and evaluation of the resources found in each lithologic unit that was mapped in the project vicinity. The locations of these formations in the vicinity of the project segment of SR-91 are not provided in this

Table 2.21 Lithologic Units in the Vicinity of the Project Segment of SR-91

Lithologic Unit	Paleontological Sensitivity	Description
Baker Canyon Member of the Ladd Formation	High	The Baker Canyon Member of the Ladd Formation can contain bivalve, gastropod, and cephalopod fossils that are up to 80 million years old.
Silverado Formation	High	The Silverado Formation can contain important plant fossils as well as many invertebrates.
Santiago Formation	High	The Santiago Formation has produced an important collection of fossils from invertebrates and leaves as well as the bones and teeth of lizards, snakes, turtles, crocodiles, birds, marsupials, and mammals.
Undifferentiated Sespe/Vaqueros Formation	High	The Undifferentiated Sespe/Vaqueros Formation has produced a diverse assemblage of both invertebrate and vertebrate fossils that have added to our understanding of the early Miocene. In addition, new species are continually being discovered whenever these units are encountered. As such, this formation has a high paleontological sensitivity rating.
Sycamore Canyon Member of the Puente Formation	High	The Sycamore Canyon Member of the Puente Formation can contain a diverse collection of fossils, including marine and terrestrial vertebrates, marine invertebrates, and marine and terrestrial plants from the late Miocene. These fossils help add to the body of scientific knowledge of life in the late Miocene. As such, this unit is considered to have a high paleontological sensitivity rating.
Nonmarine terrace deposits	High	The nonmarine terrace deposits can contain Pleistocene vertebrate fossils that are scientifically significant, as they add to our understanding of the diversity of life during Pleistocene times in Southern California. As such, these sediments have a high paleontological sensitivity rating.
Landslide deposits	Low	Although landslide deposits can occasionally contain the remains of animals that became trapped within the landslide as it was moving, these occur very infrequently. In addition, although landslide deposits can contain fossils within the bedrock units that moved within the slide mass, these have been transported away from the source area and are less important to science. In addition, much of the large landslide mapped within the project area in the vicinity of the Orange and Riverside County line is within the nonfossiliferous Santiago Peak Volcanics. Thus, landslide deposits are given a low sensitivity. However, any fossils found within these deposits should still be collected.
Recent alluvium	Low	Recent alluvium, because of its young age, generally does not contain fossils. As such, these recent alluvial deposits are assigned a low paleontological sensitivity rating.
Artificial fill	None	Artificial fill can contain fossils, but because it has been placed at its current location by humans, any fossils that may be in the fill matrix are out of context and would not be scientifically important. Thus, artificial fill has no paleontological sensitivity.

Source: *Paleontological Identification and Evaluation Report* (LSA Associates, Inc., June 2007).

environmental document in order to protect the resources from vandalism and unauthorized collecting.

2.12.3 Environmental Consequences

2.12.3.1 Build Alternative (Alternative 2)

The paleontological formations within the project area have a high potential for yielding significant fossils; therefore, potential direct adverse impacts to paleontological resources would result from ground-disturbing activities associated with the clearing of vegetation and soil, excavation, and construction of the additional eastbound lane and shoulder. In terms of excavation, the depth of the standard cut slope would typically be no deeper than 5 meters (m) (16 feet [ft]), although it may be up to 7 m (23 ft) in localized areas. Although construction would be a short-term activity, the loss of some fossil remains and the fossil-bearing rocks would be a permanent adverse impact of the proposed project based on the scientific significance of formations in the project area as described in Table 2.21. These effects would be addressed based on implementation of Measures P-1 and P-2, below.

2.12.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction of any of the proposed improvements to SR-91 and therefore would result in no adverse impacts to paleontological resources.

2.12.4 Avoidance, Minimization, and/or Mitigation Measures

Potential direct adverse impacts to paleontological resources would result from ground-disturbing activities associated with the clearing of vegetation and soil and excavation and construction of the additional eastbound lane and shoulder; therefore, this section describes recommended actions that avoid, minimize, or mitigate the potential adverse impacts of the construction of the SR-91 project on paleontological resources.

P-1 A detailed Paleontological Mitigation Plan (PMP) will be prepared during the final design phase of the proposed project. The PMP should be consistent with the guidelines of the Society of Vertebrate Paleontology as well as current Caltrans guidelines and should include but not be limited to the following: Attendance at the pregrade meeting by a qualified paleontologist or his/her representative. At this meeting the paleontologist will explain the likelihood for encountering paleontological resources, what resources may be

discovered, and the methods that will be employed if anything is discovered (see below).

- During construction excavation, a qualified vertebrate paleontologic monitor will initially be present on a full-time basis whenever excavation will occur within the sediments that have a high sensitivity rating and on a spot-check basis in sediments that have a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions and when they occur will be determined by the qualified Principal Paleontologist). The monitor will inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor will be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor will be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, the developer will consider using heavy equipment on site to assist in the removal and collection of large materials.
- Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these native sediments occasionally be spot-screened through one-eighth to one-twentieth-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, additional sediment samples (up to 3 cubic yards or 6,000 pounds) will be collected and processed through one-twentieth-inch mesh screens to recover additional fossils.
- Any recovered specimens will be prepared to the point of identification and permanent preservation. This includes the picking of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and the storage cost, and the addition of approved chemical hardeners/stabilizers to fragile specimens.
- Specimens will be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university that has a curator who can retrieve the specimens on request. Caltrans requires that a draft curation agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.

P-2 A detailed Paleontological Mitigation Report (PMR) will be completed, consistent with current Caltrans guidelines, at the end of the project. The PMR should include but not be limited to describing the methods and results of the monitoring program, even if the results are negative. If applicable, this will include an appended itemized inventory of identified specimens, discussions on the paleontological significance of any finds, and how they fit into the overall geological context of the area. This report will be presented to Caltrans for review; when the review process has been completed, the revised document will signify completion of the PMP. A copy of the final report and the accession inventory shall be forwarded to the repository institution, Caltrans, and any other interested parties.

2.13 Hazardous Materials and Hazardous Waste

The analysis summarized in this section is based on the *Initial Site Assessment* (Kleinfelder, Inc., April 2007), the *Aerially Deposited Lead Survey* (Kleinfelder, Inc., April 2007), and the *Asbestos Survey Report* (Kleinfelder, October 2007).

2.13.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include specific statutes governing hazardous waste and a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes. Other federal laws relating to hazardous materials and wastes include:

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

In addition to these acts, Executive Order No. 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved. Hazardous waste in California is regulated primarily under the authority of the federal RCRA and the California Health and Safety Code. Other California laws related to hazardous materials and wastes are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of those materials.

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

2.13.2 Affected Environment

The Initial Site Assessment (ISA) was prepared to determine whether the proposed project could be affected by any recorded or visible hazardous waste sites and to recommend appropriate avoidance, minimization, and mitigation measures. The ISA was based on a review of regulatory agency records, evaluation of historical uses on and in the immediate vicinity of the project site (based on topographic maps, city directories, and other sources), and site reconnaissance. The following agencies were contacted to obtain available information about sites that could pose potential environmental concerns to the proposed project site: the City of Anaheim Public Utilities Department, the California Department of Toxic Substances Control (DTSC), the Orange County Health Care Agency (HCA), and the Santa Ana Regional Water Quality Control Board (RWQCB).

The search of federal, State, and local regulatory agencies' published databases identified 11 sites in the vicinity of the project site. These sites are summarized in Table 2.22 and depicted on Figure 2-10. None of the 11 sites are within the limits of the proposed project.

The ISA revealed no evidence of recognized environmental conditions on the project site except for the following:

- **Aerially Deposited Lead (ADL):** ADL is a byproduct of internal combustion engines burning lead-containing fuels. ADL is deposited on the sides of roads and highways by passing cars and is often found in the soil adjacent to highways and roads.
- **Yellow paint and tape used for pavement marking:** Yellow paints made prior to 1995 may exceed the hazardous waste criteria under Title 22, California Code of Regulations (CCR) and require disposal in a Class I disposal facility authorized to accept this type of wastes.
- **Rails, bearing pads, support piers, expansion joint material in bridges, asphalt, and concrete:** These building materials may contain asbestos and, as a result, they are generally considered to include presumed asbestos-containing (PAC) materials.
- **Power pole-mounted transformers:** Transformers may contain polychlorinated biphenyls (PCBs).

Table 2.22 Sites Identified in Regulatory Agency Database Searches

Site	Database	Description
Parking lot 4225 Prado Road, Corona	CHMIRS	This site is approximately 113 m (370 ft) south of the project site. The property is listed due to the discovery of flammable drug waste in sealed containers in the property dumpster. The containers were removed from the property by the Hazmat Team under supervision of the Corona Fire Department.
Green River Golf Course 5215 Green River Road, Corona	CORTESE ERNS LUST USTFID	This site is approximately 322 m (1,056 ft) northwest of the project site. A total of 91 kilograms (kg) (200 pounds [lbs]) of pesticide and 155 liters (L) (41 gallons [gal]) of fungicide were illegally buried at this site. Investigation was underway as of December 31, 2002. In addition, a leaking underground storage tank (LUST) containing gasoline was discovered at this site. The contamination affected soil only. The case was closed on June 9, 1994.
Shell Service Station 4721 Green River Road, Corona	LUST RCRA USTCUPA	This site is approximately 310 m (1,017 ft) northwest of the project site. The documented impacts at this service station site include petroleum hydrocarbon impacts on soil and groundwater.
Retail business 4718 Green River Road, Corona	CHMIRS	This site is approximately 129 m (423 ft) northwest of the project site. A total of 0.5 kg (lbs.) of butyl nitrite and 0.5 kg (1 lb) of organic powder were illegally dumped on September 6, 1995.
Chevron Station No. 9-0236 4710 Green River Road, Corona	CORTESE LUST RCRA USTCUPA USTFID	This site is approximately 129 m (423 ft) northwest of the project site. A LUST containing gasoline was discovered at this site. The contamination affected soil only. The case was closed on March 29, 2000.
Retail Business (a restaurant) 4711 Green River Road, Corona	CHMIRS	This site is approximately 225 m (738 ft) northwest of the project site. On February 2, 2000, an unknown quantity of sewage reportedly overflowed from the restaurant facilities into the storm drain. The clean-up is reported to have been performed by the reporting party.
Royal Cleaners 4300 Green River Road, Corona	CHMIRS RCRISG	This site is approximately 274 m (898 ft) south of the project site. Illegally dumped waste oil was discovered at this site on October 4, 1995. This facility is listed as a small quantity generator. No other violations are reported for the facility.
Former Industrial Asphalt Plant 9010 Santa Ana Canyon Road, Anaheim	CORTESE LUST VCP	This site is approximately 73 m (240 ft) south of the project site. The documented impacts at this site include petroleum hydrocarbon impacts on soil only (not groundwater). The soil was remediated and granted closure by the Orange County HCA.
Robertson's Ready Mix 9010 Santa Ana Canyon Road, Anaheim	LUST	This site is approximately 435 m (1,427 ft) south of the project site. The documented impacts at this site include concentrations of petroleum hydrocarbons in soil and groundwater within an isolated area.
Thomas Ranch South of Palisades Drive and west of Serfas Club Drive in Corona	State site	This site is approximately 1,394 m (4,573 ft) southeast of the project site. The facility consists of four former waste disposal ponds used between 1941 and 1942 by oil companies. The documented impacts at this site include acid and petroleum constituents in soil and groundwater. DTSC currently is responsible for oversight of the facility.
McDonnell Douglas Rocket Fuel Testing Facility Gypsum Canyon, unincorporated Orange County	Environmental documents search	This site is in Gypsum Canyon approximately 1.3 km (0.8 mi) south of the project site. The impact at this site is the suspected release of volatile organic compounds (VOCs) from rocket fuel into groundwater.

Source: *Initial Site Assessment* (Kleinfelder, Inc., April 2007).

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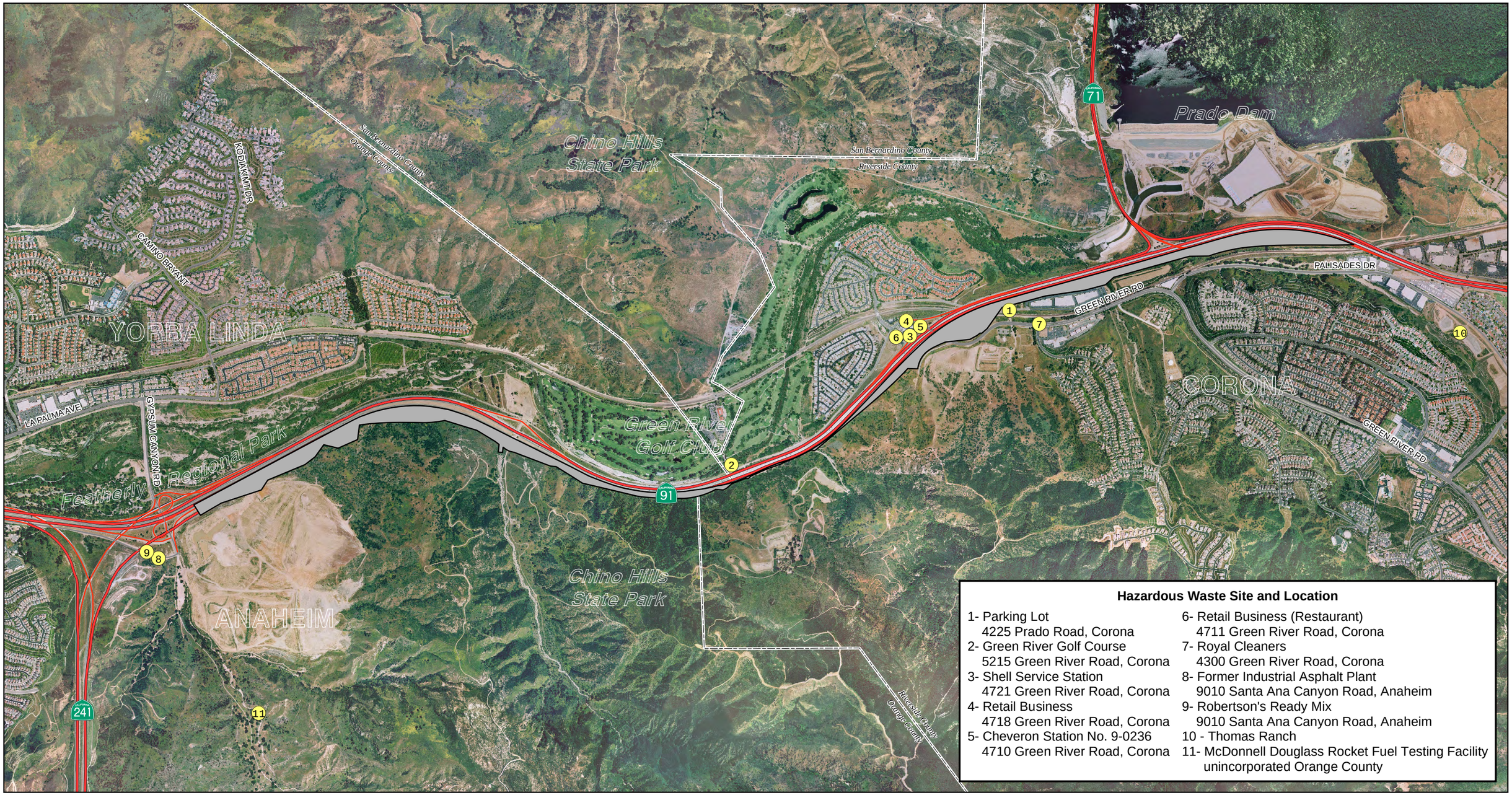

N

0 1,000 2,000 FEET

0 305 610 METERS

LEGEND

Project Location

Hazardous Waste Site

SOURCE: Eagle Aerial , 2006.

FIGURE 2-10

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

Hazardous Waste Sites

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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2.13.3 Environmental Consequences

2.13.3.1 Build Alternative (Alternative 2)

Alternative 2 would result in construction in the project limits. The potential areas of concern listed earlier in Table 2.22 have been identified in the vicinity of the project limits. Construction of the proposed project would not result in any direct impacts on any of the areas of concern. For the following reasons, the ISA found that none of these facilities would impact or be impacted by the construction and operation of the proposed project:

- **Parking lot (4225 Prado Road, Corona).** Due to the nature of this incident (drug waste found in the property dumpster) and the distance of this parking lot from the project limits, it is unlikely that this incident has had an environmental impact on the project site.
- **Green River Golf Course (5215 Green River Road, Corona).** Because the release contaminated soil only and the case is closed, it is unlikely that this facility has had an environmental impact on the project site.
- **Shell Service Station (4721 Green River Road, Corona).** This site does not pose an environmental concern with respect to the proposed project due to its distance from the proposed project and the groundwater gradient in this area flows away from SR-91 and the project limits.
- **Retail Business (4718 Green River Road, Corona).** Due to the nature of this incident (illegally dumped chemicals), it is unlikely that this incident has had an environmental impact on the project site.
- **Chevron Station No. 9-0236 (4710 Green River Road, Corona).** Because the release contaminated soil only and the case is closed, it is unlikely that this facility has had an environmental impact on the project site.
- **Retail Business (4711 Green River Road, Corona).** Due to the direction and distance of the facility from the project site, it is unlikely to have had an impact on the project site.
- **Royal Cleaners (4300 Green River Road, Corona).** Due to the nature of the listing (sewage spill) and the direction and distance, it is unlikely to have had an impact on the project site.
- **Former Industrial Asphalt Plant (9010 Santa Ana Canyon Road, Anaheim).** This site does not pose an environmental concern with respect to the proposed project because the petroleum hydrocarbons did not impact groundwater, the soil

has been remediated, and the site has been granted closure by the Orange County HCA.

- **Robertson's Ready Mix (9010 Santa Ana Canyon Road, Anaheim).** This site does not pose an environmental concern with respect to the proposed project because the impact appears to be limited to an isolated area of the facility.
- **Thomas Ranch (South of Palisades Drive and West of Serfas Club Drive, Corona).** This site is not considered an environmental concern with respect to the proposed project because it is located more than 1,394 m (4,573 ft) southeast of the project site, the impacts at this site appear to be confined to the facility, and the impacts are currently being remediated.
- **McDonnell Douglas Rocket Fuel Testing Facility (Gypsum Canyon).** This site does not pose an environmental concern with respect to the proposed project because it is located 1.3 km (0.8 mi) south of the project site and the impacted groundwater is believed to be to the west of the project area.

ADL is lead deposited within unpaved areas or formerly unpaved areas, primarily from vehicle emissions. DTSC allows lead containing soil with less than 1,411 milligrams per kilogram (mg/kg) of total lead to be reused within Caltrans right-of-way if it is placed at least 1.5 m (5 ft) above the groundwater level and is covered by 0.3 m (1 ft) of clean soil. DTSC allows lead-containing soil with less than 3,397 mg/kg of total lead to be reused within Caltrans right-of-way if it is placed at least 1.5 m (5 ft) above the groundwater level and is covered by pavement.

Based on the *Aerially Deposited Lead Survey*, soils within Caltrans right-of-way east of the access road in Riverside County can be reused as fill within the project right-of-way, provided it is placed a minimum of 1.5 m (5 ft) above the maximum water table and is covered by pavement. Soil in the Caltrans right-of-way in Orange County and west of the access road in Riverside County can be reused within the project right-of-way, provided it is placed a minimum of 1.5 m (5 ft) above the maximum water table and is covered by clean soil.

Due to the distance from SR-91, it is unlikely that soils excavated at the proposed sound wall locations outside of the Caltrans right-of-way would contain high levels of ADL. However, soils excavated at sound wall locations outside of the Caltrans right-of-way can be imported into the Caltrans right-of-way for reuse if the environmental requirements in the Caltrans Standard Specifications are complied with and the soil is tested for pH, volatile organic compounds, Title 22 metals, soluble metals, and total petroleum hydrocarbons.

Construction activities for the proposed project may result in the removal of existing yellow traffic striping and pavement marking materials (including paint, thermoplastic, permanent tape, and temporary paint). Yellow paints made prior to 1995 may exceed hazardous waste criteria under Title 22, California Code of Regulations, and would require disposal in a Class I disposal site.

New uses of asbestos-containing materials (ACM) were banned by the United States Environmental Protection Agency (EPA) in 1989. Revisions to regulations issued by the Occupational Safety and Health Administration (OSHA, June 30, 1995) require that all thermal system insulation, surfacing materials, and resilient flooring materials installed prior to 1981 be considered PAC materials and treated accordingly. ACM have also been documented in rail shim sheet packing, bearing pads, support piers, and expansion joint material of bridges, asphalt, and concrete. To rebut the designation as PAC, OSHA requires that these materials be surveyed, and assessed in accordance with 40 Code of Federal Regulations (CFR) 763 (Asbestos Hazard Emergency Response Act, or AHERA). Therefore, an Asbestos Survey of the five bridges that would be widened as part of the proposed project, as specified in Avoidance, Minimization, and Compensation Measure H-3, was completed on October 8, 2007. The survey included sampling of all suspect asbestos materials that would be disturbed as part of the project. Asbestos was detected within three building material samples in the guardrail post shims of the West Prado Overhead, West Connector Overpass, and the SR-91/SR-71 Connector. Caltrans will adhere to Standard Special Provision 5-1.06 to remove the ACM identified in the *Asbestos Survey Report*.

Alternative 2 would not require the acquisition of privately owned structures outside Caltrans right-of-way. Therefore, there are no impacts associated with ACM or PAC materials associated with property anticipated to be acquired for the proposed project.

Transformers observed in the project area did not appear to be leaking. Accordingly, there is not expected to be an adverse impact to the proposed project as a result of the presence of transformers in the area.

2.13.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the disturbance of soil containing lead, the removal of pavement markings, or demolition or removal of any potential PAC. In addition, similar to the Build Alternative, the existing hazardous materials sites in the site vicinity would not impact the SR-91 segment. Therefore, the No Build

Alternative would not result in adverse impacts related to hazardous materials and wastes.

2.13.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes recommended actions that avoid, minimize, or compensate the adverse project impacts related to hazardous materials and wastes. Avoidance, Minimization, and Compensation Measure H-3 has been complied with prior to approval of this final environmental document; an *Asbestos Survey Report* was prepared on October 8; 2007. Consistent with Caltrans policies and standard specifications and based on the results of the *Asbestos Survey Report*, Measure H-4 was added to the list below.

H-1 During project construction, soil in the project limits in Riverside County between Stations 5+50 and 39+60 may be reused within Caltrans right-of-way provided it is placed a minimum of 1.5 meters (m) (5 feet [ft]) above the maximum water table and is covered by pavement. Soil in Orange County between Station 141+88 and Riverside County Station 5+50 may be reused within Caltrans right-of-way provided it is placed a minimum of 1.5 m (5 ft) above the maximum water table and is covered by clean soil. Soil export will be minimized and excess soil generated during project construction, if any, will be disposed of at a non-Resource Conservation and Recovery Act (RCRA) California hazardous waste at a Class I hazardous waste disposal facility. Soils excavated at sound wall locations outside of Caltrans right-of-way may be imported into Caltrans right-of-way for reuse if the environmental requirements in the Caltrans Standard Specifications are complied with and the soil is tested for pH, volatile organic compounds, Title 22 metals, soluble metals, and total petroleum hydrocarbons.

H-2 Pavement markings and tapes made with yellow paints manufactured prior to 1995 and removed during project construction will be disposed of at a Class I landfill.

H-3 Prior to the final environmental document, presumed asbestos-containing (PAC) materials, including rails, bearing pads, support piers, expansion joint material of bridges, asphalt, and concrete, will be surveyed, and assessed, in compliance with 40 CFR 763.

H-4 During construction, if bridge structures not previously tested for asbestos are anticipated to be disturbed or if suspect asbestos-containing materials are

discovered, the contractor shall stop work and these materials will be surveyed and assessed for asbestos prior to disturbance.

2.14 Air Quality

The analysis summarized in this section is based on the *Air Quality Assessment for Eastbound SR-91 Lane Addition between SR-241 and SR-71* (Mestre Greve Associates, and LSA Associates, Inc., June 2007).

2.14.1 Regulatory Setting

The Clean Air Act (CAA) as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns. These criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2).

Under the 1990 CAA Amendments, the United States Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the State Implementation Plan (SIP) for achieving the goals of the CAA requirements. Conformity with the CAA takes place at the regional and project levels. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards for CO, NO_2, O_3, and PM. California is in attainment for the other criteria pollutants (e.g., Pb and SO_2). At the regional level, Regional Transportation Plans (RTPs) are developed that include all the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the CAA are met. If the conformity analysis is successful, the regional planning organization such as the Southern California Association of Governments (SCAG) for Southern California (Los Angeles, Orange, and western Riverside Counties) and the appropriate federal agencies such as the FHWA make the determination that the RTP is in conformity with the SIP for achieving the goals of the CAA. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of a proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet the regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires a hotspot analysis if an area is nonattainment or maintenance for CO and/or PM. A region is a nonattainment area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called maintenance areas. The hotspot analysis is essentially the same, for technical purposes, as CO or PM analysis performed for NEPA and CEQA purposes. Conformity does include some specific standards for projects that require a hotspot analysis. In general, projects must not cause the CO standard to be violated, and in nonattainment areas the project must not cause any increase in the number and severity of violations. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

2.14.1.1 Climate Change

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas[1] (GHG) emissions reduction and climate change research and policy has increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05. The goal of this EO is to reduce California's GHG emissions to: (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below the 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan that includes market mechanisms and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." EO S-20-06 further directs state agencies

[1] Greenhouse gases related to human activity include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23, HFC-134a, and HFC-152a.

to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change.

2.14.2 Affected Environment

2.14.2.1 Climatic Conditions

The project site is located in the South Coast Air Basin (Basin) that includes Orange County and the nondesert parts of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulation in the Basin is administered by the South Coast Air Quality Management District (SCAQMD). The Basin climate is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern boundary of the Basin, and high mountains surround the rest of the Basin. The region lies in the semipermanent high-pressure zone of the eastern Pacific. The resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, and Santa Ana wind conditions do occur.

Temperatures are normally mild, except the summer months, which commonly bring substantially higher temperatures. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas; however, in all parts of the Basin, temperatures well above 100 degrees Fahrenheit (°F) have been recorded in recent years. The annual average temperature in the basin is approximately 62°F.

Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night the wind generally slows and reverses direction, traveling toward the sea. Wind direction will be altered by local canyons, with wind tending to flow parallel to the canyons. During the transition period from one wind pattern to the other, the dominant wind direction rotates into the south and causes a minor wind direction maximum from the south. The frequency of calm winds (less than 2 miles per hour [mph]) is less than 10 percent. Therefore, there is little stagnation in the project vicinity, especially during busy daytime traffic hours.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunder showers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Yorba Linda Station climatological station monitored precipitation from July 1948 to June 2007. Average monthly rainfall measured in Yorba Linda during that period varied from 3.27 inches in January to 0.34 inch or less between May and October, with an annual total of 13.55 inches.[1] Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high, the nearly permanent subtropical high of the North Pacific Ocean. This inversion limits the vertical dispersion of air contaminants, holding them relatively near to the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid- to late afternoon on hot summer days when smog appears to suddenly clear up. Winter inversions frequently break by midmorning. Inversion layers are important in determining O_3 formation. O_3 and its precursors (compounds that can be converted into O_3) will mix and react to produce higher concentrations under an inversion.

2.14.2.2 Monitored Air Quality

The project site is located in the SCAQMD jurisdiction. The SCAQMD maintains ambient air quality monitoring stations throughout the Basin. The La Habra and Norco-Norconian monitoring stations are the closest to the project site. The west end of the project area is represented by measurements made at the La Habra station, which is approximately 24 kilometers (km) (15 miles [mi]) northwest of the project site in the City of La Habra. The east end of the project area is represented by measurements made at the Norco-Norconian station, which is approximately 8 km (5 mi) east of the project site at the Corona (Norco) Naval Warfare Assessment Station.

The pollutants measured at the La Habra station include CO, NO_2, and O_3. The only pollutant monitored at the Norco-Norconian station is PM_{10}. $PM_{2.5}$ (fine particulate

[1] Western Regional Climate Center, www.wrcc.dri.edu.

matter with a diameter of 2.5 microns or smaller) is not monitored at the La Habra and Norco-Norconian stations, but is measured at the Ontario station in the City of Ontario, approximately 19.3 km (12 mi) north of the project site. The southern end of the area represented by the Ontario site is located just north of the project site. Table 2.23 summarizes air quality data collected from these three monitoring stations and lists the State and federal standards for the listed pollutants.

From Table 2.23, it can be seen that monitored CO levels are below the relevant State and federal standards. One-hour O_3 levels exceeded the State standard from 2001 to 2004 and the federal standard in 2003. Eight-hour O_3 levels exceeded the federal standard twice in 2001 and 2003. The PM_{10} level at the monitoring station closest to the project area (Norco-Norconian) exceeded the State standard from 11 to 18 days per year (up to 89 days per year if measurements were taken daily) in the past five years and did not exceed the federal PM_{10} standard in the past five years. The $PM_{2.5}$ levels exceeded the federal standard from two to three times per year in the past four years. The NO_2 level in the project area did not exceed the State or federal standard in the past five years. The attainment status in the entire Basin is summarized in Table 2.24.

Table 2.23 Air Quality Monitoring (2001–2005)

Pollutant	California Standard	National Standard	Year	Max Level	Days State Standard Exceeded[4]	Days National Standard Exceeded[4, 5]
O_3[1]	0.09 parts per million (ppm) for 1 hour	None	2005	0.094	0	n/a
			2004	0.099	6	n/a
			2003	0.165	7	n/a
			2002	0.121	3	n/a
			2001	0.114	4	n/a
O_3[1]	0.070 ppm for 8 hours	0.08 ppm for 8 hours	2005	0.075	--	0
			2004	0.079	--	0
			2003	0.087	--	2
			2002	0.079	--	0
			2001	0.089	--	2
CO[1] (1 hour)	20 ppm for 1 hour	35 ppm for 1 hour	2005	6.8	0	0
			2004	7.4	0	0
			2003	8.4	0	0
			2002	10.2	0	0
			2001	10.7	0	0
CO[1] (8 hour)	9.0 ppm for 8 hour	9 ppm for 8 hours	2005	3.07	0	0
			2004	4.09	0	0
			2003	4.29	0	0
			2002	4.49	0	0
			2001	4.67	0	0
NO_2[1] (1 hour)	0.25 ppm for 1 hour	None	2005	0.09	0	n/a
			2004	0.105	0	n/a
			2003	0.158	0	n/a
			2002	0.116	0	n/a
			2001	0.13	0	n/a

Pollutant	California Standard	National Standard	Year	Max Level	Days State Standard Exceeded[4]	Days National Standard Exceeded[4,5]
NO_2[1] (Annual)	None	0.053 ppm Annual Arithmetic Mean	2005	0.025	n/a	no
			2004	0.025	n/a	no
			2003	0.028	n/a	no
			2002	0.025	n/a	no
			2001	0.027	n/a	no
Particulates PM_{10}[2] (24 hour)	50 micrograms per cubic meter ($\mu g/m^3$) for 24 hours	150 $\mu g/m^3$ for 24 hours	2005	64	--	--
			2004	76	11/70	0/0
			2003	116	14/89	0/0
			2002	78	17/ --	0/0
			2001	109	18/ --	0/0
Particulates PM_{10}[2] (Annual)	20 $\mu g/m^3$ Annual Arithmetic Mean	50 $\mu g/m^3$ Annual Arithmetic Mean	2005	--	--	--
			2004	38	Yes	No
			2003	41	Yes	No
			2002	44	Yes	No
			2001	--	--	--
Particulates $PM_{2.5}$[3] (24 hour)	No Standards	35 $\mu g/m^3$ for 24 hr	2005	88	n/a	1
			2004	86	n/a	2
			2003	89	n/a	3
			2002	65	n/a	0
			2001	71	n/a	2
Particulates $PM_{2.5}$[3] (Annual)	12 $\mu g/m^3$ Annual Arithmetic Mean	15 $\mu g/m^3$ Annual Arithmetic Mean	2005	19	Yes	Yes
			2004	23	Yes	Yes
			2003	24	Yes	Yes
			2002	25	Yes	Yes
			2001	27	Yes	Yes
Particulates PM_{10}[3] (24 hour)	50 $\mu g/m^3$ for 24 hours	150 $\mu g/m^3$ for 24 hours	2005	76	--	--
			2004	93	14/ --	0/0
			2003	149	15/90	0/0
			2002	91	23/ --	0/0
			2001	166	27/154	1/6
Particulates PM_{10}[3] (Annual)	20 $\mu g/m^3$ Annual Arithmetic Mean	None	2005	--	--	--
			2004	43	Yes	n/a
			2003	43	Yes	n/a
			2002	45	Yes	n/a
			2001	52	Yes	n/a

Source: *Air Quality Assessment for Eastbound SR-91 Lane Addition between SR-241 and SR-71* (Mestre Greve Associates, and LSA Associates, Inc., June 2007).
-- Data Not Reported
n/a = no applicable standard
[1] Measured at the La Habra monitoring station
[2] Measured at the Norco-Norconian monitoring station
[3] Measured at the Ontario monitoring station
[4] For the annual averaging times, a yes or no response is given if the annual average concentration exceeded the applicable standard. The first number shown in the Days State Standard Exceeded column is the actual number of days measured that State standards were exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken daily.
[5] EPA revoked the PM_{10} national standard in December 2006 and redesignated the Basin as in attainment for CO effective June 11, 2007.

Table 2.24 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	Revoked June 2005
O_3 8-hour	Not Applicable (No state standard)	Severe 17 Nonattainment
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Serious Nonattainment[1]
NO_2	Attainment	Attainment/Maintenance
All others	Attainment/Unclassified	Attainment/Unclassified

Source: *Air Quality Assessment for Eastbound SR-91 Lane Addition between SR-241 and SR-71* (Mestre Greve Associates, and LSA Associates, Inc., June 2007).

[1] Effective June 11, 2007, the area was redesignated as in attainment for the federal CO standard.

2.14.2.3 Climate Change

According to a recent white paper by the Association of Environmental Professionals,[1] "an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases."

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emissions reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all humanmade GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program (December 2006).

One of the main strategies in Caltrans Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources such as automobiles occur at stop-and-go speeds (0–25 mph) and speeds over 55 mph. Relieving congestion by enhancing operations and improving travel times in high-congestion travel corridors will lead to an overall reduction in GHG emissions.

[1] Hendrix, Michael and Wilson, Cori. Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents (March 5, 2007), p. 2.

Caltrans recognizes the concern that carbon dioxide emissions raise for climate change. However, modeling and gauging the impacts associated with an increase in GHG emissions levels, including carbon dioxide, at the project level is not currently possible. No federal, State, or regional regulatory agency has provided methodology or criteria for GHG emission and climate change impact analysis. Therefore, Caltrans is unable to provide a scientific- or regulatory-based conclusion regarding whether the project's contribution to climate change is cumulatively considerable.

Caltrans continues to be actively involved on the Governor's Climate Action Team as ARB works to implement AB 1493 and AB 32. As part of the *Climate Action Program at Caltrans* (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light- and heavy-duty trucks. However it is important to note that the control of the fuel economy standards is held by the United States Environmental Protection Agency (EPA) and ARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California, Davis.

2.14.3 Environmental Consequences

2.14.3.1 Build Alternative (Alternative 2)

Permanent Impacts

Regional Air Quality Conformity

The proposed project is fully funded and is in the 2004 RTP, which was found to conform by the FHWA/Federal Transit Administration (FTA) on June 7, 2004. The project is also included in the 2006 Regional Transportation Improvement Program (RTIP) (Project ID: ORA120336, Model Number 0312, SR-91 eastbound lane addition between SR-241 & SR-71 & improve northbound SR-71 connector from SR-91 to STD; one lane and shoulder width). The RTIP was found to conform by FHWA/FTA on October 2, 2006. The design concept and scope of the proposed project is consistent with the project description in the 2004 RTP and the 2006 RTIP.

Local Air Quality Conformity

The additional eastbound lane would reduce congestion and delays to vehicles along SR-91 in the project area. Although traffic volumes would be expected to increase between 3.3 and 3.5 percent on eastbound SR-91 by 2030 with implementation of the proposed project, the additional eastbound lane would decrease congestion, lessen stop-and-go conditions, and result in higher speeds through the project area when compared to the No Build Alternative. All these factors would result in a decrease of air pollutants emitted by motor vehicles on the project segment of SR-91.

Because the project is located in a nonattainment area for the federal CO, $PM_{2.5}$, and PM_{10} standards, a local hotspot analysis for CO, $PM_{2.5}$, and PM_{10} is required for conformity purposes.[1] Based on the results of the analysis of the detailed conformity-requirement decision flow charts provided in the *Air Quality Assessment,* the project is not expected to result in any CO impacts, and no additional analysis is required in accordance with the protocol. Therefore, detailed CO hotspot analysis was not required. Based on a qualitative assessment of $PM_{2.5}$ and PM_{10}, the proposed project would not result in an impact to $PM_{2.5}$ or PM_{10}, and no further analysis is required.

The Transportation Conformity Working Group (TCWG) met in June 2006 and determined that the project was a project of air quality concern (POAQC). POAQC include new or expanded highway projects that have a substantial number of or an increase in diesel vehicles and projects in or affecting locations identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan as sites of possible violation. POAQC are required to perform an analysis of PM_{10} and $PM_{2.5}$ hotspot impacts. PM_{10} and $PM_{2.5}$ analyses were performed for the project, and the analysis was deemed acceptable for NEPA circulation by the TCWG in September 2006 (Appendix J).

On October 29, 2007, FHWA found that the Conformity Determination for the proposed project conforms to the SIP in accordance with 40 CFR Part 93 (Appendix J).

[1] Effective June 11, 2007, the region was designated as in attainment for the federal CO standard. However, the air quality analysis was started prior to the EPA's May 11, 2007, approval of the redesignation. Therefore, for the purposes of this analysis, the project is located in a nonattainment area.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are NAAQS, the EPA also regulates air toxics. Most air toxics originate from man-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries). Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the CAA. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. Because MSAT emissions are proportional to volatile organic compound (VOC) emissions, VOC emissions were analyzed to determine potential project impacts to MSAT emissions.

Generally, VOC emissions are higher at slower speeds and increase with speed at speeds above 80 kilometers per hour (kph) (50 miles per hour [mph]]. The proposed project would not affect traffic volumes in 2010, but would increase speeds and reduce stop-and-go traffic volumes in 2010. Because average speeds with the project are expected to be in the range of 32 to 56 kph (20 to 35 mph), the increased speed resulting from project implementation would decrease VOC emissions compared to the No Build Alternative. In 2030, MSAT emissions without the project are projected to be lower than current conditions. The project could result in a slight increase in VOC emissions in 2030 when compared to the No Build Alternative due to a projected increase in traffic of 3.3 percent. However, the proposed project would decrease congestion and increase average speeds on the project segment of SR-91 by 2030. If the project increases speeds by more than 6.4 kph (4 mph), the MSAT emissions would be the same in 2030 with or without the proposed project.

Climate Change

As discussed in Section 2.6, Traffic and Transportation, vehicle miles traveled (VMT) and vehicle hours traveled (VHT) were estimated for 2030 with and without the proposed project (see Table 2.16, presented previously). The proposed project would reduce congestion and improve VMT and VHT on eastbound SR-91 from Coal Canyon Road to SR-71. Reduction of congestion and an increase in traveling speed decreases vehicle emissions, which would reduce carbon dioxide emissions.

Construction Impacts

Short-term impacts to air quality under the Build Alternative would occur during minor grading/trenching, new pavement construction and the restriping phase. Additional sources of construction-related emissions include:

- Exhaust emissions and potential odors from construction equipment used on the construction site as well as the vehicles used to transport materials to and from the site; and
- Exhaust emissions from the motor vehicles of the construction crew.

Project construction would result in temporary emissions of CO, NO_X, reactive organic gases (ROG), and PM_{10}. Stationary or mobile-powered on-site construction equipment includes trucks, tractors, signal boards, excavators, backhoes, concrete saws, crushing and/or processing equipment, graders, trenchers, pavers, and other paving equipment. Based on the relatively low number of daily work trips required for project construction, construction worker trips are not anticipated to substantially contribute to or affect traffic flow on local roads and are therefore not considered to have a substantial impact on air quality.

Measures provided later in Section 2.14.4 would require construction vehicles and equipment to be equipped with State-mandated emission control devices that would minimize construction-related emissions of CO, NO_X, ROG, and PM_{10}. Short-term construction PM_{10} emissions would be reduced with implementation of dust suppression measures.

Asbestos can be released from serpentine and ultramafic rocks when the rock is broken or crushed. According to the Governor's Office of Planning and Research and the California Department of Conservation, Division of Mines and Geology, there are no occurrences of serpentine or ultramafic rock in the vicinity of the project segment of SR-91 or in either Riverside or Orange Counties. However, there is a possibility that naturally occurring asbestos, serpentine, or ultramafic rock could be discovered during grading operations.

2.14.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction of any project-related improvements on the project segment of SR-91 and therefore would not result in temporary construction-related air quality impacts. The No Build Alternative would not reduce congestion and delays to vehicles on the project segment of SR-91. The *Air Quality Assessment* found that in 2010 VOC and diesel particulate matter

emissions would be the same with or without the project and would increase slightly with the project in 2030. In 2010, MSAT emissions would be the same with or without the project and would be lower in 2030 with the project.

2.14.4 Avoidance, Minimization, and/or Mitigation Measures

The following Standard Conditions identified by the SCAQMD and Caltrans would be implemented during construction of the proposed project and would reduce or minimize air pollutant emissions associated with construction activities.

2.14.4.1 SCAQMD Standard Conditions

SC-1 The construction contractor will adhere to the requirements of the South Coast Air Quality Management District (SCAQMD) rules and regulations on cutback and emulsified asphalt paving materials.

SC-2 The construction contractor will adhere to the requirements of SCAQMD Rule 403. The Required Best Available Control Measures (BACMs) specified in Table 1 in the SCAQMD Rule 403: Fugitive Dust Control (June 3, 2005) will be incorporated into the project construction. The Required BACMs are listed in Table 7 in the *Air Quality Analysis*.

2.14.4.2 Caltrans Standard Specifications

Caltrans Standard Specifications for construction (Sections 10 and 18 for dust control and Section 39-3.06 for asphalt concrete plant) would be adhered to during construction of the proposed project to reduce emissions as a result of construction equipment operations and construction activities, and also to reduce fugitive dust. These standard specifications are listed below.

SC-3 All disturbed areas, including storage piles that are not being actively used for construction purposes, will be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, and/or vegetative ground cover, as appropriate.

SC-4 All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized for dust emissions using water and/or chemical stabilizers/suppressants.

SC-5 All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled for fugitive dust emissions by using applications of water and/or by presoaking.

SC-6 When material is transported off site, it will be covered or effectively wetted to limit visible dust emissions, or at least 152 millimeters (6 inches) of freeboard space from the top of the container will be maintained.

SC-7 All operations will limit or expeditiously remove mud accumulation 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.

SC-8 Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, those piles will be effectively stabilized for fugitive dust emissions using sufficient water and/or chemical stabilizers/ suppressants.

SC-9 Traffic speeds on unpaved roads will be limited to 24 kilometers per hour (kph) (15 miles per hour [mph]).

SC-10 Sandbags or other erosion control measures will be installed to prevent silt runoff to public roads from sites with a slope greater than 1 percent.

SC-11 Wheel washers for all exiting trucks will be installed, or all trucks and equipment will be washed off before leaving the site.

SC-12 Wind breaks will be installed at the windward side(s) of construction areas.

SC-13 Excavation and grading activity will be suspended when winds exceed 32 kph (20 mph).

SC-14 The total area subject to excavation, grading, and other construction activity at any one time will be limited to the extent feasible consistent with the overall construction activities underway.

Compliance with these standard SCAQMD and Caltrans conditions would substantially reduce fugitive dust (PM_{10}) and equipment emissions generated during construction of the proposed project.

In the event that naturally occurring asbestos, serpentine, and/or ultramafic rock is discovered during grading operations, the following measure would be adhered to:

AQ-1 In the event that naturally occurring asbestos, serpentine, or ultramafic rock is discovered during grading operations, the construction contractor will adhere to Section 93105, Title 17 of the California Code of Regulations. The South Coast Air Quality Management District (SCAQMD) will be notified by the next business day, and the following measures will be implemented within 24 hours:

- Unpaved areas subject to vehicle traffic will be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, and/or covered with material that contains less than 0.25 percent asbestos.
- The speed of any vehicles and equipment traveling across unpaved areas must be no more than 24 kph (15 mph) unless the road surface and surrounding area are sufficiently stabilized to prevent vehicles and equipment traveling more than 24 kph (15 mph) from emitting dust that is visible crossing the project boundaries.
- Storage piles and disturbed areas not subject to vehicular traffic will be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, and/or covered with material that contains less than 0.25 percent asbestos.
- Activities must be conducted so that no track-out from any road construction project is visible on any paved road open to the public.
- Equipment and operations must not cause the emission of any dust that is visible crossing the project boundary.

SCAQMD Rule 403 requires that "Large Projects" implement additional measures. A Large Project is defined as "…any active operations on property which contains 20 or more hectares (ha) (50 or more acres [ac]) of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic meters (5,000 cubic yards) or more three times during the most recent 365-day period." Depending on the scheduling of grading, the proposed project may be considered a Large Project, and the following measure would be implemented:

AQ-2 In the event that the proposed project is classified as a "Large Project" under SCAQMD Rule 403: Fugitive Dust Control (June 3, 2005), the construction contractor will:

- Comply with the Dust Control Measures for Large Operations (SCAQMD Rule 403: Fugitive Dust Control [June 3, 2005], Table 2) as listed in Table 8 in the *Air Quality Analysis*.
- Submit a fully executed Large Operation Notification (SCAQMD Form 403N) to the SCAQMD Executive Officer within seven days of qualifying as a Large Operation.
- Include, as part of the notification, the names, addresses, and phone numbers of the persons responsible for the submittal, and include a map depicting the location of the site.
- Maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years, and make such records available to the SCAQMD Executive Officer on request.
- Install and maintain project signage with project contact signage that meets the minimum standards of the SCAQMD Rule 403: Fugitive Dust Control (June 3, 2005), prior to initiating any earthmoving activities.
- Identify a dust control supervisor, who is employed by or contracted with the property owner/developer, is on the site or available on-site within 30 minutes during working hours, has the authority to expeditiously implement sufficient dust mitigation measures to ensure compliance with all Rule requirements, and has completed the SCAQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for that class.
- Notify the SCAQMD Executive Officer in writing within 30 days after the site no longer qualifies as a Large Operation.

2.15 Noise

This section is based on the *Traffic Noise Impact Technical Report* (Wieland Associates, Inc., and LSA Associates, Inc., May 2007). A Noise Abatement Decision Report was not required to be prepared because the *Traffic Noise Impact Technical Report* was started prior to October 1, 2006.

2.15.1 Regulatory Setting

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

2.15.1.1 California Environmental Quality Act

CEQA requires a strictly no-build versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant adverse noise impact under CEQA, then CEQA requires that mitigation measures be incorporated into the project unless such measures are not feasible.

2.15.1.2 National Environmental Policy Act and 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain Noise Abatement Criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). Table 2.25.A lists the NAC for use in the NEPA 23 CFR 772 analysis.

Table 2.25.B lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

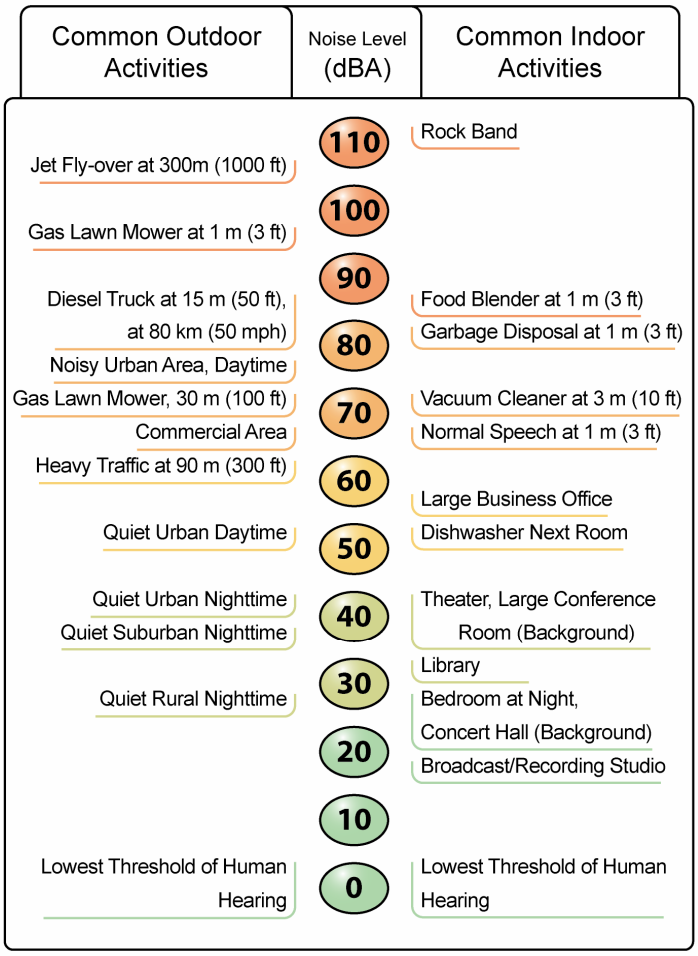
In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects* (October 1998), a noise impact occurs

Table 2.25.A Noise Abatement Criteria

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

Source: *Traffic Noise Impact Technical Report* (Wieland Associates, Inc., July 2006).

Table 2.25.B Noise Levels of Common Activities



when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

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

Caltrans *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance of the proposed noise wall, the absolute noise level, build versus existing noise levels, environmental impacts of abatement, public and local agencies' input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

2.15.2 Affected Environment

2.15.2.1 Surrounding Land Use and Sensitive Receptors

The land uses on the north side of SR-91 in the study area consist of Featherly Regional Park, the Santa Ana River Trail, Chino Hills State Park, the Green River Golf Club, the Green River Village mobile home community, a single-family residence at the intersection of Green River Road and Crestridge Drive, single-family residences in the gated Green River community, commercial buildings (gas stations and restaurants) adjacent to the westbound Green River Road on-ramp, and Chino Hills State Park. The commercial buildings are not considered noise-sensitive receptors, as they do not have outdoor dining areas. Green River Golf Club was excluded from this study because the previous owners indicated that they do not want a sound wall blocking the view to their property from SR-91 (letter dated February 9, 2006, and included as Enclosure 1 in the *Traffic Noise Impact Technical Report*). However, the golf course is considered a location of transient use. Therefore, the

Green River Golf Club does not qualify for noise abatement. Featherly Regional Park and Chino Hills State Park are also not considered sensitive receptors because within the study area there are no picnic areas or campsites within these parks; the only facilities are bike trails or walking trails, which are only subject to transient use.

The land uses on the south side of SR-91 in the study area consist of Chino Hills State Park, an equestrian facility with a horse riding area and residences, a church, restaurants with outdoor dining areas, a daycare center, and three hilltop residential communities.

2.15.2.2 Existing Noise Levels

The primary source of noise in the project area is traffic on SR-91. Other noise sources include traffic on arterial roads (particularly Green River Road), trains on the BNSF railroad tracks, and aircraft. Table 2.26 presents a summary of the existing noise environment in the SR-91 study area, based on noise measurements and modeling. Receptor locations are shown in Figure 2-11. Based on these results, Receptors 2, 3, 15 to 20, and 24 were removed from the subsequent impact analysis because of relatively low existing noise levels and an assessment that project impacts would not approach the NAC described in Table 2.25, primarily due to the intervening distance between the proposed project and these receptors. Receptors 1, 1a, 4, 4a, 5, 6, 7, and 21 (e.g., Featherly Regional Park and Chino Hills State Park) are not considered sensitive, and are not evaluated for noise abatement because they are only subject to transient use.

Table 2.26 Existing Noise Levels

Receptor	Location or Address	Land Use Type	Number of Units Represented	Noise Abatement Category and Criterion	Existing Worst Hour Noise Level, $L_{eq}(h)$, dBA	Noise Level Measured[1] or Modeled
1[2]	Featherly Regional Park	Park	N/A[2]	N/A[2]	82	Measured
1a[2]	Featherly Regional Park	Park	N/A[2]	N/A[2]	64	Modeled
2	25628 Corsica Way	Residential	25	B (67)	61	Measured
3	28610 Brush Canyon	Residential	28	B (67)	59	Measured
4[2]	Chino Hills State Park	Park	N/A[2]	N/A[2]	69	Measured
4a[2]	Chino Hills State Park	Park	N/A[2]	N/A[2]	62	Modeled
5[2]	Chino Hills State Park	Park	N/A[2]	N/A[2]	73	Measured
6[2]	Chino Hills State Park	Park	N/A[2]	N/A[2]	72	Measured
7[2]	Chino Hills State Park	Park	N/A[2]	N/A[2]	72	Measured
8	Basketball court at Green River Village Community	Residential	3[3]	B (67)	62	Measured
9	14 Mountainside	Residential	8	B (67)	66	Measured
10	26 Cottonwood	Residential	8	B (67)	66	Measured
11	4 Mountainside	Residential	8	B (67)	66	Measured
12	331 Mountainside	Residential	8	B (67)	63	Measured
13	108 Mountainside	Residential	15	B (67)	63	Measured
14	319 Mountainside	Residential	7	B (67)	60	Measured
14a	Single-family residence at Green River Road and Crestridge	Residential	1	B (67)	69	Modeled
15	4657 Valley Glen Drive	Residential	7	B (67)	55	Measured
16	4618 Pennyroyal Drive	Residential	9	B (67)	57	Measured
17	4553 Pennyroyal Drive	Residential	12	B (67)	57	Measured
18	4552 Pennyroyal Drive	Residential	8	B (67)	58	Measured
19	4489 Feather River Road	Residential	10	B (67)	63	Measured
20	4500 Feather River Road	Residential	8	B (67)	60	Measured
21[2]	Chino Hills State Park	Park	N/A[2]	N/A[2]	66	Measured
22	Equestrian facility	Residential	2	B (67)	68	Measured
23	4602 Green River Road	Residential	3	B (67)	67	Measured
24	Faith Fellowship Bible Church	Church	1	E (52)	46	Measured
25	Green River KinderCare	School	2	B (67)	69	Measured
25a	Outdoor dining areas	Commercial	2	C (72)	66	Modeled
26	4100 Mt. Cantara Cir.	Residential	10	B (67)	65	Measured
26a	Residence on San Viscaya	Residential	6	B (67)	61	Modeled
26b	Residence on Dominguez	Residential	6	B (67)	61	Modeled
26c	Residence on Dominguez	Residential	5	B (67)	58	Modeled
27	940 Manor way	Residential	4	B (67)	64	Measured
27a	Manor Way residence	Residential	1	B (67)	69	Modeled
27b	Manor Way residence	Residential	3	B (67)	68	Modeled
27c	Manor Way residence	Residential	1	B (67)	66	Modeled
28	711 Meridian Circle	Residential	11	B (67)	69	Measured
28a	Residence on Meridian	Residential	1	B (67)	63	Modeled
28b	Residence on Highland View	Residential	5	B (67)	68	Modeled

Receptor	Location or Address	Land Use Type	Number of Units Represented	Noise Abatement Category and Criterion	Existing Worst Hour Noise Level, L_{eq}(h), dBA	Noise Level Measured[1] or Modeled
28c	2nd row residence on Highland View	Residential	4	B (67)	61	Modeled
28d	Residence on Braemar	Residential	11	B (67)	66	Modeled
28e	Residence on Braemar	Residential	10	B (67)	65	Modeled

Source: *Traffic Noise Impact Technical Report* (Wieland Associates, Inc., July 2006).

[1] Unless otherwise indicated, all measurements shown reflect peak-hour noise levels; i.e., they were either measured during the noisiest hour or were modeled to peak-hour noise traffic characteristics.

[2] This receptor represents a bike trail or walking trail, which is used for transient activities. Therefore, it is not considered impacted and was not considered for noise abatement.

[3] The basketball court itself counts as 1 unit (<30.5 m frontage unit). The basketball court receptor is also used to represent an additional 2 residences to the northeast, for a total of 3 units.

[4] Refer to Table 2.25 for the land use types associated with each NAC criterion.

0 500 1,000 FEET

0 152.5 305 METERS

LEGEND

- Right-of-Way
- Existing Sound Wall
- Proposed Sound Wall
- Noise Receptor
- County Boundary

SOURCE: Eagle Aerial, 2006.

FIGURE 2-11

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

Sound Wall and Noise Receptor Locations

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

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2.15.3 Environmental Consequences

2.15.3.1 Build Alternative (Alternative 2)

Permanent Impacts

Potential adverse long-term noise impacts associated with project operations are solely from traffic noise. According to the *Traffic Noise Impact Technical Report*, of the 43 receptor locations modeled, 13 receptors would approach or exceed the FHWA NAC under the future worst-case traffic conditions (1,950 passenger cars per hour per lane, the maximum capacity of the freeway), as shown in Table 2.27. Future peak noise at parts of the Green River Village mobile home park and residences on Braemar (Receivers 9 to 11) would approach the FHWA NAC. The future peak noise at the equestrian center, the daycare center, the single-family residences at the corner of Green River Road and Crestridge Drive and at Green River Road, Manor Way, Meridian Circle, and Highland View would exceed the FHWA NAC.

Construction Impacts

Construction noise represents a short-term impact to ambient noise levels. Receptor locations that would be affected by traffic noise would be adversely affected by construction noise during construction of Alternative 2. Typical construction equipment expected to be used during construction of the project and the related noise levels are shown in Table 2.28. Construction activities would comply with local noise ordinances including those of the Cities of Anaheim, Yorba Linda, and Corona and the Counties of Orange and Riverside.

2.15.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction of any improvements on the project segment of SR-91 and, therefore, would not result in any construction-related noise. Under the No Build Alternative, noise levels associated with traffic on SR-91 may increase as a result of traffic volumes increasing over time. However, the No Build Alternative would not result in moving traffic noise close to any sensitive receptors. Therefore, the No Build Alternative would not result in adverse noise impacts in the long term.

2.15.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes recommended actions that avoid, minimize, or abate the adverse project noise impacts identified in the previous section.

Table 2.27 Predicted Traffic Noise Impacts

Receptor	Location or Address	Development Predates 1978, or Project is New Hwy. Const.	Existing Noise Level, L_{eq}(h), dB A	Build Noise Level, L_{eq}(h), dBA	Noise Increase (+) or Decrease (-)	Noise Abatement Category and Criterion	Impact Type[1]
1	Featherly Regional Park	Yes	82	82	+0	N/A [2]	None[2]
1a	Featherly Regional Park	Yes	64	64	+0	N/A [2]	None[2]
4	Chino Hills State Park	Yes	69	69	+0	N/A [2]	None[2]
4a	Chino Hills State Park	Yes	62	62	+0	N/A [2]	None[2]
5	Chino Hills State Park	Yes	72	73	+1	N/A [2]	None[2]
6	Chino Hills State Park	Yes	71	72	+1	N/A [2]	None[2]
7	Chino Hills State Park	Yes	72	72	+0	N/A [2]	None[2]
8	Basketball court at Green River Village Community	Yes	62	62	+0	B (67)	None
9	14 Mountainside	Yes	66	66	+0	B (67)	A/E[3]
10	26 Cottonwood	Yes	66	66	+0	B (67)	A/E[3]
11	4 Mountainside	Yes	66	66	+0	B (67)	A/E[3]
12	331 Mountainside	Yes	63	63	+0	B (67)	None
13	108 Mountainside	Yes	63	63	+0	B (67)	None
14	319 Mountainside	Yes	60	60	+0	B (67)	None
14a	Single-family residence at Green River and Crestridge	Yes	69	69	+0	B (67)	A/E[3]
21	Chino Hills State Park	Yes	66	66	+0	N/A [2]	None[2]
22	Equestrian Facility	Yes	67	68	+1	B (67)	A/E[3]
23	4602 Green River Road	Yes	66	67	+1	B (67)	A/E[3]
25	Green River KinderCare	Yes	68	69	+1	B (67)	A/E[3]
25a	Outdoor dining area	Yes	65	66	+1	C (72)	None
26	4100 Mt. Cantara Cir.	Yes	64	65	+1	B (67)	None
26a	Residence on San Viscaya	Yes	60	61	+1	B (67)	None
26b	Residence on Dominguez	Yes	61	61	+0	B (67)	None
26c	Residence on Dominguez	Yes	57	58	+1	B (67)	None

Receptor	Location or Address	Develop-ment Predates 1978, or Project is New Hwy. Const.	Existing Noise Level, L_{eq}(h), dB A	Build Noise Level, L_{eq}(h), dBA	Noise Increase (+) or Decrease (-)	Noise Abatement Category and Criterion	Impact Type[1]
27	940 Manor Way	Yes	64	64	+0	B (67)	None
27a	Manor Way residence	Yes	69	69	+0	B (67)	A/E[3]
27b	Manor Way residence	Yes	67	68	+1	B (67)	A/E[3]
27c	Manor Way residence	Yes	65	66	+1	B (67)	A/E[3]
28	711 Meridian Cir.	Yes	68	69	+1	B (67)	A/E[3]
28a	Residence on Meridian	Yes	63	63	+0	B (67)	None
28b	Residence on Highland View	Yes	68	68	+0	B (67)	A/E[3]
28c	2nd row residence on Highland View	Yes	61	61	+0	B (67)	None
28d	Residence on Braemar	Yes	66	66	+0	B (67)	A/E[3]
28e	Residence on Braemar	Yes	65	65	+0	B (67)	None
28e	Residence on Braemar	Yes	65	65	+0	B (67)	None

Source: *Traffic Noise Impact Technical Report* (Wieland Associates, Inc., July 2006).

[1] A/E = Approaches or Exceeds NAC.

[2] This receptor represents a bike trail or walking trail, which is used for transient activities. Therefore, it is not considered impacted and was not considered for noise abatement.

[3] Receptors approaching or exceeding the NAC require further analysis to determine whether sound walls are reasonable and feasible.

Table 2.28 Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA)	Distance
Pile driver	103	7.6 meters (m) (25 feet [ft])
Pavement breaker	105	0.9 m (3 ft)
Diesel-driven electric welder	93	7 m (23 ft)
Diesel-driven air compressor	105	0.9 m (3 ft)
Air tracked drill	104	7 m (23 ft)
Chain saw		0.9 m (3 ft)
Gasoline	113	
Electric	86	
Sinker drill	95	0.9 m (3 ft)
Earth movers		15.2 m (50 ft)
Front loader	79	
Backhoe	85	
Dozer	80	
Grader	91	
Truck	91	
Paver	89	
Material handlers		15.2 m (50 ft)
Concrete mixer	85	
Crane	83	
Jack hammer	88	15.2 m (50 ft)

Source: *Traffic Noise Impact Technical Report* (Wieland Associates, Inc., July 2006).

Table 2.29 describes the locations, dimensions, and costs of the six sound walls that are under consideration for the abatement of long-term noise impacts under Alternative 2. Figure 2-11 shows the locations of the sound walls proposed as part of the SR-91 project. The preliminary noise analysis also considered SW-1, SW-2, and SW-5 for reduction of traffic noise on the north side of SR-91 at Featherly Regional Park, Chino Hills State Park, and Chino Hills State Park Trail. These areas are used for transient activities and are not considered noise sensitive; therefore, SW-1, SW-2, and SW-5 were dropped from consideration.

As discussed earlier in Section 2.7, Visual/Aesthetics, the sound walls adjacent to residential uses may be constructed from a clear product (such as tempered glass or Lucite) for as much of the wall height as possible to minimize adverse visual effects while achieving the desired noise reduction. Table 2.30 summarizes the noise reduction resulting from alternative sound wall heights for each sensitive receptor plus an assessment of the sound wall's feasibility and reasonableness. These sound walls are described in detail below.

Table 2.29 Determination of Reasonableness

ID	Loc.	Wall Height	Length of Sound Wall	Engr. Cost Est. (in sq m and sq ft)	Approx. Cost	Allowance per Noise Barrier	Reasonable (Yes or No)
SW-3	See below	4.3 m (14 ft)	829 m (2,720 ft)	$220/sq m $20.44/sq ft	$778,643	$1,292,000	Yes
SW-4	See below	1.8 m (6 ft)	134 m (440 ft)	$220/sq m $20.44/sq ft	$53,971	$38,000	No
SW-6	See below	4.3 m (14 ft)	1,195 m (3,921 ft)	$220/sq m $20.44/sq ft	$1,122,400	$200,000	No
SW-7	See below	1.8 m (6 ft)	103 m (338 ft)	$220/sq m $20.44/sq ft	$41,487	$80,000	Yes
SW-8	See below	2.4 m (8 ft)	118 m (387 ft)	$220/sq m $20.44/sq ft	$63,482	$210,000	Yes
SW-9	See below	1.8 m (6 ft)	869 m (2,851 ft)	$220/sq m $20.44/sq ft	$349,577	$1,302,000	Yes

Source: *Traffic Noise Impact Technical Report* (Wieland Associates, Inc., July 2006).
sq m = square meters
sq ft = square feet
Locations: SW-3: Sta. 006+83 to Sta. 015+13
SW-4: At top of slope adjacent to residence
SW-6: Sta. 017+27 to Sta. 029+30
SW-7: At top of slope adjacent to daycare center
SW-8: At top of slope adjacent to residences
SW-9: At top of slope adjacent to residences
Refer to Figure 1-4 for the locations of these proposed sound walls.

Table 2.30 Noise Levels with and without the Proposed Sound Walls

Rec.	Without Wall	With Wall H = 1.8 m (6 ft)		With Wall H = 2.4 m (8 ft)		With Wall H = 3.0 m (10 ft)		With Wall H = 3.7 m (12 ft)		With Wall H = 4.3 m (14 ft)		With Wall H = 4.9 m (16 ft)		Notes
		$L_{eq}(h)$	I.L.	$L_{eq}(h)$	I.L.	$L_{eq}(h)$	I.L.	$L_{eq}(h)$	I.L.	$L_{eq}(h)$	I.L.	$L_{eq}(h)$	I.L.	
9	66	64	2	62[1]	4	62	4	62	4	61	5	N/A		4.3 m wall is feasible and reasonable.
10	66	63	3	62	4	61[1]	5	61	5	61	5	N/A		4.3 m wall is feasible and reasonable.
11	66	64	2	63[1]	3	63	3	62	4	62	4	N/A		Sound wall is not feasible.
14a	69	67	2	66	3	66	3	65	4	64	5	N/A		4.3 m wall at edge of shoulder is feasible & reasonable.
14a	69	64	5	62	7	61	8	60	9	59	10	58	11	1.8 m wall at toe of slope is feasible, not reasonable.
22	68	66	2	64	4	64	4	63	5	62	6	N/A		4.3 m wall is feasible, not reasonable.
23	67	65	2	64	3	63	4	63	4	62	5	N/A		4.3 m wall is feasible, not reasonable.
25	69	68	1	68	1	67	2	67	2	66	3	N/A		Sound wall at edge of shoulder is not feasible.
25	69	62	7	57	12	55	14	53	16	52	17	52	17	1.8m wall at toe of slope is feasible and reasonable.
25a	66	65	1	64	2	63	3	63	3	62	4	N/A		Sound wall is not feasible.
27	64	64	0	64	0	64	0	64	0	64	0	64	0	NAC not exceeded. No wall required.

Table 2.30 Noise Levels with and without Sound Walls (continued)

Rec.	Without Wall	With Wall H = 1.8 m (6 ft)		With Wall H = 2.4 m (8 ft)		With Wall H = 3.0 m (10 ft)		With Wall H = 3.7 m (12 ft)		With Wall H = 4.3 m (14 ft)		With Wall H = 4.9 m (16 ft)		Notes
		L_{eq}(h)	I.L.	L_{eq}(h)	I.L.	L_{eq}(h)	I.L.	L_{eq}(h)	I.L.	L_{eq}(h)	I.L.	L_{eq}(h)	I.L.	
27a	69	61	8	58	11	56	13	55	14	55	14	54	15	2.4 m wall at toe of slope is feasible and reasonable.
27b	68	61	7	58	10	57	11	56	12	56	12	56	12	2.4 m wall at toe of slope is feasible and reasonable.
27c	66	62	4	61	5	61	5	61	5	61	5	61	5	2.4 m wall at toe of slope is feasible and reasonable.
28	69	60	9	57	12	56	13	54	15	53	16	53	16	1.8 m wall at toe of slope is feasible and reasonable.
28b	68	60	8	57	11	55	13	54	14	52	16	52	16	1.8 m wall at toe of slope is feasible and reasonable.
28d	66	58	8	55	11	52	14	51	15	50	16	49	17	1.8 m wall at toe of slope is feasible and reasonable.

Source: *Traffic Noise Impact Technical Report* (Wieland Associates, Inc. July 2006).
[1] Breaks line of sight between 3.5 m (11.5 ft) high truck exhaust stack and 1.5 m (5 ft) high receiver at impacted receiver locations.
NAC = Noise Abatement Criterion; IL= Insertion Loss, Noise reduction.

SW-3 would be located at the edge of shoulder on the north side of SR-91 and would run from adjacent to the southwest end of the Green River Village mobile home park to partially up the westbound Green River Road on-ramp. If constructed at the maximum permitted height of 4.3 m (14 ft) at the edge of shoulder, SW-3 would reduce the future peak-hour noise level by 5 to 6 dBA at impacted Receptors 8 to 10, 13, and 14a. Therefore, SW-3 is considered to be a feasible abatement measure at these locations. SW-3 would also block the line-of-sight to truck exhaust stacks in the near lanes at Receptors 9 and 10. SW-3 would benefit 34 receptors at a cost of approximately $778,643. Because this is less than the reasonable allowance of $1,292,000 for this location, SW-3 is also considered reasonable.

Caltrans is currently preparing a *Preliminary Environmental Analysis Report* (PEAR) for the future widening of SR-91 in both directions through the project area. As of the date of the *Traffic Noise Technical Report*, the funding and timing of this future project have not been confirmed. Such a future project would require demolition of SW-3. Therefore, depending on the timing of the future project, SW-3 may not meet the reasonableness criteria of 2.8.1 (f) of the *Traffic Noise Analysis Protocol*, which states, "It is normally not reasonable to construct a wall where planned future use would limit its useful life to less than 15 years." A final decision on the reasonableness of SW-3 should be made by the appropriate agencies prior to construction of Alternative 2, based on the most current scheduling information for the future widening project.

SW-4 would be located at the top of slope on the north side of SR-91 adjacent to the residence at Crestridge Drive and Green River Road (Receptor 14a). SW-4 would reduce the noise level by 5 dBA if constructed at a height of 1.8 m (6 ft). Therefore, SW-4 is considered to be a feasible abatement measure. SW-4 would benefit one receptor at a cost of approximately $53,971. Because this exceeds the reasonable allowance of $38,000 at this location, SW-4 is not considered reasonable on the basis of cost.

SW-6 would be at the edge of shoulder on the south side of SR-91 east of Green River Road. SW-6 would reduce the noise level by 5 to 6 dBA at Receptors 22 and 23 if constructed at the maximum permitted height of 4.3 m (14 ft). Therefore, SW-6 is considered to be a feasible abatement measure at these locations. SW-6 would benefit 5 receptors at a cost of approximately $1,122,400. Because this exceeds the reasonable allowance of $200,000 at this location, SW-6 is not considered reasonable on the basis of cost.

SW-7 would be located at the toe of slope on the south side of SR-91, adjacent to the Green River KinderCare (Receptor 25). SW-7 would reduce the noise level by 7 dBA if constructed at a height of 1.8 m (6 ft). Therefore, SW-7 is considered to be a feasible abatement measure at this location. SW-7 would benefit 2 receptors at a cost of approximately $41,487. Because this is less than the reasonable allowance of $80,000 at this location, SW-7 is considered reasonable on the basis of cost.

SW-8 would be located at the toe of slope on the south side of SR-91 adjacent to the single-family detached residences on Manor Way (Receptors 27 to 27c). SW-8 would reduce the noise levels by 5 to 11 dBA at Receptors 27a, 27b, and 27c if constructed at a height of 2.4 m (8 ft). Therefore, SW-8 is considered to be a feasible abatement measure at these locations. SW-8 would benefit 5 receptors at a cost of approximately $63,482. Because this is less than the reasonable allowance of $210,000 at this location, SW-8 is considered reasonable on the basis of cost. The design of SW-8 would impact the views from the residents at this location. Refer to Mitigation Measure V-3 described earlier in Section 2.7, Visual/Aesthetics, which addresses the potential visual impact of this sound wall.

SW-9 would be located at the toe of slope adjacent to the single-family residences on the south side of SR-91 (Receptors 28 to 28e). SW-9 would reduce the noise levels by 6 to 9 dBA if constructed at a height of 1.8 m (6 ft). Therefore, SW-9 is considered to be a feasible abatement measure at Receptors 28, 28b, 28c, and 28d. SW-9 would benefit 31 receptors at a cost of approximately $349,577. Because this is less than the reasonable allowance of $1,302,000 at this location, SW-9 is also considered reasonable at these locations. Refer to Mitigation Measure V-3 described earlier in Section 2.7, Visual/Aesthetics, which addresses the potential visual impact of this sound wall.

Because three of the proposed sound walls would be constructed on the property lines of private properties, the property owners would need to approve the walls. Therefore, the final decision on sound walls would be made before the start of final project design and coordination with the property owners.

To reduce the proposed project's noise impacts, the following abatement measure is recommended:

N-1 Sound walls (SW) 7, 8, and 9, which are considered both feasible and reasonable, will be constructed to abate anticipated project noise impacts. Prior to construction, Caltrans (and other agencies, as appropriate) will

determine whether the timeframe of the improvements would result in the reduction of SW-3's useful life to less than 15 years. If this is the case, SW-3 will not be reasonable and will not be constructed. If not, then SW-3 will be constructed.

The following two abatement measures would be used to minimize adverse construction noise:

N-2 The control of noise from construction activities will conform to Section 5-1, "Sound Control Requirements," in Caltrans Standard Special Provisions. Sound control will conform to the provisions in Section 7-1.011, "Sound Control Requirements," of the Standard Specifications and the following special provisions:

> "The noise level from the contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m. will not exceed 86 dBA at a distance of 15.24 meters (m) (50 feet [ft]). This requirement in no way relieves the contractor from responsibility for complying with local ordinances regulating noise level.
>
> Said noise level requirement will apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the contractor. The use of loud sound signals will 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 will be considered as included in the prices paid for the various contract items of work involved and no additional compensation be allowed therefore."

N-3 Sound walls 7, 8, and 9 (and 3 if determined to be reasonable) should, where possible, be constructed or portable sound walls installed prior to construction of the proposed lane widening project. The use of portable sound walls is generally not considered desirable by Caltrans due to the high costs of such barriers.

BIOLOGICAL ENVIRONMENT

The analysis of potential impacts of the proposed project on biological resources is based on the *Natural Environmental Study* (NES) (Chambers Group, Inc. and LSA Associates, Inc., January 2007), *Supplementary Natural Environmental Study* (LSA Associates, Inc., (November 2007), *Biological Assessment* (BA) (Chambers Group, Inc. and LSA Associates, Inc., June 2007), and *Jurisdictional Delineation Report* (LSA Associates, Inc., October 2007).

The analysis of the potential impacts of the proposed project on biological resources considered the following categories of resources:

- Natural Communities
- Wetlands and Other Waters
- Plant Species
- Animal Species
- Threatened and Endangered Species
- Invasive Species

The applicable regulatory settings, existing environments, impacts, and avoidance, minimization, and mitigation measures for these categories of biological resources are described in the following sections.

Overview of Studies Conducted

In 2005, reconnaissance-level biological resource surveys, habitat assessments, focused plant and wildlife surveys, a wildlife corridor study, and formal jurisdictional delineation surveys were performed to document the existing conditions of biological resources in the Biological Study Area (BSA) for the proposed project.

An additional reconnaissance-level biological resource survey was conducted in 2006 to address the potential impacts of sound walls 7, 8, and 9. In addition, a bat habitat suitability assessment was conducted in 2006.

Definition of the Biological Study Area (BSA)

The BSA is the area of project-related biological resources impacts and includes the permanent and temporary impact areas. The majority of the BSA shown in Figure 2-12 encompasses approximately 56.3 ha (139.2 ac) extending between the edge of the

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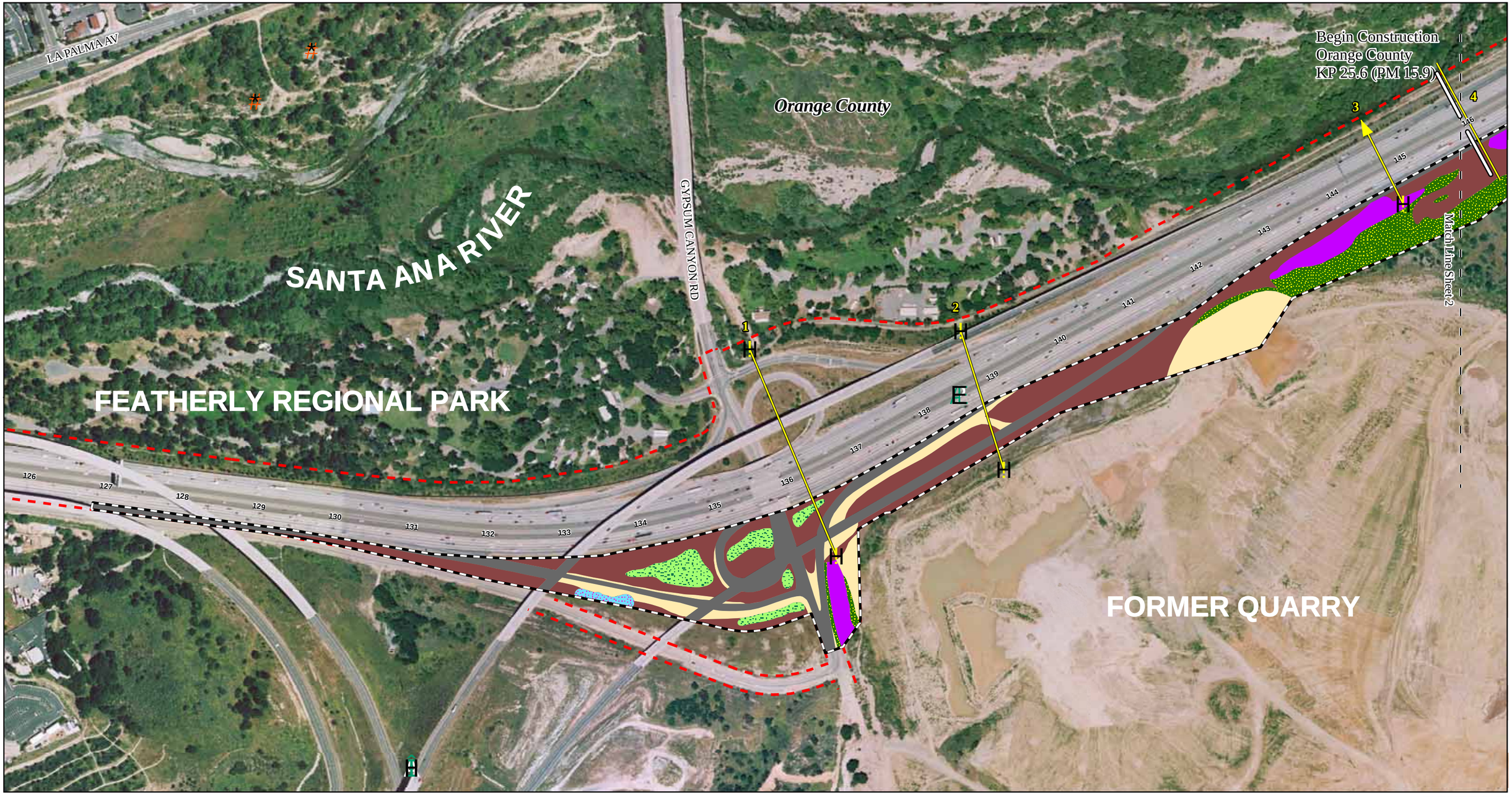

LEGEND

- Biological Study Area
- Existing Right-of-Way
- Potential Wildlife Crossings
- Known Culverts\ Wildlife Access Points
- CAGN Location (Gonzales 2007)
- SWWF Location (Gonzales 2007)
- LBVi Locations (SAWA 2003, Gonzales 2007)
- Occupied LBVi Habitat (2005)

Vegetation

- Alluvium Deposits
- Bare Ground
- Coast Live Oak Woodland
- Coastal Sage Scrub
- Cottonwood-Willow Riparian Woodland
- Developed
- Disturbed/Ruderal
- Eucalyptus Grove
- Mexican Elderberry Scrub
- Mule Fat Scrub
- Non-Native Grassland
- Pepper Tree Woodland
- Sycamore Riparian Woodland
- Tree of Heaven Woodland

N

0 200 400 FEET

0 61 122 METERS

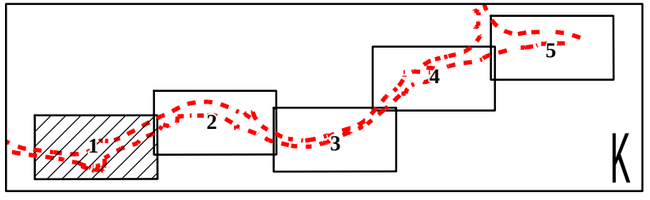

FIGURE 2-12

Sheet 1 of 5

SR-91 Eastbound Lane Addition

Between SR-241 and SR-71

Biological Resources

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Eagle Aerial, 2006, Chambers Group, 2005.

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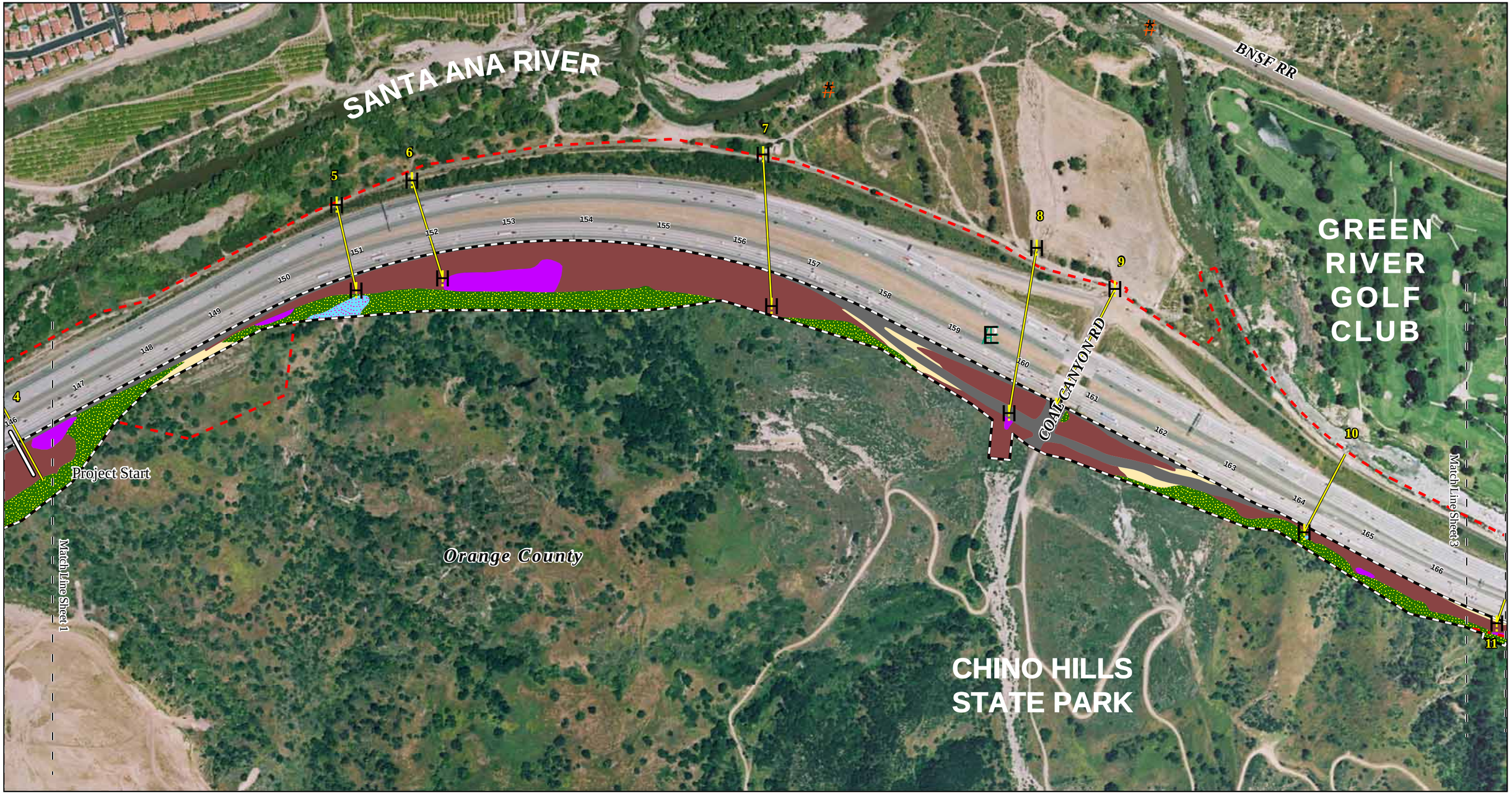

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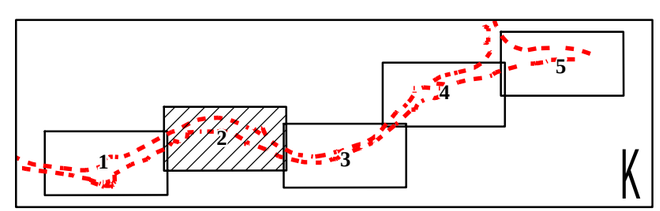

FIGURE 2-12
Sheet 2 of 5
SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Biological Resources

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Eagle Aerial, 2006, Chambers Group, 2005.

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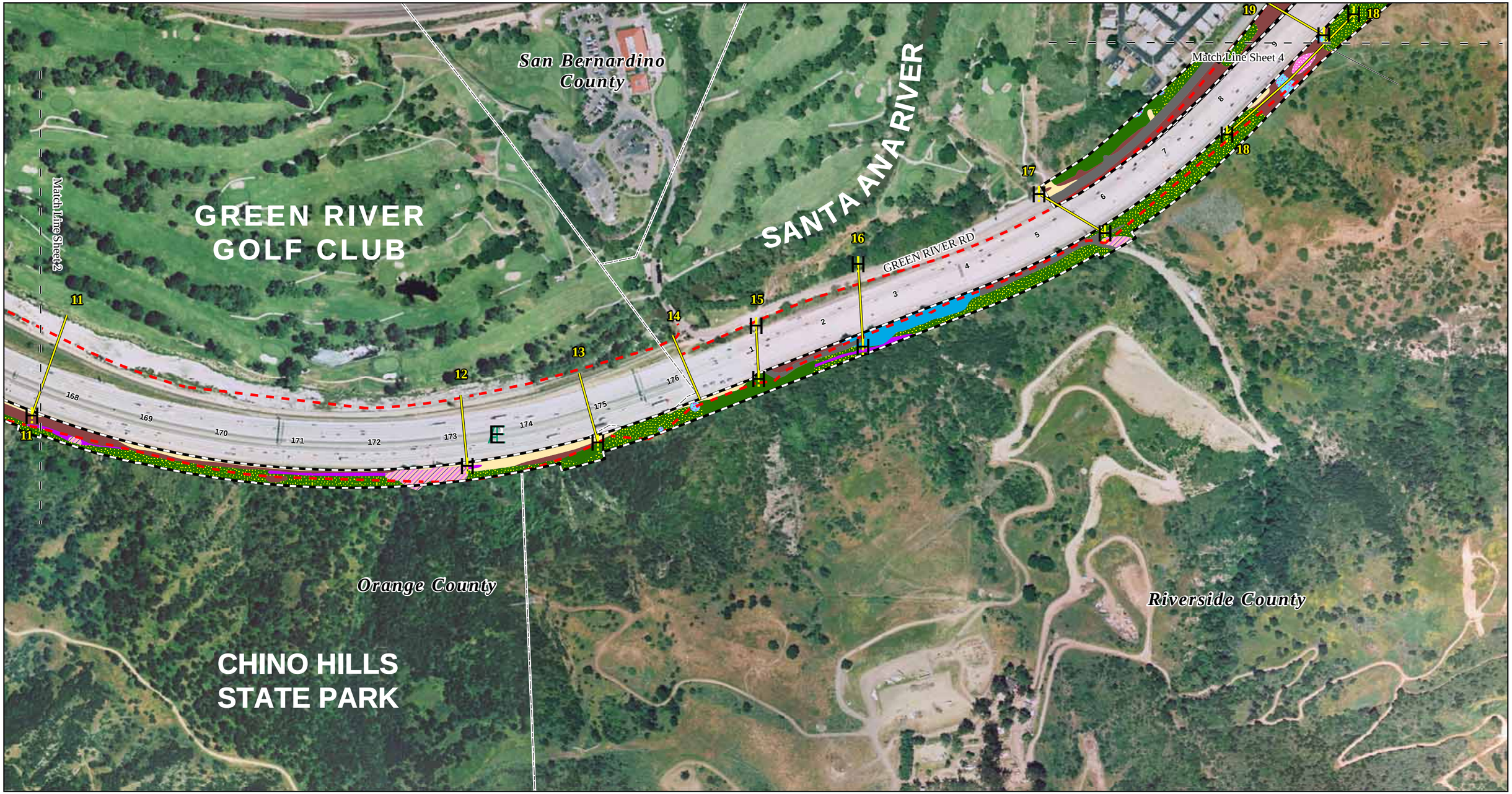

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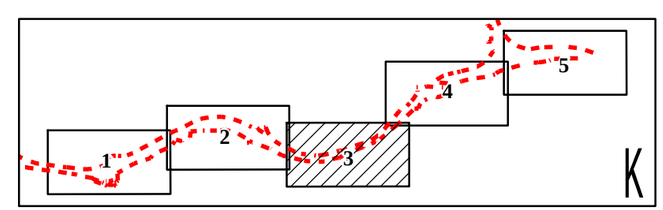

FIGURE 2-12
Sheet 3 of 5
SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Biological Resources

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Eagle Aerial, 2006, Chambers Group, 2005.

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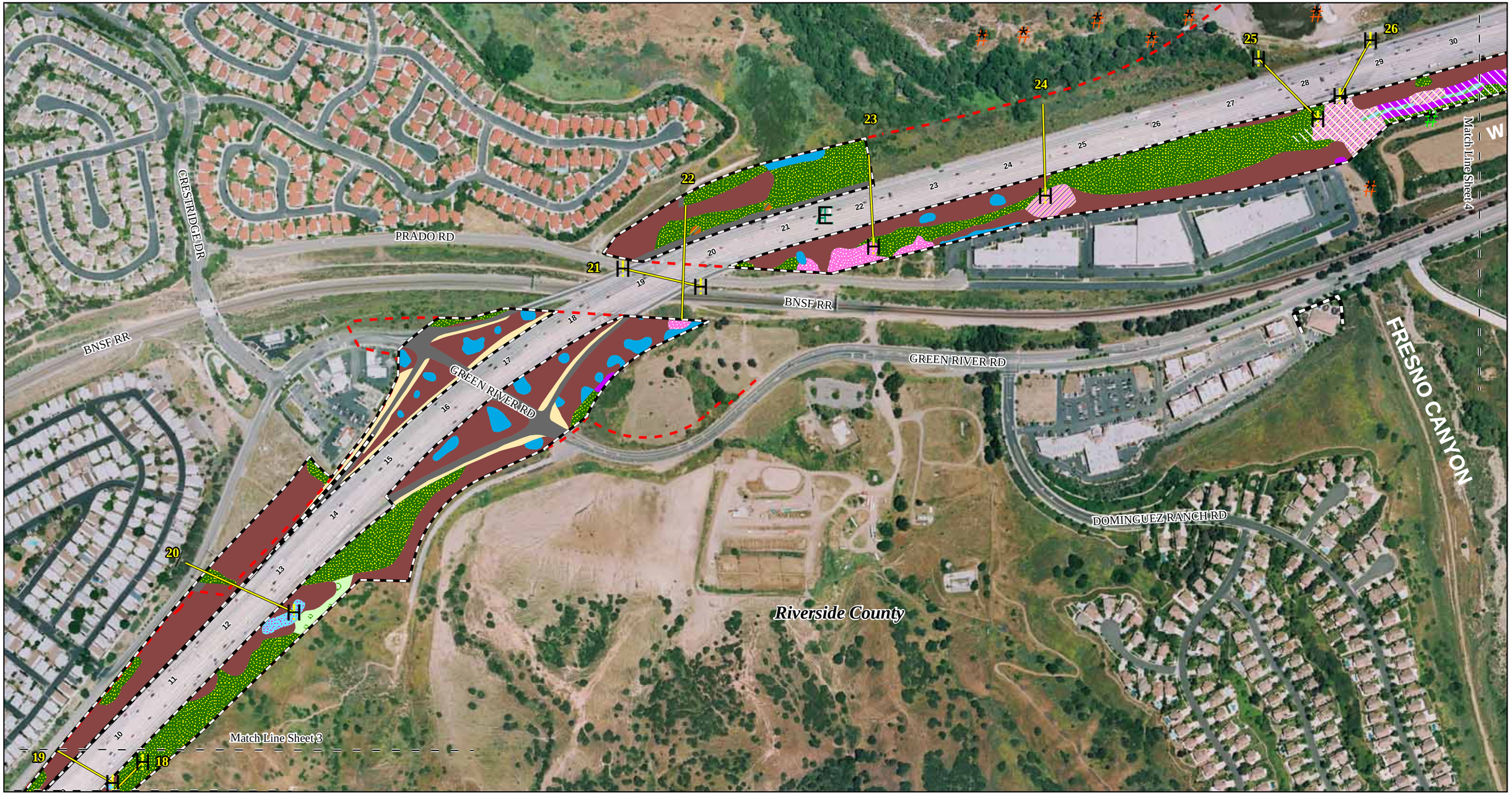

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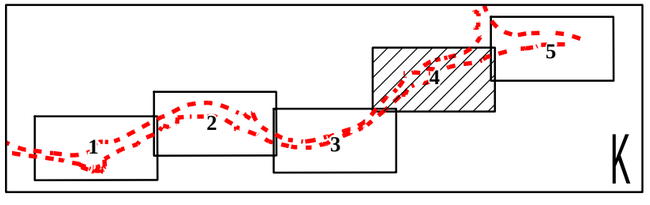

FIGURE 2-12
Sheet 4 of 5
SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Biological Resources

12-ORA-91 K.P. 25.6/32.0
08-RIV-91 K.P. 0.0/4.7
EA# 0G0400 (District 12)
EA# 0E8000 (District 8)

SOURCE: Eagle Aerial, 2006, Chambers Group, 2005.

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LEGEND

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- Existing Right-of-Way
- Potential Wildlife Crossings

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0 61 122 METERS

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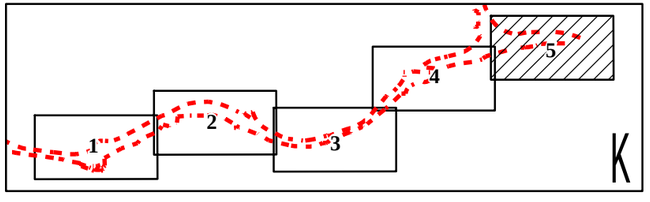

FIGURE 2-12
Sheet 5 of 5
SR-91 Eastbound Lane Addition
Between SR-241 and SR-71
Biological Resources

12-ORA-91 K.P. 25.6/32.0
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EA# 0G0400 (District 12)
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SOURCE: Eagle Aerial, 2006, Chambers Group, 2005.

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pavement of eastbound SR-91 on the north and the limits of the existing State-owned right-of-way on the south. Although temporary construction easements (TCEs) and sound walls are outside the existing Caltrans right-of-way, they are included in the BSA.

2.16 Natural Communities

This section discusses natural communities of concern in and adjacent to the BSA. The focus of this section is on biological communities, not individual plant or wildlife species. This section also provides information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for daily or seasonal migration. Habitat fragmentation addresses the division of sensitive habitat and the effects on the biological value of that habitat.

Habitat areas that have been designated as critical habitat under the federal Endangered Species Act (FESA) are discussed later in Section 2.20, Threatened and Endangered Species. Wetlands and other waters are discussed later in Section 2.17, Wetlands and Other Waters.

2.16.1 Habitat Conservation Plans

Habitat Conservation Plans (HCPs) and Natural Communities Conservation Plans (NCCPs) prepared under FESA and the California Endangered Species Act (CESA) are the primary planning and regulatory tools that guide the preservation of natural biological communities. HCPs/NCCPs applicable to the proposed project are the Orange County NCCP & HCP and the Western Riverside County Multi-species HCP (MSHCP) Area. These plans are two of several large, multi-jurisdictional habitat-planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region.

The Orange County NCCP & HCP were prepared to protect and manage habitat supporting a broad range of plant and animal populations. That Plan Area encompasses approximately 842 square kilometers (325 square miles) and was adopted in July 1996.

The MSHCP, adopted on June 17, 2003, is a comprehensive, multi-jurisdictional HCP focusing on conservation of species and their associated habitats in western Riverside County. The MSHCP Plan Area encompasses approximately 3.3 million square kilometers (1.26 million acres [ac]).

The project segment of SR-91 is located immediately north and outside of the Orange County NCCP & HCP planning area.

Two Riverside County MSHCP Core Areas are in the project vicinity. They are the Prado Flood Control Basin and Santa Ana River Core Area, which is north of SR-91,

and the Cleveland National Forest Core Area, which is south of SR-91. Two MSHCP-proposed constrained linkages connecting the Prado Flood Control Basin, Santa Ana River, and the Cleveland National Forest are within the project limits. A constrained linkage is a connection expected to provide for movement of wildlife between Core Areas. It is the intent of the MSHCP to incorporate these linkages into the MSHCP in the future. Although these linkages are not MSHCP areas, they serve as wildlife crossings and are protected under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

The first linkage, Coal Canyon, provides for movement of a variety of wildlife species, including coyotes, mule deer, mountain lions, and bobcats from the Santa Ana Mountains to the Chino Hills. The second linkage, at Fresno Canyon, provides a riparian connection that allows for movement of aquatic species. This linkage is also likely to be important for mountain lion movement from the Santa Ana Mountains to the Chino Hills beyond the MSHCP Plan Area.

2.16.2 Affected Environment

Vegetation in the BSA is primarily coastal sage scrub and ruderal (weedy) habitats along with several riparian and woodland habitats. Table 2.31 lists the acreage of each of the 12 natural communities in the BSA. Areas devoid of vegetation (e.g., alluvial deposits and bare ground) equaled approximately 4.61 hectares (ha) (11.4 acres [ac]) in the BSA and are not listed in Table 2.31. The principal characteristics and general locations of these sensitive natural communities are described below. More detailed descriptions of each community and vegetation mapping are provided in the NES.

Three general natural communities of special concern were identified in the BSA: riparian, coast live oak woodland, and coastal sage scrub. These natural communities are designated by the California Department of Fish and Game (CDFG) as sensitive communities. Riparian communities include cottonwood-willow riparian woodland, sycamore riparian woodland, and mulefat scrub.

Table 2.31 Natural Communities within the BSA

Natural Community	Total Area ha (ac)
Scrub and Chaparral Habitats	
Coastal Sage Scrub	12.3 (30.4)
Mexican Elderberry Scrub	0.36 (0.9)
Riparian and Woodland Habitats	
Mulefat Scrub	1.99 (4.9)
Cottonwood-Willow Riparian Woodland	1.72 (4.3)
Sycamore Riparian Woodland	0.61 (1.5)
Coast Live Oak Woodland	0.46 (1.1)
Ornamental Landscaping	
Pepper Tree Woodland	0.39 (0.98)
Eucalyptus Woodland	1.08 (2.7)
Tree of Heaven Woodland	0.60 (1.5)
Grassland Habitats	
Nonnative Grassland	0.14 (0.36)
Other Areas	
Ruderal/Disturbed	25.01 (61.8)
Developed	7.26 (17.9)
Total	**51.92 (128.3)**

Source: *Natural Environment Study* (Chambers Group, Inc. and LSA Associates, Inc., January 2007).

2.16.2.1 Coastal Sage Scrub

Dominant shrubs in coastal sage scrub are California buckwheat *(Eriogonum fasciculatum)* and California sagebrush *(Artemisia californica).* White sage *(Salvia apiana)* and chaparral yucca *(Yucca whipplei)* occur regularly, but at low densities. Shrub cover is dense and generally continuous. Taller shrubs, including laurel sumac *(Malosma laurina),* hollyleaf redberry *(Rhamnus ilicifolia),* and Mexican elderberry *(Sambucus mexicana)* emerge above the buckwheat and sagebrush layer. Coastal sage scrub is present throughout the BSA, both north and south of SR-91, along the length of the project segment. There are 12.3 ha (30.4 ac) of coastal sage scrub in the BSA.

2.16.2.2 Mexican Elderberry Scrub

The Mexican elderberry scrub community is dominated by Mexican elderberry *(Sambucus mexicana).* Fremont cottonwood *(Populus fremontii),* narrowleaf willow *(Salix exigua),* and poison oak *(Toxicodendron diversilobum)* are also present as subdominants. This community is present in areas where the soil is intermittently flooded or seasonally saturated. Mexican elderberry scrub is found south of SR-91 near the Green River Road off-ramp. There is 0.36 ha (0.9 ac) of this community in the BSA.

2.16.2.3 Mulefat Scrub

Mulefat scrub is a tall, herbaceous riparian scrub community dominated by mulefat *(Baccharis salicifolia).* This plant community is generally considered to be an early seral stage riparian community that typically occurs in intermittent streambeds and seeps. This community is maintained by frequent flooding and usually changes into cottonwood-sycamore riparian forest or woodland when flooding ceases. Mulefat communities are located in the western part of the BSA south of SR-91 between the SR-91/SR-241 interchange and the Green River Golf Club and in several small areas south of SR-91 near the SR-91/SR-71 interchange. There are 1.99 ha (4.9 ac) of mulefat scrub in the BSA.

2.16.2.4 Cottonwood-Willow Riparian Woodland

The cottonwood-willow riparian woodland community is dominated by mature arroyo willow *(Salix lasiolepis)* trees and Fremont cottonwood trees. Black willow *(Salix gooddingii),* western sycamore *(Platanus racemosa),* and coast live oak *(Quercus agrifolia)* are present as subdominants. Riparian plant communities such as the cottonwood-willow riparian woodland usually have high vegetation density and diversity and correspondingly high wildlife habitat values. Cottonwood-willow riparian woodland is present in several areas south of SR-91. There are 1.72 ha (4.3 ac) of this community in the BSA.

2.16.2.5 Sycamore Riparian Woodland

Sycamore riparian woodlands occur where soils are permanently saturated at depth, along riparian corridors, braided channels of intermittent streams, stream and river banks, and terraces adjacent to floodplains subject to high-intensity flooding. Common subdominant species in the sycamore riparian woodland include arroyo willow, black willow, mulefat, and Fremont cottonwood. Sycamore riparian woodlands are located south of SR-91 near the Gypsum Canyon Road off-ramp. There is 0.61 ha (1.5 ac) of this community in the BSA.

2.16.2.6 Coast Live Oak Woodland

Coast live oaks are the dominant tree species in this woodland type. Coast live oak woodlands, a habitat of concern, can be found scattered throughout the foothills of the Transverse and Peninsular Ranges (Holland 1986). These woodlands are considered sensitive by the CDFG because they provide food and shelter for a wide variety of animal species and because of their historic and aesthetic values. Coast live oak woodland occurs in several small areas on the steep, north-facing slope south of

SR-91 and in two small areas in the SR-91/SR-71 interchange. There is 0.46 ha (1.1 ac) of coast live oak woodlands in the BSA.

2.16.2.7 Wildlife Corridors

Surveys were conducted along the project segment of SR-91 on June 10 and October 27, 2005 to evaluate the potential for wildlife corridors in and adjacent to the BSA. The results of the wildlife corridor study are summarized below for the segments of SR-91 in Orange and Riverside Counties. A detailed discussion of the locations and wildlife use of the culverts and crossings is provided in the NES.

Based on an additional field survey on July 23, 2007, and review of Caltrans as-built plans, it was determined that there are 28 undercrossings/culverts within the project limits that could potentially be used as wildlife crossings. Table 2.32 provides a list and description of these potential crossings and wildlife corridor potential.

2.16.3 Environmental Consequences

2.16.3.1 Build Alternative (Alternative 2)

Natural Communities

The area of permanent Build Alternative impacts were estimated based on the area between the existing edge of pavement and the proposed limits of cut and fill for the proposed project, which includes areas outside of the existing Caltrans right-of-way. Permanent impacts include the road widening, private access road relocation, new retaining wall construction, bridge and culvert widening, sound wall construction, and storm water basin modifications that use riprap or cement-reinforced structures. The areas affected permanently, other than the areas designated for sound walls (SW)-7, SW-8, and SW-9, would become part of the Caltrans right-of-way, if not already included as a result of the proposed project.

The area of temporary impact consists of the anticipated work area outside the cut and fill limits. Temporary construction easements (TCEs) would be needed for relocation of the private access road and regrading the collection basins. The areas in the TCEs would be restored following construction. Potential borrow sites, spoil sites, staging, access, and detours would be located within existing disturbed/ developed areas within the existing and proposed Caltrans right-of-way and the TCEs.

Table 2.32 Potential Wildlife Corridors within the BSA

New Culvert Number	Culvert Number in NES/BA	Type	Size (feet)	Wildlife Corridor Potential	Comments	To be widened or extended as part of the project?
1	1 (Gypsum Canyon)	Concrete Box (3 side-by-side)	38 x 10	High	• Bobcat and raccoon tracks observed • Fencing along existing ROW excludes wildlife from entering freeway • Moderate vegetation cover	No
2		Corrugated Metal Pipe Round	5	Low	• Culvert is outside of current highway fencing • Heavily vegetated between on-ramp and adjacent quarry	No
3	2	Concrete Round	5	Moderate	• No wildlife sign observed • Culvert is outside of current highway fencing • Heavy vegetation cover around culvert	No
4		Concrete/ Corrugated Metal Pipe Round	5	Low to none	• Metal grate over culvert	No
5	3	Concrete Box	5	Moderate	• Canyon from the south feeds into the culvert • Coyote scat observed in the vicinity of the culvert • Culvert is inside of current highway fencing, allowing wildlife connectivity • Heavy vegetation cover around culvert	No
6	4	Concrete Box	5 x 5	Low	• No wildlife sign observed • Culvert is outside of current highway fencing • Little to no vegetation cover around culvert	No
7		Concrete Box	3	Low	• Culvert is outside of current highway fencing • Fencing prohibits wildlife use • Small culvert size limits usage by medium or large mammals	No

New Culvert Number	Culvert Number in NES/BA	Type	Size (feet)	Wildlife Corridor Potential	Comments	To be widened or extended as part of the project?
8	5 (Coal Canyon)	Concrete Box (2 side-by-side)	20 x 8	High	• No wildlife sign observed, but wildlife has been documented using this culvert previously (Beier 1995) • Fencing along existing ROW, allowing wildlife access • Moderate vegetation cover around culvert • Coal Canyon Wash flows through culvert	No
9	6 (Coal Canyon)	Highway Overpass	70 x 25	High	• No vegetation cover present under overpass • Existing fencing funnels large wildlife toward the corridor	Yes
10	7	Concrete Round	3	Low	• No wildlife sign observed within highway fencing, excluding wildlife use • Little to no vegetation present • Small culvert size limits usage by large mammals	No
11	8	Concrete Round	3	Low	• No wildlife sign observed • Culvert is inside of current highway fencing, allowing wildlife connectivity • Little to no vegetation present • Small culvert size limits usage by large mammals	Yes
12	9	CMP Round	3	Low	• No wildlife sign observed • Outside of highway fencing • Heavy vegetation present around culvert • Small culvert size limits usage by large mammals • Steep slope prevents wildlife use	Yes
13	10	CMP Round	3	Low	• No wildlife sign observed • Small culvert size limits usage by large mammals • Filled in with sediment preventing wildlife use	Yes
14		Concrete Round	4.5	Low	• Difficult to determine opening • Steep slope • Small culvert size limits usage by large mammals	Yes

New Culvert Number	Culvert Number in NES/BA	Type	Size (feet)	Wildlife Corridor Potential	Comments	To be widened or extended as part of the project?
15	11	Concrete Box	14 x 14	Moderate	• County Line culvertculvert • No wildlife sign observed • Inside of highway fencing • Locked gate on WB side, preventing wildlife from entering • Wildlife could enter freeway from the EB side of the freeway • Some vegetation present, but culvert mainly used for private road traffic	Yes
16	12	CMP Round	4	Moderate	• No wildlife sign observed • Culvert opening on eastbound side is on border of permanent and temporary impacts • Inside of highway fencing, allowing wildlife connectivity • Moderate vegetation present	Yes
17	13	Concrete Box	13 x 15	Moderate	• Canyon from the south feeds into the culvert • No wildlife sign observed • Inside of highway fencing, allowing wildlife connectivity • Moderate vegetation present	Yes
18	14	CMP Round	3	Low	• Small CMP that runs parallel to SR-91 and does not cross highway • No wildlife sign observed • Outside of highway fencing • Little to no vegetation present • Small culvert size limits usage by large mammals	Yes
19	15	CMP Round	3	Low	• Coyote scat observed in the vicinity of the culvert • Presently outside of highway fencing • Little to no vegetation present (recent fire) • Small culvert size limits usage by large mammals	Yes

New Culvert Number	Culvert Number in NES/BA	Type	Size (feet)	Wildlife Corridor Potential	Comments	To be widened or extended as part of the project?
20	16	CMP Round	3	Low	• Coyote scat observed in the vicinity of the culvert • This is a storm drain that runs beneath SR-91 • Outside of highway fencing • Heavy vegetation present at southern outlet • Small culvert size limits usage by large mammals • Northern outlet is inside existing mobile home park	Yes
21	17 West Prado Road	Highway Underpass	200 x 40	Low	• No wildlife sign observed • Existing fencing with gaps at commercial development • Paved road (Prado Road) and the BNSF and Metrolink railroads both pass through the underpass • Little vegetation present	Yes
22		CMP	4.5	Low	• Inside of highway fencing, allowing wildlife connectivity • Dense vegetation	No
23	18	CMP Round	6	Moderate	• Coyote scat observed in the vicinity of the culvert • Inside of highway fencing • Existing fencing has gaps at commercial development • Heavy vegetation present	No
24	19	CMP Round	6	Moderate	• No wildlife sign observed • Inside of highway fencing • Existing fencing has gaps at commercial development • Heavy vegetation present	Yes
25	20 Fresno Canyon (West Connector Undercrossing)	Concrete Box (two side-by-side)	29 x 8	High	• Some coyote and raccoon tracks observed • Existing fencing with gaps at commercial development • Moderate vegetation present around the culvert • Heavy human activity also observed through the culvert	Yes

New Culvert Number	Culvert Number in NES/BA	Type	Size (feet)	Wildlife Corridor Potential	Comments	To be widened or extended as part of the project?
26	21 Fresno Canyon	Highway Underpass	52 x 25	High	• Coyote and raccoon tracks observed • Underpass is depressed, so wildlife is funneled into the underpass • Moderate vegetation present around the entrance to the underpass • Heavy human activity also observed through the underpass	Yes
27	22 SR-71 to SR-91 On-Ramp	Highway Underpass	90 x 25	Low	• Wardlow Wash located just south of underpass • Little to no vegetation present • Heavy vehicle traffic present during most times of the day	Yes
28	23 Wardlow Wash	Concrete Box (two side-by-side)	20 x 10	Low	• Some wildlife signs observed, but unable to identify because of sediment • Little vegetation present • Heavy vehicle traffic just to the north of the culvert (direct sight line of the SR-91/SR-71 interchange)	No

The proposed project would result in 2.66 ha (6.56 ac) of permanent and 1.33 ha (3.26 ac) of temporary impacts to natural communities of special concern in the BSA. The amounts of impacts to each community type are presented in Table 2.33. The proposed project would also potentially remove six to eight coast live oak trees with a diameter at breast height of 50.8 millimeters (2 inches) or greater.

Table 2.33 Impacts to Natural Communities of Special Concern

Natural Community	Impacts in Hectares (Acres)	
	Permanent Impact	Temporary Impact
Riparian and Woodland Communities		
Mulefat Scrub	0.06 (0.15)	0.04 (0.09)
Cottonwood-Willow Riparian Scrub	0.15 (0.36)	0.38 (0.93)
Sycamore Riparian Woodland	0.00	0.00
Coastal Life Oak Woodland	0.15 (0.36)	0.02 (0.06)
Shrub and Chaparral Communities		
Coastal Sage Scrub	2.30 (5.69)	0.89 (2.20)
Total	2.66 (6.56)	1.33 (3.26)

Source: *Natural Environment Study* (Chambers Group, Inc. and LSA Associates, Inc. January 2007).

Impacts to coastal sage scrub within the Riverside County portion of the project are considered a covered activity by the MSHCP and will be addressed through Section 13.8 of the MSHCP Implementation Agreement. Impacts to coastal sage scrub within the Orange County portion of the project will be mitigated through the restoration and/or enhancement of vegetation within Chino Hills State Park. These areas are being coordinated with the State Department of Parks and Recreation. Refer to the State Department of Parks and Recreation coastal sage scrub restoration letter dated November 27, 2007, in Appendix L.

Habitat Fragmentation and Wildlife Corridors

The Build Alternative would have limited direct impacts to available habitat and would not substantively modify the existing crossings that are used by wildlife. Existing fencing around the corridors would be replaced with equivalent fencing. Therefore, the proposed project would not result in habitat fragmentation in the BSA and adjacent areas.

The proposed project would result in limited permanent loss of habitat in the Fresno Canyon wildlife corridor and the other existing crossings. Temporary impacts to wildlife corridors could occur during construction due to the increased presence of equipment, structures, and construction personnel. During construction, temporary

structures and large pieces of equipment required for bridgework could potentially act as barriers to wildlife movement and restrict wildlife use of the corridors in the construction areas. Although Gypsum Canyon, a wildlife corridor, was included in the BSA, this feature would not be impacted by the proposed project because it is more than 0.8 kilometer (km) (0.5 mile [mi]) west of the project limits.

Indirect impacts on wildlife associated with the proposed project may include increased litter, light, noise, dust, increased human presence, and vehicle emissions and byproducts that can affect the movement patterns and use of wildlife corridors along the project segment of SR-91.

Long-term indirect impacts to wildlife may be associated with the decrease in the openness ratio value for wildlife culverts and undercrossings. The openness ratio is calculated by dividing the width of the opening of the wildlife crossing by the length of the crossing. For the bridge at Coal Canyon, the proposed project would result in the addition of approximately 7.2 meters (m) (23.62 feet [ft]) of new highway on the south side of the overpass, which would decrease the openness ratio by 8.9 percent to 2.25. However, because the new openness ratio is substantially larger than that recommended for large mammals (0.75), the proposed project is not expected to adversely impact wildlife use of this existing corridor.

Two existing structures serve as a wildlife corridor at Fresno Canyon. The first is a double-box culvert with a current openness ratio of 0.10, which is below the recommended ratio for large- and medium-sized mammals. After construction of the proposed project is completed and an additional 2.2 m (7.2 ft) of new highway are added to the culvert, the new openness ratio would be decreased to 0.09. This is only a moderate decrease in the openness ratio for this crossing.

The second crossing in Fresno Canyon has an openness ratio before project construction of 3.04 and an openness ratio after construction of 2.75, well above the recommended 0.75 openness ratio recommended for large mammals.

Other potential indirect impacts to wildlife corridors include shifts in biodiversity and hydrological changes. Other impacts may also include an increase in vehicle traffic and facilitation of human disturbance. The proposed project, however, would not be expected to increase human access into remote areas adjacent to the project segment of SR-91 and the BSA because it would not provide any new access or egress locations along SR-91 to adjacent lands.

The long-term impacts of the Build Alternative are not expected to increase habitat fragmentation or result in substantial degradation of existing wildlife corridors. Direct impacts to the wildlife corridors would be minimized through the implementation of avoidance, minimization, and mitigation measures provided later in this section.

2.16.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction or operation of any improvements to SR-91. Therefore, the No Build Alternative would not result in any short- or long-term impacts on natural communities or wildlife corridors.

2.16.4 Avoidance, Minimization, and/or Mitigation Measures

During construction, the following general measures would be implemented to avoid, minimize, and/or compensate impacts to biological resources throughout the entire project area:

BIO-1 All construction staging will occur in designated areas within the defined project disturbance limits as determined by the District Biologist in consultation with the Project Engineer.

BIO-2 During all construction activities, existing wildlife corridors will be kept clear of all equipment and structures that could serve as barriers to wildlife passage. An openness ratio of 0.6 m (2.0 ft) and appropriate height will be maintained at the Coal Canyon undercrossing for use by large mammals.

BIO-3 During final design, Environmentally Sensitive Areas (ESAs) will be delineated within and adjacent to the project footprint where sensitive resources are present, including coastal sage scrub and riparian habitat. No construction personnel, activities, materials, or equipment will be permitted in these areas during construction.

BIO-4 During all construction activities, a qualified biologist will monitor to ensure that delineation of the ESAs in the project area, vegetation removal, Best Management Practices (BMPs), and all avoidance and minimization measures are properly implemented and followed.

BIO-5 The removal of any existing wildlife fencing will be implemented after installation of the new fencing to protect against wildlife/vehicle incidents. The new fencing must be the same height or greater than the previous

wildlife fence and must be maintained and functional throughout project construction and operation to prevent wildlife/vehicle incidents.

BIO-6 During construction, all equipment maintenance, lighting, and staging will be in designated areas, away from delineated ESAs and wildlife corridors.

The following measures specifically apply to the Coal Canyon area:

- Vehicles staged on the eastbound on-ramp would not be equipped with security lights.
- The use of this area would be kept to a minimum, and where possible, the area would be avoided from February 15 to September 1.
- Use of the emergency access road as a turnaround or "shortcut" would be prohibited. The road would only be used during bridge construction and general road construction at Coal Canyon. In general, no hauling would be allowed at night through the underpass and freeway off-ramps.
- Structure for bridgework would be erected in a manner so as not to block the undercrossing. Scaffolding and false work would be restricted to the sides of the undercrossing and limits of the existing exclusionary chain-link fence in order to maintain the existing width of the corridor.
- Pile driving would be prohibited within 305 m (1,000 ft) of Coal Canyon. Cast-and-drill piles would be used instead of pile drivers. If possible, these activities should occur outside gnatcatcher nesting season (February 15–August 30).

BIO-7 During construction, if work must be done at night, noise and direct lighting will be directed away from delineated ESAs and wildlife corridors. No work will be conducted between the hours of 1600 and 0700 (4:00 p.m. and 7:00 a.m.) within 305 meters (m) (1,000 feet [ft]) of Coal Canyon, Fresno Canyon, and Wardlow Wash.

BIO-8 The existing culvert structures that will be extended or modified by the proposed project will be designed so that the culvert entrances have textured concrete drawdown pads.

The following compensation measures would be implemented to avoid, minimize, and/or compensate impacts to natural communities:

BIO-9 Silt fence barriers will be installed at the protected zone (7.62 m [25 ft]) outside the drip line of each coast live oak tree to prevent accidental deposition of fill material into areas where trees are immediately adjacent to planned grading activities. No structure of any kind, incidental storage of equipment or supplies, or operation of any construction equipment will be allowed within the protected zone of any coast live oak tree.

BIO-10 A total of 60 to 80 coast live oak trees will be planted within Chino Hills State Park. The actual number of trees to be planted will be based on the total number of trees removed as a result of the proposed project.

BIO-11 Compensatory mitigation for coastal sage scrub impacts within Orange County will be conducted through restoration and/or enhancement within Chino Hills State Park. The mitigation ratios will be a minimum of 3:1 for permanent impacts and 2:1 for temporary impacts. The final mitigation ratios will be coordinated between Caltrans Districts 8 and 12 and the resource agencies.

BIO-12 During construction, all disturbed habitat within the project limits and adjacent to culverts (rated as a moderate or high potential) will be restored with native vegetation. Revegetation near the entrances of the wildlife crossings would provide cover and refuge for wildlife.

BIO-13 During construction, a retaining wall will be constructed adjacent to Wardlow Wash, between Stations 28+65 and 34+10, from the freeway side on the existing slope to minimize impacts to riparian/riverine habitat.

2.17 Wetlands and Other Waters

This section describes the potential impacts of the proposed project to waters of the United States such as wetlands and other jurisdictional waters in and immediately adjacent to the jurisdictional delineation study area.

2.17.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (CWA, 33 USC. 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.

Section 404 of the CWA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters will be significantly degraded. The Section 404 permit program is run by the United States Army Corps of Engineers (USACE) with oversight by the EPA.

Executive Order (EO) 11990 for the Protection of Wetlands also regulates the activities of federal agencies with regard to wetlands. This EO states that a federal agency such as the Federal Highway Administration (FHWA) cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds that there is no practicable alternative to the construction and the proposed project includes all practicable measures to minimize harm.

At the State level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB). Sections 1600 to 1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed

Alteration Agreement 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 USACE jurisdiction may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

Pursuant to Section 6.1.2 of the MSHCP, projects that result in adverse effects to riparian/riverine habitat require a Determination of Biologically Equivalent or Superior Preservation (DBESP) to ensure replacement of any lost functions and values of habitat as it relates to covered species.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCBs also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Refer to Section 2.10, Water Quality, for additional details.

2.17.2 Affected Environment

Due to refinements in the engineering plans, the study area for the jurisdictional delineation is smaller than the BSA. Gypsum Canyon is not included in the jurisdictional delineation study area, and the width of the jurisdictional delineation study area is smaller than the BSA, as the project footprint has been refined.

During the field surveys, 21 distinct potential jurisdictional features, including two wetland areas subject to the jurisdiction of the CDFG and USACE, were identified within the jurisdictional delineation study area and are depicted in the *Jurisdictional Delineation Report* (LSA Associates, Inc., October 2007. These features included ephemeral drainages, intermittent streams, wetlands, and riparian swales. The majority of these features in the jurisdictional delineation study area are ephemeral drainages and artificial ditches that are conveyed beneath the current alignment of SR-91 by small drainage culverts and similar devices. There are also some larger ephemeral drainages and intermittent streams in the BSA. Waters that travel through these features are conveyed beneath existing SR-91 through larger constructed box culverts or 1.52 meters (m) (60 inches [in]) corrugated metal pipe culverts. In addition to ephemeral drainages and intermittent streams, defined wetlands were observed at two locations within the BSA and CDFG-jurisdictional riparian vegetated swales at three locations. Flows in the on-site drainages are predominantly supported by storm water runoff and landscape irrigation originating from adjacent developed and undeveloped parcels as well as drainage of storm water from existing SR-91.

Three areas within 2 of the 21 drainages in the jurisdictional delineation study area satisfy all three criteria for USACE jurisdictional wetlands. As discussed in the Jurisdictional Delineation Report (October 2007), two of these areas are within Drainage 12 and one area is within Drainage 19. The remaining 19 drainages and drainage ditches are all well-drained, ephemeral channels that convey storm water and nuisance flows into the Santa Ana River or Wardlow Wash, a perennial tributary to the Santa Ana River. These 19 drainages will require a significant nexus determination by the USACE, per Rapanos guidance, in order to assess their jurisdictional status.

Both Drainage 12 and Drainage 19 are adjacent to SR-91 and are fed primarily by runoff from the highway and adjacent slopes. The larger wetland area in Drainage 12 is isolated except during heavy rain events. The smaller wetland area in Drainage 12 appears to be receiving flow from a cracked, corrugated metal pipe that runs down the hillside to the south. Drainage 19 is a small drainage that exists between two concrete culverts. This drainage receives runoff flows from adjacent development, and flows continue to the Santa Ana River on the north side of SR-91. It is entirely wetland, with flowing water throughout; however, if the water source that provides flow to this area were turned off, it is likely that the site would cease to be wetland.

The Jurisdictional Study Area contains approximately 1.014 hectares (ha) (2.505 acres [ac]) of USACE jurisdictional waters, of which 0.2026 ha (0.065 ac) consists of wetlands. The Jurisdictional Study Area also contains approximately 1.605 ha (3.967 ac) of CDFG jurisdictional waters and 1.014 ha (2.505 ac) of RWQCB jurisdictional waters (Table 2.34). The Jurisdictional Study Area contains approximately 1.391 ha (0.56 ac) of MSHCP-defined riparian habitat.

As discussed in Chapter 1, two alternatives from the Project Study Report (PSR) were considered but eliminated from further discussion because they would result in substantial adverse impacts to wetlands at Wardlow Wash.

2.17.3 Environmental Consequences

2.17.3.1 Build Alternative (Alternative 2)

The proposed project would result in permanent impacts to approximately 0.142 ha (0.351 ac) of potential USACE jurisdiction, of which approximately 0.021 ha (0.053 ac) is wetlands, and temporary impacts to approximately 0.072 ha (0.178 ac) of potential USACE jurisdiction, of which approximately 0.004 ha (0.010 ac) consists of wetlands. The proposed project would also result in permanent impacts to

approximately 0.265 ha (0.655 ac) of potential CDFG jurisdiction and temporary impacts to approximately 0.192 ha (0.474 ac) of potential CDFG jurisdiction.

Finally, within Riverside County, the project would result in permanent impacts to approximately 0.056 ha (0.139 ac) of MSHCP-defined riparian/riverine habitat and temporary impacts to approximately 0.122 ha (0.302 ac) of riparian/riverine habitat.

Table 2.35 provides a summary of the impacts.

Functions and Values Assessment and DBESP analysis are provided in the NES for the proposed project. The function and value of riparian/riverine habitat associated with Fresno Canyon/Wardlow Wash are considered high due to the presence of least Bell's vireo. Based on informal coordination with the regulatory agencies, the tentative compensatory mitigation program (described below) would be expected to adequately offset impacts to riparian/riverine habitat (including lost functions and value) and result in a biologically equivalent or superior alternative.

Only Practicable Finding

As discussed in Section 2.17.1, Executive Order (EO) 11990 for the Protection of Wetlands required that new construction located in wetlands cannot be undertaken unless the head of the agency finds that there is no practicable alternative to the construction and the proposed project includes all practicable measures to minimize harm.

Based on the Preliminary Environmental Analysis Report (PEAR) for the proposed project, Alternative 2 is the least environmentally damaging practicable alternative (LEDPA) while still meeting the project purpose and need. As discussed in Section 1.4, Alternatives Considered but Eliminated from Consideration, five alternatives were evaluated in the PSR and PEAR but were not carried forward for further evaluation in the Project Report/Environmental Document (PR/ED) phase based on operational flaws or substantial impacts to wetlands at Wardlow Wash.

To the greatest extent practicable, project design features for Alternative 2 (Build Alternative) were modified to accommodate avoidance of suitable habitat for sensitive wildlife species. Areas supporting suitable habitat within and adjacent to the project footprint were conveyed to the engineering team so that steps could be taken to minimize effects. Steps taken during the preliminary design phase included reducing the lateral work limits to avoid habitat, introducing retaining walls where feasible to reduce the level of lateral disturbance, and identifying potential

Table 2.34: Potential USACE and CDFG Jurisdictional Areas

Drainage Number	County	Latitude (North)	Longitude (East)	Linear Feet	Station Post - Begin	Station Post - End	California Quadrangle	Hydrologic Regime	Likely USACE Jurisdictional Status[1]	Potential USACE Non-wetland Waters (acres)	Potential USACE Wetlands (acres)	Total Potential USACE (acres)	CDFG (acres)	Connection to Santa Ana River[2]	Distance to Santa Ana River (miles)	Flow Route to Santa Ana River	Width (feet)	Depth Estimate (feet)	Side Slope Estimate	Primary Substrate	Hydrologic Indicators	Chemical Characteristics	Biological Characteristics
1 *◆	Orange	33.86960	-117.70423	1440	141+00	145+25	*Black Star Ranch*	Ephemeral	Jurisdictional	0.838	0	0.838	1.455	Direct	Less than 1	Culvert under SR-91	5–86	3	3:1	Sand/ cobbles/ asphalt	Scouring, clear line on bank	None	Mulefat/ Elderberry Scrub
2 *◆	Orange	33.87049	-117.70111	108	146+20	146+20	*Black Star Ranch*	Ephemeral	Jurisdictional	0.067	0	0.067	0.067	Direct	Less than 1	Culvert under SR-91	16–30	1	4:1	Loam	Shelving, change in plant community	None	Mulefat Scrub
3 *◆	Orange	33.87272	-117.69689	127	151+00	151+00	*Black Star Ranch*	Ephemeral	Jurisdictional	0.094	0	0.094	0.117	Direct	Less than 1	Culvert under SR-91	30–35	2	2:1	Sand/loam	Shelving, scouring	None	Mulefat/ Elderberry Scrub
4 *◆	Orange	33.87262	-117.69037	527	156+80	158+30	*Black Star Ranch*	V-Ditch	Non-jurisdictional	0.048	0	0.048	0.048	Direct	Less than 1	Culvert under SR-91	4	2	3:1	Concrete	Water staining	None	None
5 *	Orange	33.87179	-117.68775	210	159+80	160+40	*Black Star Ranch*	Ephemeral	Non-jurisdictional	0.014	0	0.014	0.014	Direct	Less than 1	Culvert under SR-91	3	Less than 1	None	Sand/gravel	Poorly defined OHWM	None	Bare ground
6 *◆	Orange	33.87120	-117.68789	190	160+10	160+10	*Black Star Ranch*	Ephemeral	Jurisdictional	0.087	0	0.087	0.087	Direct	Less than 1	Culvert under SR-91	19–22	2	1:1	Sand/ cobbles/ concrete	Shelving, scouring, vegetation absent	None	Wash Scrub
7 *◆	Orange	33.87115	-117.68710	99	160+80	161+00	*Black Star Ranch*	Ephemeral	Non-jurisdictional	0.007	0	0.007	0.007	Direct	Less than 1	Culvert under SR-91	3	Less than 1	None	Sand/gravel	Poorly defined OHWM	None	Bare ground
8 *	Orange	33.87131	-117.68658	279	160+90	161+60	*Black Star Ranch*	Ephemeral	Non-jurisdictional	0.019	0	0.019	0.019	Direct	Less than 1	Culvert under SR-91	3	Less than 1	None	Sand/gravel	Poorly defined OHWM	None	Bare ground
9 *◆	Orange	33.87043	-117.68444	111	163+60	163+60	*Black Star Ranch*	Ephemeral	Non-jurisdictional	0.015	0	0.015	0.015	Direct	Less than 1	Culvert under SR-91	6	Less than 1	None	Asphalt	Water staining	None	None
10 *	Orange	33.86906	-117.68002	52	167+70	167+70	*Black Star Ranch*	Ephemeral	Non-jurisdictional	0.004	0	0.004	0.004	Direct	Less than 1	Culvert under SR-91	3	Less than 1	None	Sand/ concrete	Vegetation absent	None	Ruderal
11 *	Orange	33.86859	-117.67808	259	170+00	170+75	*Black Star Ranch*	Ephemeral	Non-jurisdictional	0.041	0	0.041	0.041	Direct	Less than 1	Culvert under SR-91	7	4	2:1	Sand/ bedrock	Poorly defined OHWM	None	Bare ground
12	Orange	33.86860	-117.67535	1256	170+90	174+50	*Black Star Ranch*	Ephemeral/ Wetlands	Jurisdictional	0.172	0.055	0.227	0.517	Direct	Less than 1	Culvert under SR-91	7–16	6	2:1	Sand/loam/ bedrock	Clear line on bank, inundation	Poor water quality	Cottonwood/ Willow Riparian
SUBTOTAL – Orange County										1.406	0.055	1.461	2.391										
13 *	Riverside	33.87010	-117.66903	452	1+85	3+25	*Black Star Ranch*	Ephemeral	Jurisdictional	0.104	0	0.104	0.104	Direct	Less than 1	Culvert under SR-91	5–15	2	1:1	Sand/ bedrock	Shelving, scouring	None	Ruderal
14 *	Riverside	33.87141	-117.66576	139	5+70	6+00	*Black Star Ranch*	Ephemeral	Jurisdictional	0.028	0	0.028	0.095	Direct	Less than 1	Culvert under SR-91	6–14	25	2:1	Sand/ bedrock	Clear line on bank	None	Cottonwood Riparian
15 *	Riverside	33.87382	-117.66269	170	9+50	9+75	*Black Star Ranch*	Ephemeral	Jurisdictional	0.031	0	0.031	0.031	Direct	Less than 1	Culvert under SR-91	5–12	1	2:1	Asphalt/ sand	Shelving, water staining	None	Ruderal
16 *	Riverside	33.87584	-117.66028	261	12+75	12+75	*Prado Dam*	Ephemeral	Jurisdictional	0.036	0	0.036	0.036	Direct	Less than 1	Culvert under SR-91	4–6	1	2:1	Asphalt/ sand	Shelving, water staining	None	Ruderal
17 *◆	Riverside	33.87904	-117.65502	76	19+40	19+40	*Prado Dam*	Ephemeral	Jurisdictional	0.015	0	0.015	0.048	Direct	Less than 1	Culvert under SR-91	4–12	20	2:1	Gravel/ cobbles	Shelving, clear line on bank	None	Mulefat/ Elderberry Scrub
18 *	Riverside	33.88016	-117.65502	18	22+20	22+20	*Prado Dam*	Ephemeral	Jurisdictional	0.007	0	0.007	0.033	Direct	Less than 1	Culvert under SR-91	16	8	3:1	Sand	Clear line on bank	None	Elderberry Scrub
19	Riverside	33.88085	-117.64980	36	24+40	24+40	*Prado Dam*	Wetlands	Jurisdictional	0	0.010	0.010	0.078	Direct	Less than 1	Culvert under SR-91	12	1	3:1	Sand/muck	Clear line on bank, inundation	Clear Water	Cottonwood/ Willow Riparian
20 *	Riverside	33.88253	-117.64980	1993	27+55	34+75	*Prado Dam*	Ephemeral	Jurisdictional	0.805	0	0.805	1.143	Direct	Less than 1	Culvert under SR-91	8–60	1	1:1	Sand/gravel	Drift deposits, shelving, vegetation absent	None	Cottonwood Riparian
21 *◆	Riverside	33.88387	-117.63581	346	37+40	38+40	*Prado Dam*	Ephemeral	Non-jurisdictional	0.008	0	0.008	0.008	Indirect	Less than 1	Through Wardlow Wash	1	Less than 1	None	Asphalt	Water staining	None	None
SUBTOTAL – Riverside County										1.034	0.010	1.044	1.576										
TOTAL – ENTIRE STUDY AREA										2.440	0.065	2.505	3.967										

* Potential USACE waters that require a significant nexus determination.

◆ Based on current design, these drainages would not be impacted by the project.

[1] Drainages that are not likely to be jurisdictional include those that are poorly defined, are concrete ditches, or are small erosional features.

[2] The portion of the Santa Ana River adjacent to the project area is approximately 25 river miles from tidal waters. To the west of the project area, the River contains relatively permanent perennial flow and has a sandy bottom as far downstream as the I-5 freeway. The River is mostly contained within concrete-lined channels to the west of I-5, although sediment buildup downstream of I-405 has allowed for the growth of lush riparian vegetation between the freeway and the zone of tidal influence.

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Table 2.35 2007 Jurisdictional Impact Summary (Hectares [Acres])

Project Segment	Orange County	Riverside County	Total
USACE Waters of U.S. (Permanent)	0.040 (0.100)	0.080 (0.198)	0.121 (0.298)
USACE Waters of U.S. (Temporary)	0.034 (0.083)	0.034 (0.085)	0.068 (0.168)
USACE Waters of U.S. Total	**0.074 (0.183)**	**0.115 (0.283)**	**0.189 (0.466)**
USACE Wetland (Permanent)	0.021 (0.051)	0.001 (0.002)	0.021 (0.053)
USACE Wetland (Temporary)	0.001 (0.002)	0.003 (0.008)	0.004 (0.010)
USACE Wetland Total	**0.021 (0.053)**	**0.004 (0.010)**	**0.025 (0.063)**
USACE Total	**0.096 (0.236)**	**0.119 (0.293)**	**0.214 (0.529)**
CDFG (Permanent)	0.147 (0.363)	0.118 (0.292)	0.265 (0.655)
CDFG (Temporary)	0.053 (0.131)	0.139 (0.343)	0.192 (0.474)
Total CDFG	**0.200 (0.494)**	**0.257 (0.635)**	**0.457 (1.129)**
MSHCP Riparian/Riverine Habitat (Permanent)	N/A	0.056 (0.139)	0.056 (0.139)
MSHCP Riparian/Riverine Habitat (Temporary)	N/A	0.122 (0.302)	0.122 (0.302)
MSHCP Riparian/Riverine Habitat Total	**N/A**	**0.178 (0.441)**	0.178 (**0.441**)

Source: *Supplementary Natural Environment Study* (LSA Associates, Inc., November 2007).

construction staging areas to be located in areas that have been previously disturbed or developed. As project planning is carried forward, biological resource constraints shall be incorporated into final design.

Throughout the project design process, consultant biologists, in coordination with the project design engineer, evaluated various design alternatives to avoid and/or minimize (to the maximum extent feasible) impacts to wetlands and other biological resources associated with project implementation. Sensitive biological resources and regulatory jurisdiction within the project footprint were identified during the field surveys and conveyed to the design engineer to enable redesign and impact avoidance.

As a result of this coordination, substantial reductions of impacts were achieved at several locations. Most notably, reduction of grading and vegetation removal associated with bridge and culvert modifications at Coal Canyon and Fresno Canyon and the installation of a slope retaining wall located adjacent to Wardlow Wash reduced the extent of impacts to sensitive biological resources within jurisdictional streambeds and associated riparian habitat.

Although impacts to jurisdictional waters have been minimized through design modifications during the project development process, because the wetland areas

within Drainages 12 and 19 are so close to the freeway, there is no way to completely avoid them and still meet the purpose and need of the project.

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to biological resources, including wetlands that may result from such use.

No Build Alternative (Alternative 1)

The No Build Alternative would not result in the construction or operation of any improvements to the project segment of SR-91. Therefore, the No Build Alternative would not result in adverse impacts to waters under the jurisdiction or protection of the USACE, CDFG, or MSHCP.

2.17.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measures BIO-1, BIO-3, BIO-4, BIO-6, and the mitigation measures listed in Section 2.10, Water Quality and Storm Water Runoff, the following measures would avoid, minimize, or compensate the adverse impacts of the proposed project related to jurisdictional waters.

BIO-14 Prior to the initiation of construction, a Nationwide or Individual Permit will be obtained through the USACE pursuant to Section 404 of the Clean Water Act. A mitigation ratio of 5:1 for permanent impacts to Fresno Canyon/Wardlow Wash and federal wetlands, and a mitigation ratio of 3:1 for permanent impacts to other jurisdictional waters was discussed in early coordination with USACE.

BIO-15 Prior to the initiation of construction, a Streambed Alteration Agreement with the CDFG will be obtained. A mitigation ration of 5:1 for permanent impacts to CDFG jurisdiction in Fresno Canyon/Wardlow Wash and a 3:1 mitigation ratio for permanent impacts to other CDFG jurisdiction was discussed in early coordination with CDFG.

BIO-16 During final design, a Habitat Mitigation Monitoring Plan (HMMP) will be developed to restore the impacted riparian habitat. The HMMP will be subject to United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) approval. The HMMP will, at a minimum, need to meet the following criteria: (1) the habitat will be replaced and/or enhanced at a minimum 1:1 ratio, and (2) the HMMP

will identify a success criterion of at least 80 percent cover of native wetland vegetation for replaced habitat. Further criteria specified in the HMMP may include a five-year establishment period for the replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.

BIO-17 Prior to the initiation of construction, a certification or waiver from the Region 4 Regional Water Quality Control Board (RWQCB) will be obtained.

BIO-18 Prior to the initiation of construction, a Determination of Biological Equivalent or Superior Preservation (DBESP) will be obtained pursuant to Section 6.1.2 of the Western Riverside County Multi-species Habitat Conservation Plan (MSHCP).

2.18 Plant Species

2.18.1 Regulatory Setting

The United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Refer to Section 2.20, Threatened and Endangered Species, for detailed information regarding these species.

This section of the document discusses potential impacts of the proposed project to all the other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and nonlisted California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA are at United States Code 16 (USC), Section 1531, et. seq. See also 50 CFR Part 402. The regulatory requirements for CESA are at California Fish and Game Code, Section 2050, et. seq. Caltrans projects are also subject to the Native Plant Protection Act, at Fish and Game Code, Sections 1900–1913, and the California Environmental Quality Act (CEQA), Public Resources Code, Sections 2100–21177.

2.18.2 Affected Environment

The natural communities in the project BSA include a variety of plant species considered sensitive by resource agencies. A literature review resulted in a list of 28 sensitive plant species that have the potential to occur in or within the vicinity of the Biological Study Area (BSA) as determined by federal, State, and CNPS data. Four of these species are federally or State-listed as endangered or threatened and are discussed in more detail later in Section 2.20.

Of the 28 sensitive plant species identified in the literature review, the following six species are considered absent from the project area due to a lack of suitable natural community types present on site:

- Parish's brittlescale *(Atriplex parishii)*
- White-bracted spineflower *(Chorizanthe xanti* var. *leucotheca)*
- Tecate cypress *(Cupressus forbesii)*
- Heart-leaved pitcher sage *(Lepechinia cardiophylla)*
- Mud nama *(Nama stenocarpum)*
- Santiago Peak phacelia *(Phacelia suaveolens* ssp. *keckii)*

Of the 22 sensitive plant species for which potentially suitable habitat exists within the BSA, 15 species were not observed during focused surveys conducted during the appropriate blooming period when these species would have been in flower or conspicuous. Therefore, these species are considered absent from the BSA:

- Chaparral sand-verbena *(Abronia villosa* var. *aurita)*
- San Diego ambrosia *(Ambrosia pumila)*
- Braunton's milk-vetch *(Astragalus brauntonii)*
- Coulter's saltbush *(Atriplex coulteri)*
- Davidson's saltscale *(Atriplex serenana* var. *davidsonii)*
- Malibu baccharis *(Baccharis malibuensis)*
- Plummer's mariposa lily *(Calochortus plummerae)*
- Intermediate mariposa lily *(Calochortus weedii* var. *intermedius)*
- Southern tarplant *(Centromadia parryi* ssp. *australis)*
- Smooth tarplant *(Centromadia pungens* ssp. *laevis)*
- Many-stemmed dudleya *(Dudleya multicaulis)*
- Santa Ana River woollystar *(Eriastrum densifolium* ssp. *sanctorum)*
- Robinson's pepper-grass *(Lepidium virginicum* var. *robinsonii)*
- Chaparral nolina *(Nolina cismontana)*
- San Miguel savory *(Satureja chandleri)*

The remaining species, for which focused surveys were not initially performed during the appropriate flowering period, are considered to have a low potential to occur within the BSA due to the disturbed nature of the site. These remaining plant species are typically associated with undisturbed coastal sage scrub and grassland communities:

- San Fernando Valley spineflower *(Chorizanthe parryi* var. *fernandina)*
- Round-leaved filaree *(Erodium macrophyllum)*
- Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri)*

- Brand's phacelia *(Phacelia stellaris)*
- Rayless ragwort *(Senecio aphanactis)*
- Salt spring checkerbloom *(Sidalcea neomexicana)*
- Thread-leaved Brodiaea *(Brodiaea filifolia)*

Focused surveys were conducted on May 2, 3, and August 7, 2007, in order to survey special-status plant species that were not previously surveyed during their appropriate blooming period. Surveys were conducted for the following species within the BSA:

- Smooth tarplant *(Centromadia pungens* ssp. *laevis)*
- San Fernando Valley spineflower *(Chorizanthe parryi* var. *fernandina)*
- Long-spined spineflower *(Chorizanthe polygonoides* var. *longispina)*
- Santa Ana River woollystar *(Eriastrum densifoliium* ssp. *sanctorum)*
- Round-leaved filaree *(Erodium macrophyllum)*
- Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri)*
- Robinson's pepper-grass *(Lepidium virginicum* var. *robinsonii)*
- Chaparral nolina *(Nolina cismontana)*
- Brand's phacelia *(Phacelia stellaris)*
- San Miguel savory *(Satureja chandleri)*
- Rayless ragwort *(Senecio aphanactis)*
- Salt spring checkerbloom *(Sidalcea neomexicana)*
- Parry's spineflower *(Chorizanthe parryi* var. *parryi)*
- Vernal barley *(Hordeum intercedens)*

None of these species were found during the 2007 surveys.

During focused plant surveys in May and August 2007, Coulter's matilija poppy (*Romneya coulteri*) and Southern California black walnut (*Juglans californica var. californica*) were observed in the BSA. These plants are CNPS4 species, which are not considered sensitive.

2.18.3 Environmental Consequences

2.18.3.1 Build Alternative (Alternative 2)

No adverse impacts to sensitive plant species are expected at this time due to the negative results of focused surveys and the low potential for occurrence of other special-status plant species in the BSA. Although no project impacts are anticipated, additional surveys would be conducted during the appropriate blooming seasons in

2008 to confirm that conditions in the BSA remain the same during final design. These surveys are detailed further in the following section.

2.18.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in any improvements to the project segment of SR-91. No impacts to sensitive plant species are anticipated with the No Build Alternative.

2.18.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measures BIO-1 through BIO-5, the following measures would avoid, minimize, or compensate the impacts to special plant species.

BIO-19 Additional focused surveys will be performed in 2008 during the appropriate blooming periods for sensitive plants. If sensitive plant species are observed during those surveys, additional measures may be warranted (e.g., translocation and preservation in place) based on listing status, quantity, location, and amount of impact, and consultation with regulatory agencies may be required.

BIO-20 Prior to the initiation of construction, a Take Authorization for Covered Species Adequately Conserved (plants and wildlife) will be obtained in compliance with Section 6.0 of the Multi-species Habitat Conservation Plan (MSHCP), which may include payment of a mitigation fee or any credit for land conveyed.

2.19 Animal Species

2.19.1 Regulatory Setting

Many State and federal laws regulate impacts to wildlife. The United States Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NOAA Fisheries), and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Acts (ESAs). Species listed or proposed for listing as threatened or endangered are discussed later in Section 2.20, Threatened and Endangered Species. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the National Environmental Policy Act (NEPA), the Migratory Bird Treaty Act (MBTA), and the Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the California Environmental Quality Act (CEQA), Sections 1600 to 1603 of the Fish and Game Code, and Sections 4150 and 4152 of the Fish and Game Code

2.19.2 Affected Environment

The project Biological Study Area (BSA) and the surrounding areas include both common and sensitive wildlife species. Wildlife expected to occur in or in the vicinity of the BSA includes species of butterflies, amphibians, reptiles, birds, and mammals. The BSA supports suitable habitat for a variety of sensitive wildlife species. After a literature review and an assessment of the various habitat types in the BSA, it was determined that 63 sensitive wildlife species either occur, or have the potential to occur, within the BSA as shown on Table 2.36. Of these 63 sensitive wildlife species, 15 are considered to be absent due to a lack of suitable habitat, and 12 are listed as federal and/or State-endangered or threatened, or proposed endangered or threatened, and are discussed later in Section 2.20, Threatened and Endangered Species. Nine of these 12 species were determined to be absent, based on species distribution and/or the lack of suitable habitat. The remaining species have habitat present in the project vicinity; however, although some suitable habitat exists in the BSA for each of these species, the habitat within the project disturbance limits is predominantly disturbed or

Table 2.36 Sensitive Wildlife Species Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status Listing	Habitat Present (P) or Absent (A)	Probability of Occurrence on Site	Rationale
Fairy Shrimp					
Riverside fairy shrimp	*Streptocephalus woottoni*	FE, CSC	A	Absent	Lack of suitable habitat.
San Diego fairy shrimp	*Branchinecta sandiegonensis*	FE, CSC	A	Absent	Lack of suitable habitat.
Flies					
Delhi sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	FE	A	Absent	Lack of suitable habitat.
Fish					
Arroyo chub	*Gila orcutti*	CSC	A	Absent	Lack of suitable habitat.
Santa Ana sucker	*Catostomus santaanae*	FT, CSC	A	Absent	Critical habitat exists north of the project area. However, due to a lack of suitable habitat in the BSA, this species is considered to be absent from the BSA.
Amphibians					
Coast range newt	*Taricha torosa torosa*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Western spadefoot toad	*Scaphiopus hammondii*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Arroyo toad	*Bufo microscaphus californicus*	FE, CSC	A	Absent	Lack of suitable habitat.
Southwestern pond turtle	*Clemmys marmorata pallida*	CSC	A	Absent	Lack of suitable habitat.
Reptiles					
San Diego horned lizard	*Phrynosoma coronatum blainvillei*	CSC	P	Low	There is suitable habitat present in the BSA.
Belding's Orange-throated whiptail	*Aspidoscelis hyperythra beldingi*	CSC	P	Low	There is suitable habitat and prey species present in the BSA.
Silvery legless lizard	*Anniella pulchra pulchra*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Rosy boa	*Charina trivirgata*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
San Bernardino ring-necked snake	*Diadophis punctatus modestus*	CSA	P	Low	There is suitable habitat in the BSA.
Two-striped garter snake	*Thamnophis hammondii*	CSC	A	Absent	Lack of suitable habitat.
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	CSC	A	Absent	Lack of suitable habitat.

Common Name	Scientific Name	Status Listing	Habitat Present (P) or Absent (A)	Probability of Occurrence on Site	Rationale
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Northern red-diamond rattlesnake	*Crotalus ruber ruber*	CSC	P	Low	There is suitable habitat present in the BSA.
Birds					
White-tailed kite	*Elanus leucurus*	CFP	P	Low	Suitable nesting and foraging habitat occurs in the BSA.
Cooper's hawk (nesting)	*Accipiter cooperii*	CSC	P	Low	Suitable nesting and foraging habitat occurs throughout the BSA.
Northern harrier (nesting)	*Circus cyaneus*	CSC	A	Absent	Lack of suitable habitat.
Bald eagle (nesting)	*Haliaeetus leucocephalus*	SE	A	Absent	Lack of suitable habitat.
Golden eagle (nesting)	*Aquila chrysaetos*	CSC	A	Absent	Lack of suitable habitat.
Merlin	*Falco columbarius*	CSC	P	Low	Foraging habitat is present in the BSA.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC, SE	A	Absent	Lack of suitable habitat.
Costa's hummingbird	*Calypte costae*	CSA	P	Low	There is a limited amount of suitable habitat present in the BSA.
Allen's hummingbird	*Selasphorus sasin*	CSA	P	Low	There is a limited amount of suitable habitat present in the BSA.
Long-eared owl (nesting)	*Asio otus*	CSC	P	Low	The limited amount of suitable habitat present in the BSA is of poor quality.
Burrowing owl (burrow sites)	*Athene cunicularia*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Southwestern willow flycatcher (nesting)	*Empidonax traillii extimus*	FE, SE	P	Low	Although habitat on site is marginal for this species, one individual was observed during surveys conducted in 2007 for another project. It is believed that this may be a migrant due to the marginal quality of the habitat on site. Previously, the closest known record of this species was located approximately 3 miles northeast of the SR-91/SR-71 interchange.
Loggerhead shrike	*Lanius ludovicianus*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Coastal California gnatcatcher	*Polioptila californica californica*	FT, CSC	P	Observed	There is designated critical coastal sage scrub habitat present on site. Additionally, this species was observed during the focused surveys in Orange County in 2005 and in Riverside County in 2007 during focused surveys for a separate project.

Common Name	Scientific Name	Status Listing	Habitat Present (P) or Absent (A)	Probability of Occurrence on Site	Rationale
Least Bell's vireo (nesting)	*Vireo bellii pusillus*	FE, SE	P	Moderate	This species was observed during the reconnaissance survey in Riverside County in 2005 within the BSA. Additionally, this species is known to occur in the vicinity of the BSA (SAWA 2005) and was observed in Riverside County in 2007 during focused surveys for a separate project.
California horned lark	*Eremophila alpestris actia*	CSC	P	Low	There is a limited amount of suitable habitat present on site.
Oak titmouse	*Baeolophus inoratus*	CSA	P	Low	There is suitable habitat present in the BSA.
San Diego cactus wren	*Campylorhynch-us brunneicapillus sandiegensis*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
California thrasher	*Toxostoma redivivum*	CSA	P	Low	There is suitable habitat present in the BSA.
Yellow-breasted chat (nesting)	*Icteria virens*	CSC	P	Low	There is a limited amount of suitable riparian habitat present in the BSA.
Yellow warbler (nesting)	*Dendroica petechia brewsteri*	CSC	P	Low	Suitable nesting habitat is present throughout the riparian habitat.
Tricolored blackbird (nesting colony)	*Agelaius tricolor*	CSC	A	Absent	Lack of suitable habitat.
Chipping sparrow	*Spizella passerina*	CSA	P	Low	There is a limited amount of suitable habitat present in the BSA.
Black-chinned sparrow	*Spizella atrogularis*	CSA	P	Low	There is a limited amount of suitable habitat present in the BSA.
Lark sparrow	*Chondestes grammacus*	CSA	P	Low	There is suitable habitat present in the BSA.
Bell's sage sparrow	*Amphispiza belli belli*	CSC	P	Low	There is a limited amount of suitable habitat present on site.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Lawrence's goldfinch	*Carduelis lawrencei*	CSA	P	Low	There is suitable habitat present in the BSA.
Mammals					
Pallid bat	*Antrozous pallidus*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Mexican long-tongued bat	*Coeronycteris mexicana*	CSC	P	Low	Although limited suitable habitat is present on site, the BSA is outside of the range of this species. This species is not expected to occur in the BSA.
Yuma Myotis	*Myotis yumanensis*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA. This species was observed at the Gypsum Canyon culvert during surveys for the Mountain Park project (PCR 2005).
Western small-footed myotis	*Myotis ciliolabrum*	CSA	P	Low	There is a limited amount of suitable habitat present in the BSA.
Western red bat	*Lasiurus blossevillii*	CSA	P	Low	There is suitable habitat present in the BSA.

Common Name	Scientific Name	Status Listing	Habitat Present (P) or Absent (A)	Probability of Occurrence on Site	Rationale
Hoary bat	*Lasiurus cinereus*	CSA	P	Low	There is suitable habitat present in the BSA.
Southwestern yellow bat	*Lasiurus xanthinus*	CSA	P	Low	There is suitable habitat present in the BSA.
Western pipistrelle	*Pipistrellus hesperus*	CSC	P	Low	There is a limited amount of suitable habitat in the BSA.
Western mastiff bat	*Eumops perotis californicus*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA. However, this bat may forage overhead throughout the BSA.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	CSC	P	Low	May roost in cliffs and rocky outcrops between Gypsum Canyon and Green River Road and within man-made structures in the project disturbance limits.
Big free-tailed bat	*Nyctinomops macrotis*	CSC	P	Low	May roost in cliffs and rocky outcrops between Gypsum Canyon and Green River Road and within man-made structures within the project disturbance limits.
San Diego pocket mouse	*Chaetodipus fallax fallax*	CSC	P	Low	There is suitable habitat present in the BSA. This species is expected to occur in the BSA.
Stephen's kangaroo rat	*Dipodomys stephensi*	FE, ST	A	Absent	Lack of suitable habitat.
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	FE, CSC	A	Absent	Lack of suitable habitat.
San Diego desert woodrat	*Neotoma lepida intermedia*	CSC	P	Low	There is suitable habitat present in the BSA.
Black-tailed jackrabbit	*Lepus californicus bennettii*	CSC	P	Low	There is a limited amount of suitable habitat present in the BSA.
Ringtail cat	*Bassariscus astutus*	CFP	P	Low	There is a limited amount of suitable habitat present in the BSA.

Source: Natural Environmental Study (Chambers Group, Inc. and LSA Associates, Inc., January 2007).

Absent [A] –No habitat present and no further work needed. Habitat Present [HP] – Habitat is, or may be present.
Species present [P] – Based on the literature review the has been observed within the area of the BSA
Critical Habitat [CH] – Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.
Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); California Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Animal (CSA); California Native Plant Society (CNPS), etc.

developed, or consists of nonnative communities, which are not likely to support these species.

A focused survey on the burrowing owl indicated that habitat for the species in the BSA was of poor quality, with no signs of presence in the BSA. The habitat in the BSA does not currently appear to be adequate to support burrowing owl, and therefore, this owl is not expected to occur within the BSA.

The bat habitat suitability assessment in the NES concluded that suitable bat habitat exists within the project disturbance limits. The habitat within the project disturbance limits was determined to be adequate to support bats, which currently occur within the project limits.

2.19.3 Environmental Consequences

2.19.3.1 Build Alternative (Alternative 2)

Construction noise and vibration could disturb bats and temporarily impede access to roost sites in the crevices of bridges, culverts, and overhead structures. The potential impacts to bats would be temporary during construction. Only a small part of the existing roosting habitat would be permanently altered by the proposed bridge modification, and the proposed project would not substantially impact the long-term use of the structures in the project limits by bats.

No adverse impacts to other sensitive wildlife species are expected at this time due to the negative results of burrowing owl surveys and the low potential for occurrence of other sensitive wildlife species on site. Because native habitat including trees would be removed as part of the proposed project, there is the potential for migratory birds (in addition to threatened or endangered birds discussed in Section 2.20) to be impacted. Likewise, bridge widening has the potential to impact bridge and crevice-nesting birds. Therefore, pre-construction surveys would be conducted no more than 14 days prior to the start of the work to identify birds nesting within 150 m (500 ft) of the project site. These surveys are detailed further below.

2.19.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in any improvements to the project segment of SR-91. No loss of habitat for sensitive wildlife species would occur under the No Build Alternative.

2.19.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measures BIO-1 through BIO-8, the following measures would avoid, minimize, or compensate the adverse project impacts to wildlife species.

BIO-21 Construction will be conducted outside the general breeding season (February 15 to August 31) for birds. If construction cannot be conducted outside the breeding season, a preconstruction survey will be conducted by a qualified biologist to determine whether any active nests are within 155 meters (m) (500 feet [ft]) of the area of disturbance. If active nests are found, an exclusion area will be established around the nest. No construction personnel, activities, materials, or equipment will be permitted in this exclusion area until the nest is no longer active, as determined by a qualified biologist.

BIO-22 Bridgework will be conducted between September 1 and February 14 to protect bridge and crevice-nesting birds. If this is not feasible, all bridge and crevice bird nests that will potentially be impacted by project construction must be removed under the guidance and observation of a qualified biologist prior to February 1. Removal of nests must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed under the guidance and observation of a qualified biologist. Nest exclusion devices, if used, must remain in place until September or completion of construction.

BIO-23 During final design, a qualified bat biologist will survey the project area to assess the potential for its use as a maternity and night roost. In addition, prior to construction in bridge and structure work areas, those areas will be inspected in June and again prior to construction by a qualified bat biologist to assess the potential for its use as a maternity and night roost. Bridge and structure work will not be conducted during the maternity roosting period (typically in the fall and winter months). If this is not feasible, exclusion devices will be installed under the guidance and observation of a qualified biologist. Those nest exclusion devices must remain in place until the completion of construction.

BIO-24 Prior to the initiation of construction, burrowing owl surveys will be conducted to comply with the MSHCP, Migratory Bird Treaty Act, and the Fish and Game Code for the entire project area. If preconstruction

surveys determine that the species is present in Riverside County, one or more of the following mitigation measures may be required under the MSHCP: (1) avoidance of active nests and surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of on-site habitat with long-term conservation value for the owl. Should burrowing owls occur in Orange County, similar measures would apply.

2.20 Threatened and Endangered Species

2.20.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of threatened and endangered species and the ecosystems on which they depend. Under Section 7 of FESA, federal agencies such as the Federal Highway Administration (FHWA) are required to consult with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as "…harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct." Pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU), as described in the National Environmental Policy Act (NEPA) Delegation Pilot Program Memorandum of Understanding (MOU) between FHWA and Caltrans, Caltrans was designated the authority to conduct Formal Section 7 Consultation, effective July 1, 2007.

California has enacted a similar law at the State level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Game (CDFG) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered or threatened species. Take is defined in Section 86 of the Fish and Game Code as "…hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. Since this project requires a Biological Opinion under Section 7 of FESA, CDFG will also authorize impacts to CESA species via a Consistency Determination under Section 2081 of the Fish and Game Code and pursuant to the Western Riverside County MSHCP.

2.20.2 Affected Environment

The literature review was conducted to identify suitable habitat for a variety of plant and wildlife species. The literature review resulted in a list of 28 sensitive plant species and 63 sensitive wildlife species that have the potential to occur within the Biological Study Area (BSA). Four of the 28 sensitive plant species and 12 of the 63 sensitive wildlife species are federally and/or State-listed endangered, threatened, or candidate species.

The potentially present threatened and endangered species list provided by the USFWS (Appendix L) and the literature review identified the potential for four threatened or endangered animal species and six plant species to occur in the proposed project area: the Santa Ana sucker *(Catostomus santaanae),* southwestern willow flycatcher *(Empidonax traillii extimus),* coastal California gnatcatcher *(Polioptila californica californica),* least Bell's vireo *(Vireo bellii pusillus),* San Diego ambrosia *(Ambrosia pumila),* Braunton's milk-vetch *(Astragalus brauntonii),* thread-leaved brodiaea *(Brodiaea filifolia),* San Fernando Valley spineflower *(Chornizanthe paryii* var. *fernandina),* Santa Ana woolly-star *(Eriastrum densifolium* ssp. *sanctorum),* and Brand's phacelia *(Phacelia stellaris).*

Focused surveys were conducted for the threatened and endangered plant species with potentially suitable habitat in the project BSA. Surveys were completed during the blooming season of the Braunton's milk-vetch, San Diego ambrosia, and Santa Ana River woollystar, which were found to be absent from the project BSA. While surveys were not performed during the blooming season for the San Fernando Valley spineflower and Brand's phacelia, these species are considered to have a low potential for occurrence in the project BSA due to marginal or limited habitat.

Of the 12 threatened and endangered wildlife species, 9 species were determined to be absent from the project BSA based on species distribution and/or the lack of suitable habitat in the area. Focused surveys were conducted for the southwestern willow flycatcher, coastal California gnatcatcher, and least Bell's vireo. The focused surveys indicated that habitat for the southwestern willow flycatcher was poor quality, and there were no signs of presence of this species. However, focused surveys confirmed the presence of coastal California gnatcatcher and least Bell's vireo in the BSA.

During focused surveys conducted in 2007 for another project, California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher were observed in the BSA.

One California gnatcatchergnatcatcher was observed within the BSA in the Wardlow Wash area. There was no evidence that the California gnatcatcher was paired. One pair of least Bell's vireo was found in Fresno Canyon Wash, and one southwestern willow flycatcher migrant was found in Wardlow Wash.

2.20.3 Environmental Consequences

2.20.3.1 Build Alternative (Alternative 2)

No adverse impacts to threatened and endangered plant species are anticipated due to the negative results of focused surveys and the low potential for occurrence on site of other threatened and endangered plant species not surveyed during the blooming period. Although no project impacts are anticipated, additional surveys would be conducted during the appropriate blooming seasons in 2008 to confirm that conditions in the BSA remain the same during final design.

Based on the absence of suitable habitat within the BSA, the Santa Ana sucker is not expected to occur within the project footprint; therefore, the proposed project is not expected to result in direct effects to this species. Because the proposed project would involve soil disturbance and grading and an increase in impervious area, there is the potential for erosion and off-site sedimentation to occur during construction and increased pollutant loading to occur during operation. Should project-related sediment or increased pollutant loading discharge to the Santa Ana River, they could adversely affect the sucker. However, the project includes best management practices (BMPs) in the form of erosion control, pollution prevention, and runoff treatment to protect water quality in the area, as discussed in Section 2.10, Water Quality and Storm Water Runoff. With implementation of the water quality measures (WQ-1, WQ-2, and WQ-3), adverse indirect effects to this species are not expected to occur.

Direct and indirect effects to coastal California gnatcatcher habitat are expected to occur as a result of project construction. The proposed project would result in direct, permanent effects to approximately 2.30 hectares (ha) (5.69 acres [ac]) of coastal sage scrub, of which 1.09 ha (2.93 ac) are designated critical habitat. The proposed project would also temporarily affect 0.89 ha (2.21 ac) of coastal sage scrub, of which 0.59 ha (1.47 ac) is designated critical habitat. Coastal California gnatcatcher are likely to be found in or near the project BSA at the time of construction. Through implementation of avoidance, minimization, and mitigation measures prior to and during construction, no direct take of gnatcatchers is expected. However, take of designated critical coastal sage scrub habitat and occupied coastal California gnatcatcher habitat is expected to occur as a result of project implementation.

Direct and indirect effects to least Bell's vireo and southwestern willow flycatcher habitat are expected as a result of project construction. Least Bell's vireo and southwestern willow flycatcher have been found in and near theBSA in Fresno Canyon and Wardlow Wash. The proposed project would result in direct, permanent effects to approximately 0.04 ha (0.10 acre [ac]) of least Bell's vireo and southwestern willow flycatcher habitat. The proposed project would also temporarily affect 0.12 ha (0.29 ac) of least Bell's vireo and southwestern willow flycatcher habitat. By implementing avoidance, minimization, and mitigation measures prior to and during construction, no direct take of least Bell's vireo or southwestern willow flycatcher is expected; however, potential adverse effects to occupied habitat may occur.

Caltrans and FHWA initiated informal Section 7 consultation with USFWS in August 2005, which included potential impacts to the coastal California gnatcatcher. This was followed up with teleconferences and e-mails regarding wildlife connectivity issues, avoidance measures, habitat restoration, and habitat mitigation ratios.

An on-site meeting occurred on February 1, 2006. Participants included Ryan Chamberlain (Caltrans District 12), Karen Drewe (Caltrans District 12), Scott Quinnell (Caltrans District 8), Jonathan Snyder (USFWS), Jeff Brandt (CDFG), Naeem Siddiqui (CDFG), Stephanie Hall (USACE), Adam Fischer (Regional Water Quality Control Board [RWQCB]), Marzieh Ghandehari (Kimley-Horn and Associates, Inc.), and Chris Blandford (Chambers Group, Inc.). A site review was conducted by vehicle. General components of the project were discussed. Impacts to biological resources, sensitive species (i.e., coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher), jurisdictional waters, wetlands, riparian vegetation, and wildlife corridors were reviewed. Formal Section 7 Consultation with USFWS was initiated on July 10, 2007, and the Biological Opinion (BO) was issued on November 29, 2007 (Appendix L).

2.20.3.2 No Build Alternative (Alternative 1)

The No Build Alternative would not result in any improvements to SR-91. No impacts to threatened and endangered species are anticipated with the No Build Alternative.

2.20.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Measures BIO-1 through BIO-8 and BIO-21 through BIO-24, the following measures would avoid, minimize, or compensate project impacts to

threatened and endangered species. Measures listed in the BO are incorporated into BIO-2, BIO-3, and BIO-6; the verbatim measures from the BO are listed in Appendix D.

BIO-25 Construction will be conducted outside the coastal California gnatcatcher (February 15 to August 30), least Bell's vireo (March through September), and southwestern willow flycatcher (May 1 through August 31) breeding seasons. If construction cannot be conducted outside these breeding seasons, preconstruction surveys will be conducted by a qualified biologist to determine whether any active nests are within 155 meters (m) (500 feet [ft]) of the area of disturbance. If active nests are found, an exclusion area will be established around the nest. No construction personnel, activities, materials, or equipment will be permitted in this exclusion area until the nest is no longer active, as determined by a qualified biologist.

BIO-26 The project will adhere to the measures listed in the Biological Opinion issued by United States Fish and Wildlife Service (USFWS) under Formal Section 7 Consultation for impacts to coastal California gnatcatcher and least Bell's vireo. In addition, as part of the MSHCP joint review process, resource agencies (i.e., CDFG, USFWS) will be consulted.

2.21 Invasive Species

2.21.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "…any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999, directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.21.2 Affected Environment

Exotic plant species occur in the ruderal plant communities throughout the BSA, within patches of native plant communities, and in areas that have been disturbed by human use. Exotic species are more numerous adjacent to roads and developed areas and frequently border ornamental landscape. The ruderal plant community in the BSA is typically dominated by nonnative species such as black mustard, castor bean, Italian thistle, giant reed, and pepper-grass.

Isolated patches of invasive plant species were observed during the 2005 site reconnaissance surveys. Eighteen exotic plants on the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory were identified in the BSA. Each plant in the inventory is given an overall rating of high, moderate, limited, or unknown based. Plants with a rating of high have severe ecological impacts. Plants with a rating of moderate have a substantial and apparent, but not severe, ecological impact. Plants with a limited rating are invasive but their ecological impacts are minor on a statewide level. The invasive species identified in the BSA are listed in Table 2.37.

Table 2.37 Invasive Plants Located within the BSA

Common Name	Scientific Name	Cal-IPC Rating
Giant reed	*Arundo donax*	high
Iceplant	*Carpobrotus* sp.	high
Fennel	*Foeniculum vulgare*	high
Yellow star-thistle	*Centaurea solstitialis*	high
Mediterranean tamarisk	*Tamarix ramosissima*	high
Fountain grass	*Pennisetum setaceum*	moderate
Pepper-grass	*Lepidium latifolium*	high
Euphorbia	*Euphorbia* sp.	limited to high, depending on species
Tree of heaven	*Alianthus altissima*	moderate
Foxtail chess	*Bromus rubens*	high
Peruvian pepper tree	*Schinus molle*	limited
Brazilian pepper tree	*Schinus terebinthifolius*	limited
English ivy	*Hedera helix*	high
Italian thistle	*Carduus pycnocephalus*	moderate
Tocalote	*Centurea melitensis*	moderate
Black mustard	*Brassica nigra*	moderate
Castor bean	*Ricinus communis*	limited
Olive	*Olea europaea*	limited

Source: Natural Environmental Study (Chambers Group, Inc. and LSA Associates, Inc., January 2007).

2.21.3 Environmental Consequences

2.21.3.1 Build Alternative (Alternative 2)

Construction and operation of the Build Alternative has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasive species, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that seed is spread along the highway. None of the species on the California list of noxious weeds is currently used by Caltrans for erosion control or landscaping in Orange and Riverside Counties.

2.21.3.2 No Build Alternative (Alternative 1)

The No Build Alternative does not propose any construction or other disturbance in the project area. Therefore, the No Build Alternative would result in no adverse impact related to invasive species.

2.21.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes recommended actions that avoid, minimize, or mitigate the potential project impacts related to invasive species.

BIO-27 In compliance with Executive Order 13112, affected areas will be revegetated with plant species native to the vicinity, and the use of species listed on the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory will be avoided. In addition, for the parts of the project in

Riverside County, invasive and nonnative species listed in Table 6-2 in the MSHCP will be avoided.

BIO-28 All construction equipment will be inspected and cleaned off site to minimize the importation of nonnative plant material, and eradication strategies (i.e., weed abatement programs) will be employed should an invasion occur.

CUMULATIVE IMPACTS

2.22 Cumulative Impacts

2.22.1 Regulatory Setting

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

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

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA is provided in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 CFR, Section 1508.7, of the Council on Environmental Quality (CEQ) Regulations.

2.22.2 Affected Environment

The cumulative study area for the proposed project includes the areas in the cities of Anaheim, Yorba Linda, and Corona and unincorporated Orange and Riverside Counties in the vicinity of the project segment of SR-91. The study area is limited to this area because the proposed eastbound lane addition does not affect an area large enough to be considered regional in its impacts.

The project segment of SR-91 is mostly surrounded by open space, with residential and commercial development concentrated in the Cities of Anaheim and Corona. The area adjacent to and north of SR-91 and west of Coal Canyon Road is built out with commercial and residential uses. Future development in this area would consist of redevelopment/reconstruction. The area adjacent to and north of SR-91 and east of Coal Canyon Road comprises recreational and institutional uses, including the Santa Ana River, Chino Hills State Park, the Green River Golf Course, and Prado Dam. Additional development is not planned in these areas. On the south side of SR-91, just east of SR-241, the large (2,500 units) Mountain Park residential development is planned in the location of a former rock quarry. The area south of SR-91 and east of the Mountain Park site is undeveloped and is part of two Habitat Conservation Plans (HCPs), the Orange County Natural Communities Conservation Plan (NCCP) & HCP and the Western Riverside County Multi-species Habitat Conservation Plan (MSHCP). These areas are protected from development**.** The Orange County NCCP & HCP were adopted in July 1996. The Western Riverside County MSHCP was adopted in June 2003. Residential and commercial development in the City of Corona dominates the area west of the SR-71, Wardlow Wash, Prado Dam.

The natural resources in the project area and vicinity are considerable and well-established. There are several native habitats south of SR-91 within the project limits that are home to sensitive species, including the federally endangered least Bell's vireo and the coastal California gnatcatcher. The federally threatened Santa Ana sucker is known to occur in the Santa Ana River east and north of the project site. Prado Dam controls flow to the Santa Ana River, which provides habitat in the project area and is utilized for groundwater recharging west of the project area. Wardlow Wash is designated a Significant Natural Resource by the California Department of Fish and Game (CDFG). Coal Canyon is an important wildlife corridor because it connects the Orange County NCCP with Chino Hills State Park. Featherly Regional Park, Chino Hills State Park and Trail, Cleveland National Forest, and the Green River Golf Club are important public recreation resources.

Table 2.38 lists the cumulative projects considered in this analysis. There are several transportation improvements planned on SR-91 in the vicinity.

It is anticipated that future projects within this segment of SR-91 would be designed to minimize throwaway project features associated with the proposed project.

Table 2.38 Cumulative Projects

Name	Jurisdiction	Development	Status
Mountain Park	City of Anaheim	Mountain Park Specific Plan includes 2,500 residential units, 875 hectares (ha) (2,163 acres [ac]) of open space, and related infrastructure	Approved
Green River Ranch	City of Corona	Mixed Use, commercial and estate residential on 66.77 ha (165 ac)	Approved
SR-91/Green River Road Interchange Project EA 08-456614	Caltrans	Interim Interchange and overcrossing replacement	Approved Construction is ongoing
SR-91/Green River Road Interchange Landscape Project EA 08-456613	Caltrans	Landscaping for the interchange	Approved Construction is ongoing
SR-91/Green River Road Interchange Project	Caltrans	Ultimate reconstruction of the Green River interchange	10-plus years from construction
SR-91 Express Lanes Pavement Rehabilitation and Safety Features upgrade EA 0E05U4	Caltrans	From SR-55 to Riverside County Line	Currently being designed; construction is anticipated to be completed in 2007
SR-91 Additional General Purpose Lanes	Caltrans	One additional general purpose lane in each direction on SR-91 between SR-241 and SR-71	Project Study Report and Preliminary Environmenal Analysis 10 to 15 years from construction
SR-91 Additional General Purpose Lanes	Caltrans	One additional general purpose lane in each direction on SR-91 between SR-55 and SR-241	Project Report and Draft ED.
SR-91 Additional General Purpose or HOV lanes	Caltrans	One additional general purpose or high occupancy vehicle (HOV) lane in each direction on SR-91 between the Riverside County/Orange County line and SR-71	Project Study Report and Preliminary Environmenal Analysis 10 to 15 years from construction
SR-91 Additional Lanes	Caltrans	One additional general purpose lane in each direction from end of 2nd HOV at SR-71 to near Pierce Street	6 to 10 years from construction
SR-91/SR-71 Reconstruction	Caltrans	Widen ramps to two lanes	Project Study Report and Preliminary Environmenal Analysis 6 to 10 years from construction
SR-91 HOV direct connectors	Caltrans	Addition of direct connectors from the SR-91 Express Lanes to the SR-241 toll road	Feasibility Study 10-plus years from construction
SR-91 Auxiliary Lane	Caltrans	Addition of a second auxiliary lane on eastbound SR-91 from SR-241 to the Green River interchange	10-plus years from construction
SR-91 Auxiliary Lane	Caltrans	Addition of a second auxiliary lane on westbound SR-91 from SR-241 to the Green River interchange	10-plus years from construction
SR-91 Collector/distributor	Caltrans	Addition of a barrier-separated eastbound collector/distributor road from SR-241 to SR-71	10-plus years from construction
SR-91 Branch connector	Caltrans	Addition of a freeway-to-freeway branch connector from eastbound SR-91 to northbound SR-71	10-plus years from construction

Name	Jurisdiction	Development	Status
SR-91 Elevated roadway	Caltrans	Addition of an elevated four-lane divided structure within the median of SR-91	10-plus years from construction
SR-91 Additional General Purpose Lanes	Caltrans	• From SR-241 to Pierce Street: Construct one mixed-flow lane and auxiliary lane in each direction • From Lincoln Avenue to I-15: Construct collector-distributor system in each direction • From Riverside/Orange County line to I-15: Construct one high-occupancy toll (HOT) lane and convert one existing HOV lane to a HOT lane in each direction • Construct HOV/HOT lane median direct connector from northbound I-15 to westbound SR-91 and eastbound SR-91 to southbound I-15.	Project Study Report and Preliminary Environmental Analysis 10 to 15 years from construction

Sources: City of Anaheim Planning Department, City of Corona Planning Department, SR-91 Eastbound Lane Addition Draft Project Report.
Note: Future projects identified along SR-91 are being evaluated in a Project Study Report and may be combined into one or more projects at a later date.

2.22.3 Environmental Consequences

2.22.3.1 Project Contributions to Cumulative Impacts

As discussed earlier in Section 2.2 (Growth), the proposed project would not attract or promote growth in the cumulative study area. The proposed project would not contribute to long-term effects associated with the projected growth in the region such as traffic congestion, air quality reduction, noise impacts, urbanization, loss of habitat, or historical resources impacts.

The proposed project would reduce congestion associated with an existing chokepoint and would improve safety by reducing lane weaving and providing standard lane widths on the project segment of eastbound SR-91.

The proposed project would not have adverse impacts after the application of avoidance, minimization, and mitigation measures as described in Section 2, Environmental Analysis. This cumulative analysis is limited to the resources that require avoidance, minimization, and mitigation measures to analyze whether the impact contribution to those resources, when the proposed project is considered with other cumulative projects, could be cumulatively considerable. In addition, temporary construction impacts of the project are not considered contributory to cumulative impacts, given the limited duration, localization, and small scale of these impacts as well as the avoidance, minimization, and mitigation measures applied to them.

Therefore, the cumulative analysis only considers potential cumulative long-term impacts of the proposed project and the other cumulative projects.

Long-term project impacts to the following resources require avoidance, minimization/and or mitigation measures as described earlier in this section:

- Land Use: Minor acquisition of land designated as open space
- Visual and aesthetics: Changes in views
- Noise: Traffic noise increases to sensitive receptors
- Hazardous Materials and Hazardous Waste: Disposal of hazardous wastes
- Geology/Soils/Seismic/Topography: Ground stability and seismic activity
- Paleontolgy: Subsurface resources
- Water Quality: Urban runoff
- Biological Resources: Wetlands, wildlife, habitat, and invasive species

Land Use

The Build Alternative would result in minimal permanent impacts (0.85 ha/0.21 ac) to designated open space south of SR-91 in order to relocate an existing access road. No developed recreational facilities would be affected. The future widening of SR-91 associated with the other transportation projects would likely result in additional impacts to designated open space on both the north and south sides of SR-91. The development projects listed in Table 2.38 would not result in the loss of open space. All the transportation projects, including the proposed project, are anticipated to comply with conditions of the Orange County NCCP and HCP and Western Riverside County MSHCP and thereby avoid any potentially substantial adverse impacts to sensitive biological resources in the adjacent open space areas. In addition, avoidance, minimization, and mitigation measures are required under CEQA and NEPA for impacts to recreation resources so that those resources may maintain their use. Although the proposed project and the cumulative transportation projects would result in a small loss of open space, adverse impacts to sensitive biological resources and recreational resources would not occur with compliance with State and federal regulations.

The No Build Alternative, Alternative 1, would not result in changes to land use and would not contribute to a cumulative land use impact.

Visual Resources

The Build Alternative would result in changes in views to and from the project area along a State-designated scenic highway. These potential effects can be substantially mitigated based on avoidance, minimization, and mitigation measures provided earlier in Section 2.7, Visual/Aesthetics. The changes in the views in this area would be generally consistent with the existing views of developed areas along the project segment of SR-91. The other proposed projects are also anticipated to result in minor modifications to views in the area, and applicable avoidance, minimization, and mitigation measures would be implemented. Therefore, Alternative 2 is not anticipated to contribute to cumulative adverse impacts related to aesthetics and visual resources.

The No Build Alternative, Alternative 1, would not change views in the area or contribute to cumulative impacts related to aesthetics and visual resources.

Noise

Noise is a localized impact that is mitigated by individual projects. As shown in Table 2.27, the traffic noise impacts associated with the proposed project are minimal (maximum of 1 dBA increase). However, since the existing traffic noise at certain sensitive receptors approaches or exceeds the federal noise abatement criteria, sound walls were evaluated. Long-term traffic noise under Alternative 2 would be minimized through construction of four sound walls. If other projects are determined to result in adverse noise impacts, appropriate avoidance, minimization, and mitigation measures would be incorporated into those projects. Therefore, Alternative 2 is not anticipated to contribute to long-term adverse cumulative noise impacts.

The No Build Alternative would not result in noise impacts associated with constructing a freeway lane closer to sensitive receptors and therefore would not contribute to a cumulative noise impact. However, under the No Build Alternative, traffic noise would increase due to the increase in traffic forecasted in 2030.

Hazardous Materials and Hazardous Wastes

Alternative 2 would involve the modification and/or reconstruction of existing structures that may contain hazardous materials as well as disturbance of soil that may contain elevated levels of aerially deposited lead. These are potential localized impacts that would not affect other projects in the vicinity. Alternative 2 would also result in a small increase of the amount of hazardous materials for disposal at

appropriately permitted landfills. The potential impacts of hazardous materials can be avoided and/or minimized through compliance with State and federal regulations as specified in Section 2.13, Hazardous Materials and Hazardous Waste. Under existing regulations, each of the cumulative projects is required to generate, store, transport, and dispose of hazardous materials consistent with applicable laws and regulations, which would be specified in the avoidance and minimization measures for that project. Therefore, Alternative 2 is not anticipated to contribute to long-term adverse cumulative hazardous materials impacts.

The No Build Alternative would not involve the degree of potential impacts associated with Alternative 2; however, there is the potential of exposure to hazardous materials through regular maintenance activities. These impacts would be avoided and/or minimized through compliance with State and federal regulations.

The No Build Alternative would not contribute to a cumulative hazardous materials or hazardous waste impact.

Geology/Soils/Seismic/Topography

Potential geology impacts associated with Alternative 2 are typical for any development in California (e.g., potential for seismic activity, landslides, and liquefaction). Geology hazards are localized and specific to each development, and surrounding development is considered in foundation design. Alternative 2 includes avoidance and minimization measures to address geology hazards in the area while considering the surrounding development, consistent with State and federal regulations as discussed in Section 2.11, Geology/Soils/Seismic/Topography. The cumulative projects would be under the same requirement. Therefore, the proposed project is not anticipated to contribute to long-term adverse cumulative geologic hazards impacts.

The No Build Alternative would not result in geologic hazards associated with design and would not contribute to a cumulative geologic hazards impact. However, it is exposed to the same geologic environment as Alternative 2, and it would not include updated geotechnical design required for the proposed project.

Paleontology

The study area for cumulative impacts to paleontological resources includes the project area and immediately adjacent areas because paleontological conditions and finds are localized. Implementation of Alternative 2 has the potential to encounter paleontological resources during excavation activities due to the high sensitivity of

the subsurface formations in the project area and vicinity. Alternative 2 includes mitigation measures to address the potential for encountering, monitoring, and proper handling of paleontological resources. These are standard measures employed by Caltrans and required under CEQA. Implementation of these mitigation measures would prevent adverse impacts to paleontological resources. Combined with the proposed project, anticipated potential cumulative impacts include the continued destruction and recovery of paleontological resources as a result of excavation associated with construction of other land development and infrastructure projects. However, other projects would also be required to comply with the applicable federal and State regulations identified in Section 2.12.1. Because these regulations require monitoring, avoidance, and recovery, adverse cumulative impacts are not anticipated.

Water Quality and Storm Water Runoff

Alternative 2 would increase the surface area for highway runoff, potentially increasing the concentrations of certain pollutants. These pollutants were discussed earlier in the context of the Santa Ana River watershed in Section 2.10, Water Quality and Storm Water Runoff. Alternative 2 would be required to implement appropriate design pollution prevention and treatment best management practices (BMPs) to target potential storm water runoff pollutants during project operation consistent with the SWMP (June 2007, or subsequent issuance). In fact, the proposed project includes bioswales and water quality basins for treatment of urban runoff, where no treatment is currently in place. Under federal regulations, all new development projects are required to incorporate Design Pollution Prevention BMPs and Treatment BMPs (by development category) to improve existing water quality. Therefore, the proposed project is not anticipated to contribute to long-term adverse cumulative water quality impacts.

Compared to existing conditions, the No Build Alternative would not result in adverse change to water quality and storm water runoff because it would not include any construction or add any additional surface area; therefore, it would not contribute to a cumulative water quality impact. However, the No Build Alternative would not include any Treatment BMPs that could improve urban runoff quality in the project area.

Biological Resources

The cumulative study area for biological resources includes the SR-91 alignment and the areas adjacent to SR-91, which include surrounding natural habitat as well as the wildlife crossings below the freeway. The adverse impacts of Alternative 2 to

wetlands, wildlife, habitat, and potential invasive species can be avoided and/or minimized, as described in detail earlier in Sections 2.16 through 2.21, Biological Environment. These impacts are localized and do not impact areas, resources, or plans beyond the project disturbance limits. Future projects that involve additional road widening may result in the loss of riparian and coastal sage scrub habitats. Future projects have the potential to encroach into suitable habitat for the least Bell's vireo, coastal California gnatcatcher, and federally listed plant species. Furthermore, because of the proximity of the Santa Ana River to SR-91, indirect impacts to aquatic habitat would potentially occur in the future. Hypersedimentation and the introduction of toxins through runoff may have a negative effect on aquatic habitats.

The Build Alternative and the other projects would contribute to a long-term loss of resources. However, the Build Alternative includes appropriate measures that substantially avoid or reduce the impact of the SR-91 additional lane project on biological resources, including habitat restoration and compensation. Each project is subject to the mitigation requirements delineated by each natural resource agency that has jurisdiction over the area, including the United States Fish and Wildlife Service (USFWS), CDFG, Regional Water Quality Control Board (RWQCB), the United States Army Corps of Engineers, and the State Department of Parks and Recreation. Therefore, the Build Alternative would not contribute to a cumulative adverse impact to biological resources.

Because it would not disturb habitat, the No Build Alternative, Alternative 1, would not contribute to a cumulative impact to biological resources.

2.22.4 Conclusion

Over the years, development in the cities of Yorba Linda, Anaheim, and Corona as well as unincorporated Orange County has filled in vacant areas adjacent to the natural resource areas in the project vicinity, but has not spread into these areas. The establishment of conservation areas, as well as declining natural resources in Southern California and environmental regulatory enforcement, would protect these areas from development in future years.

The cumulative study area is represented in Figure 2-1. When comparing Figure 2-1 with Figure 2-3, land uses are relatively unchanged except for the portion in Anaheim near SR-241, which will be developed according to the approved Mountain Park Specific Plan. Development in the cumulative study area would not be consistent with the applicable adopted General Plans and is prohibited in protected areas. Although

SR-91 provides an important connection between the Inland Empire and Orange County, in itself, the proposed project would not promote growth in the cumulative study area that is not already allowed or planned in the General Plans.

The proposed project includes avoidance, minimization, and mitigation measures for project-specific impacts. Because the avoidance, minimization, and mitigation measures included in Section 2 are expected to substantially avoid and/or minimize the adverse effects of the proposed project, and there are no existing resources in the area that have been substantially impacted by existing development, no substantial contribution to cumulative impacts is anticipated. Avoidance, minimization, and mitigation measures to reduce impacts from the other planned projects would be developed in coordination with the applicable CEQA and/or NEPA lead agencies and the resource agencies.

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Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings and interagency coordination meetings. This section summarizes the results of Caltrans and OCTA's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Public Agency Coordination and Consultation

Following is a list of public agency coordination efforts.

- A teleconference occurred on August 18, 2005, between Karen Drewe (Caltrans District 12), Ryan Chamberlain (Caltrans District 12), Jonathan Snyder (United States Fish and Wildlife Service [USFWS]), and Larry Vinzant (Federal Highway Administration [FHWA]). The discussion included potential effects to coastal California gnatcatcher and Section 7 consultation requirements.
- A teleconference occurred on November 15, 2005, between Karen Drewe (Caltrans District 12) and Jonathan Snyder (USFWS). The discussion included the need for project environmental documents to address wildlife connectivity issues within the project area.
- A 10-day focused survey notification letter was sent to Mr. Daniel Marquez (USFWS) by Mike McEntee (Chambers Group, Inc.) on October 20, 2005.
- A species list for the project area was provided by Karen A. Goebel (USFWS) and received by Smita Deshpande (Caltrans District 12) on January 9, 2006.
- An on-site meeting occurred on February 1, 2006. Participants included Ryan Chamberlain (Caltrans District 12), Karen Drewe (Caltrans District 12), Scott Quinnell (Caltrans District 8), Jonathan Snyder (USFWS), Jeff Brandt (California Department of Fish and Game [CDFG]), Naeem Siddiqui (CDFG), Stephanie Hall (USACE), Adam Fischer (Regional Water Quality Control Board [RWQCB]), Marzieh Ghandehari (Kimley-Horn and Associates, Inc.), and Chris Blandford (Chambers Group, Inc). A site review was conducted by vehicle. General components of the project were discussed. Impacts to biological resources,

sensitive species (i.e., coastal California gnatcatcher and least Bell's vireo), jurisdictional waters, wetlands, riparian vegetation, and wildlife corridors were reviewed.

- A teleconference occurred on February 13, 2006, between Karen Drewe (Caltrans District 12) and Jonathan Snyder (USFWS). The discussion included the impacts to the coastal California gnatcatcher, specifically in regard to the timing of bridge construction at Coal Canyon and the breeding season for the coastal California gnatcatcher.
- An e-mail discussion began on March 21, 2006. Participants included Ryan Chamberlain (Caltrans District 12), Karen Drewe (Caltrans District 12), Scott Quinnell (Caltrans District 8), Jonathan Snyder (USFWS), Jeff Brandt (CDFG), Don Copeland (CDFG), Leslie MacNair (CDFG), Stephanie Hall (United States Army Corps of Engineers [USACE]), Adam Fischer (RWQCB), Marzieh Ghandehari (Kimley-Horn and Associates, Inc.), and Chris Blandford (Chambers Group, Inc). The content of the e-mail discussion focused on the mitigation requirements for impacts to jurisdictional areas. Optional off-site mitigation programs, including Santa Ana Watershed Association (SAWA), Riverside County Parks Department, and Orange County Water District's (OCWD) Prado Basin, were identified for discussion. The question of mitigating for temporary impacts on site or off site at a 1:1 mitigation ratio was raised for discussion. The recommended mitigation ratio of 5:1 for permanent impacts to Fresno Canyon/Wardlow Wash and federal wetlands was confirmed. The e-mail recommended a mitigation ratio of 3:1 for permanent impacts to CDFG and USACE jurisdictional outside of the Fresno Canyon/Wardlow Wash and federal wetland areas.
- A teleconference occurred on April 3, 2006, between Karen Drewe (Caltrans District 12) and Jonathan Snyder (USFWS). The discussion included the potential use of sound blankets during the construction phase of the project. Estimated construction costs for sound blanket implementation and possible concerns with the effectiveness of sound blankets were discussed.
- An e-mail discussion began on April 12, 2006, with an e-mail from Scott Quinnell (Caltrans District 8) to the agency team. The content of the e-mail discussion focused on confirming the previously discussed mitigation requirements for impacts to jurisdictional areas. It was proposed that temporary impacts would be mitigated 1:1 off site at one of the existing mitigation programs. In addition to off-site mitigation, native restoration would occur in areas temporarily affected. It was requested that the on-site restoration not be subject to long-term

maintenance/monitoring. Each of the agencies responded and tentatively concurred with the proposed compensatory mitigation. Also discussed was the adequacy of the OCWD mitigation program at Prado Basin to provide compensatory mitigation through wetland creation. Adam Fischer (RWQCB) responded that the proposed activities (i.e., eucalyptus removal and willow restoration) at Prado Basin did not meet the definition of wetland creation. Thus, other opportunities for wetland creation continue to be evaluated.

- An e-mail discussion between Karen Drewe (Caltrans District 12) and Jonathan Snyder (USFWS) occurred on April 13, 2006. The discussion was centered on the potential use of the Orange County Natural Communities Conservation Plan (NCCP) in-lieu mitigation fee programs. A detailed map of the NCCP area was reviewed. Jonathan Snyder (USFWS) conveyed that the in-lieu fee program could not be used for projects located within an "existing use area" as defined by the NCCP. It appeared that the project area was located within an "existing use area." Further confirmation and coordination on this topic is expected.
- A teleconference occurred on April 13, 2006, between Karen Drewe (Caltrans District 12) and Jonathan Snyder (USFWS). Mitigation ratios for the impacts to coastal sage scrub were discussed. Ratios of 3:1 for permanent impacts and 2:1 for temporary impacts were tentatively agreed upon.
- An e-mail discussion began on April 19, 2006, with an e-mail from Scott Quinnell (Caltrans District 8) to the agency team. The discussion was centered on the proposed mitigation of temporary impacts to wetlands. Instead of mitigating for temporary impacts to these wetlands off site, as previously discussed, it was proposed that these impacts would be mitigated at a 1:1 ratio on site with the addition of nonnative plant removal in the vicinity. Each of the agencies agreed with this proposal in a subsequent e-mail.
- An e-mail was received by Karen Drewe (Caltrans District 12) from Stephanie Hall (USACE) on April 25, 2006, which provided information suggesting that the project may fall under a Nationwide Permit because the anticipated permanent impacts would be less than 0.2 hectare (0.50 acre). The permit application should include (1) location of each drainage incurring impacts, (2) quantity of temporary and/or permanent impacts for each drainage, and (3) information on the receiving water of the United States to which the affected drainages are a tributary.
- Formal Section 7 Consultation with USFWS was initiated on July 10, 2007 (Appendix L). CDFG was copied on the letter in order to consult on the least Bell's vireo pursuant to 2081 and MSHCP consistency.

- A letter from SHPO dated March 8, 2001, indicated that the Alta Vista/Green River Camp site was not eligible for inclusion in the National Register (Appendix I). The site is crossed by SR-91. The north side of the site includes one concrete patio and brick fireplace. Subsurface testing on the south side of the site outside Caltrans right-of-way indicated the presence of some structural remains, primarily foundation remnants.
- State agencies were notified via the State Clearinghouse regarding the public review period and extension of the public review period. The transmittal letters from the State Clearinghouse are provided at the end of Appendix M. Refer to Section 3.2 for a discussion of the public review process.
- Additional information was provided to USFWS on October 11, 2007, as part of the Section 7 Consultation process. This letter is included in Appendix L.
- On October 29, 2007, FHWA issued a finding that the air quality conformity determination for the project is consistent with the State Implementation Plan. The FHWA letter is provided in Appendix J.
- The Jurisdictional Delineation Report and a letter request for concurrence were submitted to USACE on November 7, 2007. This letter is provided in Appendix K. Jurisdictional delineation concurrence will be obtained from USACE as part of the permitting process during final design.

3.2 Public Participation

Public circulation of the Draft Initial Study/Environmental Assessment (IS/EA) began on August 1, 2007, for a 30-day review period. The review period was extended to September 13, 2007, due to the requests from public agencies and organizations to have more time to review the environmental document.

As required by CEQA Guidelines Sections 15072 and 23 CFR Part 771.111, a public Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration (MND) and Availability of Initial Study/ Environmental Assessment (IS/EA), Notice of Public Meeting for the proposed improvements to the Riverside Freeway (State Route 91 [SR-91]) was filed with the Orange County and Riverside County Clerks and the State Clearinghouse on August 1, 2007. A 30-day public review period was specified (from August 1 to August 30, 2007). The NOI was also mailed to all of the agencies and persons that requested to be notified (refer to Chapter 5) as well as to all occupants/owners of all addresses within a 0.5-mile radius of the project area prior to the start of the public review period. Printed copies and compact disks of the Draft

IS/EA were mailed to responsible agencies and other agencies and were made available for public review at the following locations:

- California Department of Transportation (Caltrans) District 8 Office, 464 West 4th Street, San Bernardino, CA
- Caltrans District 12 Office, 3347 Michelson Drive, Irvine, CA
- Orange County Transportation Authority, 600 South Main Street, Orange, CA
- Yorba Linda Public Library, 18181 Imperial Highway, Yorba Linda, CA
- Anaheim Public Library, 500 West Broadway, Anaheim, CA
- Corona Public Library, 650 South Main Street, Corona, CA

The Draft IS/EA was also published on the OCTA Web site at: www.octa.net/sr91.

A Notice of Public Meeting was distributed on July 28, 2007, to notify the public about the August 21, 2007, public meeting and availability of the draft Environmental Document for the 30-day public comment period. The public meeting was held at the Green River Golf Club and attended by 16 members of the public. One comment was recorded by the court reporter; all other issues were raised verbally. Issues raised by the public included traffic noise, headlight glare, right-of-way acquisition, public notification process, and local access during construction and postconstruction. Representatives from Caltrans Districts 8 and 12, OCTA, State Assemblyman Todd Spitzer's office, RCTC, County of Riverside, City of Corona, and Green River Golf Club also attended the meeting.

Caltrans extended the public review period until September 13, 2007. On August 29, 2007, a notice to this effect was mailed to agencies, interested parties, and individuals who had already commented on the Draft IS/EA.

A total of 33 comment letters were received by Caltrans District 12 and OCTA. Comments were received from public agencies, organizations, and members of the public. Comments that addressed environmental issues were thoroughly responded to in this document. In some cases, minor corrections to information in the Draft IS/EA were required, or additional information was provided for clarification purposes. However, several comments did not address the adequacy or completeness of the Draft IS/EA, did not raise environmental issues, or did not request the incorporation of additional information not relevant to environmental issues. No response was provided for comments in this category.

3.2.1 Format of Responses to Comments

See Appendix M for the responses to public comments. Individual points within each comment letter are numbered along the right-hand margins of each letter. Comments not requiring any response are not numbered. The responses to each comment letter immediately follow each letter and are referenced by the index numbers in the margins.

The format of the responses below is based on a unique letter and number code for each comment. The number at the end of the code refers to a specific comment within the individual letter. Therefore, each comment has a unique code assignment. For example, F-1-1 is the first comment in letter F-1. "F" represents a federal agency, "1" refers to the first federal agency letter, and the other "1" refers to the first comment. "S" is for State agencies, "L" is for local agencies, "R" is for regional agencies, "O" is for organizations, and "P" is for public comments.

Comments that were corrections to information contained in the Draft IS/EA are summarized in Appendix M and shown with margin indicators in this FED.

3.2.2 Index of Comments Received

Table 3.1 provides an index list of the agencies, groups, and persons who commented on the Draft IS/EA prior to the close of the public comment period or immediately thereafter. Each comment letter received is indexed with a number below.

Table 3.1 Comment Letters Received During Public Comment Period

Letter	Name	Date
	Federal Agency Comments	
F-1-1	U.S. Army Corps of Engineers, Los Angeles District	August 13, 2007
F-2-1	U.S. Department of the Interior, Fish and Wildlife	September 13, 2007
	State Agency Comments	
S-1	State of California, Native American Heritage Commission	August 20, 2007
S-2	State of California, Public Utilities Commission	February 16, 2007
S-3	State of California, Department of Conservation	September 7, 2007
S-4	Department of Toxic Substances Control	September 4, 2007
S-5	State of California, Department of Fish and Game	September 12, 2007
S-6	State Department of Parks and Recreation	September 14, 2007
	Local Agency Comments	
L-1	City of Anaheim, Planning Department	September 13, 2007
L-2	City of Yorba Linda, Community Development Department	August 31, 2007
L-3	City of Chino Hills	August 29, 2007
L-4	City of Corona, Public Works Department	August 29, 2007
	Regional Agency Comments	
R-1	Riverside County Flood Control and Water Conservation	August 14, 2007
R-2	Southern California Association of Governments	August 22, 2007
R-3	Transportation Corridor Agencies	August 21, 2007
R-4	Orange County Fire Authority	August 27, 2007
R-5	County of Orange, Planning & Development Services Dept.	August 30, 2007

Letter	Name	Date
	Organization Comments	
O-1	Sierra Club, Puente-Chino Hills Task Force	August 6, 2007
O-2	Wildlife Corridor Conservation Authority	August 22, 2007
O-3	Wildlife Corridor Conservation Authority	September 13, 2007
	Public Comments	
P-1	Bob Zemel	August 21, 2007
P-2	P. Nollkamper	August 21, 2007
P-3	Kirk Ladean	August 21, 2007
P-4	Arnold Gregg	August 1, 2007
P-5	Jerry Collamer	August 16, 2007
P-6	Darius Ahrar	September 4, 2007
P-7	Brittney Bond	September 4, 2007
P-8	Tom Tietz	August 21, 2007
P-9	Rod Tawasha	August 8, 2007
P-10	Steve Peters	August 3, 2007
P-11	Robert S. Zemel	August 21, 2007
P-12	Glenda Gromer	September 13, 2007
P-13	Concerned SR-91 Traveler	August 31, 2007

Letters L-2, R-1, P-6, P-7, P-10, and P-12 do not contain any comments on the Draft IS/EA.

3.2.3 Summary of Revisions to the IS/EA Based on Comment Letters and Other Supplementary Information

Revisions to the IS/EA have been made in the following areas:

- Clarification of easements for proposed sound walls outside of Caltrans right-of-way
- Revised impacts to jurisdictional waters based on new guidance
- Revised wildlife crossings information
- Additional focused plant survey information
- Additional avoidance measure related to asbestos (H-4)
- Deletion of minimization measure CR-2 because it is not applicable
- Addition of a new avoidance measure (V-5) to include an aesthetic Design Review Team
- Clarification regarding NPDES permit compliance
- Addition of Caltrans-approved language for Climate Change
- Clarifications to air quality regulations changes
- Revisions to BIO-11 to indicate that coastal sage scrub restoration will occur in Chino Hills State Park
- A commitment to add local agencies and organizations such as the City of Chino Hills, City of Anaheim, City of Yorba Linda, City of Corona, County of Orange,

Orange County Fire Authority (OCFA), Transportation Corridor Authority (TCA), and Wildlife Corridor Conservation Authority (WCCA) to the public awareness campaign during construction of the proposed project has been added to the ECR (Appendix D)

- A clarification statement regarding the boundaries of the BSA
- Changes to the Cumulative Projects Table (Table 2.38) to include all projects listed in the Project Report
- Revisons to the CEQA Environmental Checklist to indicate which topic areas are subject to avoidance and minimization measures as opposed to mitigation measures

3.3 Native American Consultation

A consultation letter was sent to the Native American Heritage Commission on August 12, 2005. The Native American Heritage Commission responded with a letter dated August 23, 2005, which stated that a record search of the sacred land file failed to indicate the presence of Native American cultural resources in the project area. The Native American Heritage Commission recommended contacting the appropriate Native American tribes, groups, and individuals.

The following Native American Tribes, Groups, and Individuals were contacted:

- Gabrielino Band of Mission Indians August 28, 2005
- Robert Dorame, Tribal Chair, Gabrielino/Tongva August 28, 2005
- Craig Torres, Gabrielino/Tongva August 28, 2005
- Ti'at Society August 28, 2005
- Tongva Ancestral Territorial Tribal Nation August 28, 2005
- Anthony Morales, Chair, Gabrielino/Tongva Tribal Council August 28, 2005

All of the groups were contacted for follow-up information via telephone between January 10 and 18, 2006.

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Charles Baker, Associate Environmental Planner, Archaeology, Caltrans District 12

CT Bathala, Transportation Engineer (Civil) - NPDES, Caltrans District 12

Arman Behtash, Transportation Engineer (Civil) - Air Quality, Caltrans District 12

Ryan Chamberlain, Associate Environmental Planner, promoted to Branch Chief, Local Development/IGR Branch, Caltrans District 12

Wayne Chiou, Transportation Engineer (Civil) - Hazardous Materials, Caltrans District 12

Paul Cochran, Associate Environmental Planner, NPDES Unit, Caltrans District 12

Karen Drewe, Associate Environmental Planner, Natural Science (Biology), Caltrans District 12
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My-Linh Duvan, Transportation Engineer (Civil) - Hydrology, Caltrans District 12
Chris Flynn, Senior Environmental Planner, Caltrans District 12
Shay Lynn M. Harrison, Associate Environmental Planner, Caltrans District 11, as of May 2007
Kedest Ketsela, Associate Environmental Planner, Natural Sciences (Biology), Caltrans District 12
Haitao Liu, Transportation Engineer (Civil) - Geotechnical, Caltrans District 12
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Scott Rothenberg, Acting Associate Environmental Planner Water Quality, Caltrans District 12
Sylvia Vega, Office Chief – Environmental Planning, Caltrans District 12
Tara Ziaeian, Transportation Engineer (Civil) - Traffic Noise, Caltrans District 12
Scott Barker, Environmental Planner, Kimley-Horn and Associates
Robert Forrest, Environmental Planner, Kimley-Horn and Associates
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Grady Gordon, Environmental Analyst, Kimley-Horn and Associates
Danielle Stearns, Environmental Task Manager, Kimley-Horn and Associates
Mike Amling, Principal in Charge, LSA Associates, Inc.
Romi Archer, Senior Environmental Planner, LSA Associates, Inc.
Elizabeth Delk, Biologist, LSA Associates, Inc.
Gary Dow, Graphics, LSA Associates, Inc.
Christine Huard-Spencer, Senior Environmental Planner, LSA Associates, Inc.
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Jan Stanakis, Editor, LSA Associates, Inc.
Lisa Williams, Senior Environmental Specialist, LSA Associates, Inc.
Nicole West, Environmental Engineer, LSA Associates, Inc.

Chapter 5 Distribution List

Federal Agencies

United States Forest Service
Cleveland National Forest
10845 Rancho Bernardo Road, Suite 200
San Diego, CA 92127 **CD**

United States Forest Service
Trabuco Ranger District
1147 East Sixth Street
Corona, CA 92879 **CD**

United States Fish and Wildlife Service
Pacific Regional Office
911 NE 11th Avenue
Portland, OR 97232 **CD**

Federal Emergency Management Agency
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607 **CD**

United States Fish & Wildlife Services
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, CA 92008 **CD**

Department of Housing and Urban Development
Santa Ana Field Office
Santa Ana Federal Building, Room 7015
34 Civic Center Plaza
Santa Ana, CA 92701 **CD**

United States Army Corps of Engineers
Mark Durham
911 Wilshire Boulevard, 11th Floor
Los Angeles, CA 90017 **CD**

United States Department of Agriculture
Natural Resources Conservation
Riverside Field Office
4500 Glenwood Drive
Riverside, CA 92501 **CD**

United States Army Corps of Engineers
Los Angeles District-Regulatory Branch
Attn: Crystal L. Marquez
911 Wilshire Boulevard
Los Angeles, CA 90017 **CD**

United States Post Office Growth Management Coordinator
Attn: Kristi Barrios
San Bernardino MSC Mail Facility
San Bernardino, CA 92403-9334 **CD**

State Agencies

Air Resources Board
P.O. Box 2815
Sacramento, CA 95812 **SC**

Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296 **SC**

Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296 **SC**

Resources Agency
1416 9th Street, Suite 1311
Sacramento, CA 95814 **SC**

California Highway Patrol
Community Outreach and Marketing Section
P. O. Box 942898
Sacramento, CA 94298 **SC**

California Highway Patrol
Riverside District Office (840)
8118 Lincoln Avenue
Riverside, CA 92504 **CD**

California Highway Patrol
Santa Ana District Office (675)
2031 East Santa Clara Avenue
Santa Ana, CA 92705 **CD**

Department of Health Services
Legislative & Governmental Affairs
MS 0006
P.O. Box 997413
Sacramento, CA 95899 **SC**

Department of Fish and Game
South Coast Region 5
4949 Viewridge Avenue
San Diego, CA 92123 **CD**

Department of Parks and Recreation
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571 **CD**

Department of Forestry and Fire Protection
Southern Region 111
2524 Mullberry Street
Riverside, CA 92501 **CD**

Department of Forestry and Fire Protection
Headquarters
P.O. Box 944246
Sacramento, CA 94244 **SC**

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630-4752 **SC**

Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236 **SC**

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814 **SC**

California Geologic Survey
Headquarters/Office of the State Geologist
801 K Street, MS 12-30
Sacramento, CA 95814 **SC**

State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 222
Sacramento, CA 95814 **CD**
(15)

Department of Forestry
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P.O. Box 944246
Sacramento, CA 94244 **SC**

State Water Resource Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801 **SC**

Office of Land Conservation
Department of Conservation
801 K Street, MS 13-70
Sacramento, CA 95814 **SC**

Environmental Section
Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102 **SC**

Department of Housing & Community
Development, Attn: Mary Ann Karrer
1800 Third Street, Room 430
P.O. Box 952053
Sacramento, CA 95814 **SC**

Native American Heritage Commission
Carol Gaubaty
915 Capitol Mall, Room 228
Sacramento, CA 95814 **SC**

California Department of Fish and Game
Michael Giusti
330 Golden Shore Drive, Suite 50
Long Beach, CA 90802 **CD**

California Department of Toxic Substance
Control
Attn: Ken Chiang
1011 North Grandview Avenue
Glendale, CA 91201 **CD**

State of California
Department of Fish and Game
1416 Ninth Street
Sacramento, CA 95814 **SC**

California Energy Commission
Sheri McFarland
1516 Ninth Street, Room 200
Sacramento, CA 95814 **SC**

Regional/Local Agencies

County of Orange
Planning Department
300 North Flower, Room 122
Santa Ana, CA 92705 **CD**

County of Riverside
Riverside County Administration Center
4080 Lemon Street
Riverside, CA 92502-1629 **CD**

Riverside County Agency Formation
Commission (LAFCO)
George Spiliotis
3850 Vine Street, Suite 110
Riverside, CA 92507 **NOI**

Orange County Fire Authority
Michael S. Rohde (Fire Protection)
Battalion Chief, Advance Planning
180 South Water Street
Orange, CA 92866 **NOI**

Santa Ana Regional Water Quality Control
Board
Region 8
3737 Main Street, Suite 500
Riverside, CA 92501-3339 **CD**

City of Anaheim
Planning Department
City Hall East
200 South Anaheim Boulevard
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City of Yorba Linda
Planning Department
P.O. Box 87014
Yorba Linda, CA 92885 **CD**

City of Corona
Planning Department
400 South Vicentia Avenue
Corona, CA 92882 **CD**

Riverside County EDA
Robin Zimpfer, Director
1151 Spruce Street
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Riverside County Transportation Commission
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Riverside, CA 92502 **NOI**

County of Orange Public Facilities & Resources Department
R.S. Bavan, Manager
P.O. Box 4048
300 North Flower Street
Santa Ana, CA 92702 **CD**

Orange County Flood Control Division
H.G. Osborne Building
Flood Control Division, 7th Floor
300 North Flower Street
Santa Ana, CA 92702
Attn.: Mary Winestock **CD**

Corona Norco Unified School Dist.
Ted Rozzi – Facilities
2820 Clark Avenue
Norco, CA 91760 **CD**

City of Corona
Transportation Department
Crystal Nguyen
815 W. Sixth St.
Corona, CA 92882 **CD**

City of Chino Hills
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2001 Grand Avenue
Chino, CA 91709 **CD**

Riverside Transit Agency
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Transportation Corridor Agencies
125 Pacifica, Suite 100
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City of Yorba Linda
Community Development
4845 Casa Loma Avenue
Yorba Linda, CA 92885 **CD**

San Bernardino County Museum
Development Monitoring Commission
Attn: Kathleen Springer
2024 Orange Tree Lane
Riverside, CA 92374 **NOI**

Chino Hills State Park
1879 Jackson Street
Riverside, CA 92504 **CD**

Riverside County Clerk & Recorder
2724 Gateway Drive
Riverside, CA 92502 **NOI**

IGR/CEQA Development Review
Linda Grimes
464 West Fourth Street, 6th Floor, MS726
San Bernardino, CA 92401 **NOI**

County of Orange Environmental Planning Services Division
Tim Neely, Manager
P.O. Box 4048
Santa Ana, CA 92702-4048 **NOI**

City of Chino
13220 Central Avenue
Chino, CA 91710 **CD**

Green River Golf Club
5215 Green River Drive
Corona, CA 92880-9404 **CD**

Santa Ana Watershed
Project Authority
11615 Sterling Avenue
Riverside, CA 92503 **CD**

Riverside County Regional Park & Open Space District
Brian Loew, AICP
4600 Crestmore Road
Riverside, CA 92509 **CD**

Riverside County Transportation Department
Attn: Juan Perez
4080 Lemon Street
Riverside, CA 92505 **CD**

Riverside County Planning Department
Kathleen Browne
4080 Lemon Street, Ninth Floor
Riverside, CA 92502 **CD**

City of Norco
Planning Department
2870 Clark Road
Norco, CA 91760 **CD**

Councils of Government (Areawide Clearinghouse)

Orange County Council of Governments
600 West Santa Ana Boulevard, Suite 214
Santa Ana, CA 92701 **CD**

Southern California Association of Governments
818 West Seventh Street, 12th Floor (Main Office)
Los Angeles, CA 90017 **CD**

Southern California Association of Governments
Inland Office
3600 Lime Street, Suite 216
Riverside, CA 92501 **CD**

Western Riverside Council of Governments
4080 Lemon Street, 3rd Floor, MS 1032
Riverside, CA 92501 **CD**

San Bernardino Associated Governments
1170 West 3rd Street, 2nd Floor
San Bernardino, CA 92410 **CD**

State Legislators

33rd Senate District
State of California
Hon. Dick Ackerman, Member
State Capitol, Room 305
Sacramento, CA 95814 **NOI**

71st Assembly District
State of California
Hon. Todd Spitzer
State Capitol, Room 2111
Sacramento, CA 95814 **NOI**

37th Senate District
State of California
Hon. Jim Battin, Member
Capitol Office
State Capitol, Room 3067
Sacramento, CA 95814 **NOI**

33rd Senate District
State of California
Tustin Office
17821 East 17th Street, Suite 180
Tustin, CA 92780 **NOI**

71st Assembly District
State of California
District Office
1940 North Tustin Street, Suite 102
Orange, CA 92865 **NOI**

37th Senate District
State of California
Palm Desert Office
73-710 Fred Waring Drive, Suite 112
Palm Desert, CA 92260 **NOI**

60th Assembly District
State of California
Hon. Bob Huff, Member
State Capitol, Room 5164
Sacramento, CA 94249 **NOI**

60th Assembly District
State of California
Diamond Bar District Office
23355 East Golden Springs Drive
Diamond Bar, CA 91765 **NOI**

Federal Legislators

United States Senate
Hon. Dianne Feinstein, Member
331 Hart Senate Office Building
Washington, DC 20510 **NOI**

44th Congressional District
United States House of Representatives
Riverside Office
3400 Central Avenue, Suite 200
Riverside, CA 92506 **NOI**

42nd Congressional District
United States House of Representatives
Mission Viejo Office
200 Civic Center
Mission Viejo, CA 92691 **NOI**

United States Senate
Hon. Barbara Boxer, Member
112 Hart Senate Office Building
Washington, DC 20510 **NOI**

United States Senate
San Diego Field Office
750 “B” Street, Suite 1030
San Diego, CA 92101 **NOI**

44th Congressional District
United States House of Representatives
Las Flores Office
26111 Antonio Parkway, Suite 300
Las Flores, CA 92688 **NOI**

44th Congressional District
United States House of Representatives
Hon. Ken Calvert, Member
2201 Rayburn HOB
Washington, DC 20515 **NOI**

United States Senate
Inland Empire Field Office
201 North E Street, Suite 210
San Bernardino, CA 92401 **NOI**

42nd Congressional District
United States House of Representatives
Hon. Gary Miller, Member
1037 Longworth HOB
Washington, DC 20515 **NOI**

42nd Congressional District
United States House of Representatives
Brea Office
1800 East Lambert Road, Suite 150
Brea, CA 92821 **NOI**

Interested Groups, Organizations, and Individuals

Geno Fiset
18136 Buena Vista
Yorba Linda, CA 92886 **NOI**

Riverside County EDA
Robin Zimpfer, Director
1151 Spruce Street
Riverside, CA 92507 **NOI**

La Jolla Band of Mission Indians
Rob Roy, Environmental Director
22000 Highway 76
Pauma Valley, CA 92061 **NOI**

Corona Public Library
650 S. Main St.
Corona, CA 92882 **CD/√**

Gabrielino/Tongva
Council/Gabrielino Tongva Nation
Sam Dunlap
501 Santa Monica Boulevard, Suite 500
Santa Monica, CA 90401 **NOI**

La Jolla Band of Mission Indians
Rob Roy, Environmental Director
22000 Highway 76
Pauma Valley, CA 92061 **NOI**

San Fernando Band of Cahuilla Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall, CA 91322 **NOI**

Pauma & Yuima
Christobal C. Devers, Chairperson
P.O. Box 369
Pauma Valley, CA 92061 **NOI**

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 2183
Temecula, CA 92593 **NOI**

Ramona Band of Mission Indians
Anthony Largo, Environmental Coordinator
P.O. Box 391372
Anza, CA 92539 **NOI**

San Manuel Band of Mission Indians
Deron Marquez, Chairperson
P.O. Box 266
Patton, CA 92369 **NOI**

Neighborhood Watch Group
Weirick Road
8145 Weirick Road
Corona, CA 92883 **NOI**

Best, Best, & Krieger
Michelle Ouellette
Mission Square Building
3750 University Avenue, #400
Riverside, CA 92501 **NOI**

James D. Rosenlieb Architects
James D. Rosenlieb
422 South Corona Mall
Corona, CA 92879 **NOI**

Rincon Band of Mission Indians
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P.O. Box 68
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Matthew Fagan Consulting Services
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Temecula, CA 92591 **NOI**

Bluestone Communities
Michael A. Kerr, President
4100 Newport Place, Suite 730
Newport Beach, CA 92660 **NOI**

AEI CASC Engineers
Chris Cummins
937 S. Via Lata, Suite 500
Colton, CA 92324 **NOI**

Pauma & Yuima
Christobal C. Devers, Chairperson
P.O. Box 369
Pauma Valley, CA 92061 **NOI**

Enviro Communications, Inc.
Robert M. Levy
149 South Barrington Avenue, Suite 160
Los Angeles, CA 90049 **NOI**

World Financial Group
Merrill Burnett
500 North State College, Suite 910
Orange, CA 92868 **NOI**

Cahuilla Band of Indians
Jerome Salgado, Sr., Tribal Chairman
P.O. Box 391760
Anza, CA 92359 **NOI**

Real Estate Consulting
Dan Kolodziejski
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Pacific Palisades, CA 90272 **NOI**

Yorba Linda Public Library
18181 Imperial Highway
Yorba Linda, CA 92886 **CD/√**

Anaheim Public Library
500 W. Broadway
Anaheim, CA 92805 **CD/√**

SPECIAL DISTRICTS/UTILITIES

Adelphia Communications
Rod Mesa (Cable Television)
3041 EAST Mira Loma Avenue
Anaheim, CA 92806 **NOI**

Yorba Linda Water District
Raymond M. Hahn, P.E.
4622 Plumosa Drive
Yorba Linda, CA 92886 **NOI**

Metropolitan Water District of Southern California
Roberta L. Soltz
P.O. Box 54153
Los Angeles, CA 90054 **NOI**

AT&T Cable Maintenance Center
17200 South Vermont Avenue, Suite 422B
Gardena, CA 90247 **NOI**

Northwest Mosquito & Vector Control
1966 Compton Avenue
Corona, CA 92879 **NOI**

Burlington Northern Santa Fe Railway Company
Government Affairs
One World Trade Center, Ste. 1680
Long Beach, CA 90831 **CD**

Pacific Bell
David Narong (Telephone)
Planner
3939 East Coronado Street, 2nd Floor
Anaheim, CA 92803 **NOI**

Southern California Edison
John Blokzyl
Environmental Affairs
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Santa Ana, CA 92705 **NOI**

Orange County Sanitation District
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Engineer, Planning Department
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Fountain Valley, CA 92708 **CD**

Western Municipal Water District
P.O. Box 5286
Riverside, CA 92517 **NOI**

AT&SF Railway Company
Division Manager
740 East Carnegie Drive
San Bernardino, CA 92408 **CD**

AT&T Broadband
Ken Hansen
2320 Pomona Rincon Road
Corona, CA 92880 **NOI**

SBC Pacific Bell
Leslie Woolslair
Right-of-Way Agent
1265 Van Buren Street, Room 180
Anaheim, CA 92807 **NOI**

The Gas Company
Robert Warth
Technical Supervisor
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Anaheim, CA 92806 **NOI**

Riverside County Flood Control & Water Conservation Dist.
1995 Market
Riverside, CA 92501-1770 **NOI**

SCAQMD
Steve Smith
Planning & Rural Development
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Diamond Bar, CA 91765 **CD**

Waste Management
800 Temescal
Corona, CA 92879 **NOI**

The Gas Company
Jim King
3460 Orange Street
Riverside, CA 92501 **NOI**

Chapter 6 References

In addition to the technical studies prepared for the proposed project, the following documents and resources were used in the preparation of the environmental document:

California Department of Transportation
1997 Community Impact Assessment, Caltrans Environmental Handbook Volume 4. June

California EPA
1988 California Clean Air Act

California Regional Water Quality Control Board,
1995 Santa Ana River Basin Water Quality Control Plan (Basin Plan).

City of Anaheim
2004 *General Plan Land Use Element.*
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City of Corona
1986 *General Plan Land Use Element.*
2005 Personal communication, Planning Department. October 19.

City of Yorba Linda
1999 *General Plan Land Use Element.*

County of Orange
2000 *General Plan Land Use Element.*
2005 Personal communication, Planning Department. October 18.

County of Riverside
2003 *General Plan Land Use Element.*

Federal Highway Administration
1981 *Visual Impact Assessment for Highway Projects*. March.

Hendrix, Michael and Wilson, Cori. *Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), p.2.

Kimley-Horn and Associates.
2007 *Draft Project Report*

Los Angeles Times
2004 *O.C. Buys Golf Club in Flood Effort*. March.

Riverside County Integrated Project.
2003. *Western Riverside County Multiple Species Habitat Conservation Plan.*

South Coast Air Quality Management District
2005. *Rule 403: Fugitive Dust Control*. June 3.

Southern California Association of Governments
2004 www.scag.ca.gov/forecast/index.htm

State of California, Department of Transportation
1998 *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects.* October.
2006 Standard Environmental Reference Web site.

United States. Department of Commerce, Bureau of the Census
2000 *Decennial Census of Population and Housing.*

United States Environmental Protection Agency.
1971 *Typical Construction Equipment Noise Levels without Mitigation.*
1972 *Section 401 Clean Water Act.*
1973 *Clean Air Act.*

Western Regional Climate Center, www.wrcc.dri.edu.

Appendix A CEQA Environmental Checklist Form

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Supporting documentation of all CEQA checklist determinations is provided in Chapter 2 of this Environmental Assessment. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?		x		
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				x
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		x		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			x	
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				x

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				x
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?				x
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				x
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				x
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)?				x
d) Expose sensitive receptors to substantial pollutant concentrations?			x	
e) Create objectionable odors affecting a substantial number of people?			x	
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or United States Fish and Wildlife Service (USFWS)?		x		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS?		x		

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		x		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		x		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				x
f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP?				x
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?				x
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?				x
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		x		
d) Disturb any human remains, including those interred outside of formal cemeteries?			x	
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			x	
ii) Strong seismic ground shaking?			x	

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) Seismic-related ground failure, including liquefaction?			x	
iv) Landslides?			x	
b) Result in substantial soil erosion or the loss of topsoil?			x	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			x	
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?				x
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				x
VII. 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?			x	
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?			x	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				x
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?			x	
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?				x

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				x
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			x	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				x
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?			x	
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)?				x
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?			x	
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?			x	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			x	
f) Otherwise substantially degrade water quality?			x	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				x

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			x	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			x	
j) Inundation by seiche, tsunami, or mudflow?			x	
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				x
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?				x
c) Conflict with any applicable HCP or NCCP?				x
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				x
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?				x
XI. NOISE –				
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			x	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			x	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			x	

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			x	
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?				x
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				x
XII. 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)?				x
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				x
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				x
XIII. 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?			x	
Police protection?			x	
Schools?			x	
Parks?				x
Other public facilities?				x

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. 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?				x
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?				x
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) 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)?				x
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				x
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				x
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				x
e) Result in inadequate emergency access?			x	
f) Result in inadequate parking capacity?				x
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				x
XVI. UTILITIES AND SERVICE SYSTEMS –				
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				x
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?				x

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			x	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				x
e) Result in a determination by the wastewater treatment provider who 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?				x
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			x	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			x	
XVII. MANDATORY FINDINGS OF SIGNIFICANCE –				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		x		
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)?			x	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			x	

I. AESTHETICS

The potential for the proposed project to result in adverse impacts related to aesthetics, light, and glare was assessed in the *Scenic Resource Evaluation/Visual Impact Assessment* (VIA, Tatsumi and Partners, Inc., April 2007). The discussion below is based on the findings of the VIA and the summary discussions of the VIA in Section 2.7, Visual and Aesthetics, in the Initial Study/Environmental Assessment (IS/EA).

a) Less Than Significant Impact with Mitigation Incorporated. Temporary visual impacts would occur during construction of the proposed project, and those impacts would cease following completion of the project. Permanent visual impacts would potentially occur from retaining walls and sound walls that are proposed as part of the project. The shapes, textures, and colors of the sound and retaining walls would be harmonious with the existing natural formations along the project segment of SR-91. Sound walls proposed adjacent to residential uses would be designed to use a clear product to maintain current views from those residences. Therefore, Mitigation Measures V-1, V-2, V-3, V-4, and V-5, provided in Section 2.7, would reduce the potential adverse visual impacts of the proposed SR-91 project to below a level of significance.

b) No Impact. There are no scenic resources in the project area and SR-91 within the project limits is not designated as a state scenic highway.

c) Less Than Significant Impact with Mitigation Incorporated. Refer to response I.a above. The project is a widening of an existing freeway.

d) Less Than Significant Impact. SR-91 is an existing freeway that includes existing lighting throughout the project area. The proposed project would not add new lighting, although some lighting in the project limits may be modified or relocated. All project lighting would be shielded and focused within the SR-91 right-of-way. The eastbound widening would move a lane closer to an existing access road. For this reason, the access road would also be shifted to the south, to accommodate the new lane. Headlight glare in this area is expected to remain the same as existing. Therefore, no adverse light and glare impacts are anticipated to occur as a result of the proposed project. No mitigation is required.

II. AGRICULTURAL RESOURCES

The potential for the proposed project to result in adverse impacts related to agricultural resources was assessed based on review of the General Plans for the

Cities of Anaheim, Corona, and Yorba Linda, and the Counties of Orange and Riverside. The discussion below is based on the review of the General Plans and on the discussion in Section 2.3, Farmlands and Timberlands, in the IS/EA.

a), b), and c) No Impact. There are no farmlands or agricultural resources within or immediately adjacent to the disturbance limits for the proposed project. Areas adjacent to SR-91 are not zoned for agricultural uses, and there are no Williamson Act contracts in effect adjacent to the project segment of SR-91. The project proposes improvements to the existing SR-91 transportation corridor. Therefore, the proposed project would not result in adverse impacts related to the direct or indirect conversion of farmlands to nonagricultural uses or conflicts with agricultural land use designations or Williamson Act contracts. No mitigation is necessary.

III. AIR QUALITY

The potential for the proposed project to result in adverse impacts related to air quality was assessed in the *Air Quality Assessment for Eastbound SR-91 Lane Addition between SR-241 and SR-71* (Mestre Greve Associates, and LSA Associates, Inc., June 2007). The discussions below are based on the findings of that analysis and the summary discussions of that analysis in Section 2.14, Air Quality, in the IS/EA.

a) No Impact. As discussed in Section 2.14 in the IS/EA, the proposed project would not conflict with or obstruct implementation of any applicable air quality plan. No mitigation is necessary.

b) No Impact. The project segment of SR-91 is in a nonattainment area for the national ambient air quality standards for particulate matter 2.5 and 10 microns or less in diameter ($PM_{2.5}$ and PM_{10}), and ozone (O_3) for eight hours of exposure. As discussed in detail in Section 2.14 in the IS/EA, no adverse impacts related to the ambient air quality standards are anticipated for O_3, $PM_{2.5}$, or PM_{10} as a result of the proposed project. No mitigation is necessary.

c) No Impact. The project segment of SR-91 is in a federal nonattainment area. However, as discussed in detail in Section 2.14 in the IS/EA, the proposed project would not result in increases in criteria pollutants. No mitigation is necessary.

d) Less Than Significant Impact. Construction of the proposed project has the potential to result in temporary, short-term construction-related increases in pollutant concentrations, specifically fugitive dust associated with excavation and grading. Implementation of the standard South Coast Air Quality Management District

(SCAQMD) Rule 403, Caltrans standard conditions, and Measures AQ-1 and AQ-2, provided in Section 2.14 in the IS/EA, would reduce those short-term air quality impacts during construction of the proposed project to below a level of significance. As discussed in Section 2.14, the proposed project is expected to reduce mobile source air toxics emissions, and will not expose sensitive receptors to substantial particulate matter or CO concentrations. No mitigation is required.

e) Less Than Significant Impact. Construction of the proposed project may result in temporary, short-term construction-related increases in objectionable odors in the immediate vicinity of the project construction areas. Implementation of the standard SCAQMD and Caltrans conditions, provided in Section 2.14 in the IS/EA, would reduce this short term impact during construction of the proposed project to below a level of significance. No further mitigation is required.

IV. BIOLOGICAL RESOURCES

The potential for the proposed project to result in adverse impacts related to biological resources was assessed in the *Natural Environmental Study* (NES) (Chambers Group, Inc. and LSA Associates, Inc. January 2007), *Supplemental Natural Environmental Study* (LSA Associates, Inc (November 2007), *Biological Assessment/Evaluation* (BA) (LSA Associates, Inc June 2007), and *Jurisdictional Delineation Report* (LSA Associates, Inc. October 2007). The discussions below are based on the findings of these reports and the summary discussion in Section 2.16 through 2.21, Biological Environment, in the IS/EA.

a) Less Than Significant Impact with Mitigation Incorporated. As discussed in detail in Section 2.18, no adverse impacts to sensitive plant species are expected at this time due to the negative results of focused surveys and the low potential for occurrence of other special status plant species onsite. As discussed in Section 2.19, construction noise and vibration could temporarily disturb bats and impede access to roost sites in the crevices of bridges, culverts, and overhead structures. The proposed project would not impact the bat's long-term use of the structures.

The proposed project would result in permanent and temporary impacts to least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher habitat. Compensatory mitigation would be implemented. There is also a potential for indirect impacts to the Santa Ana sucker. Mitigation Measures WQ-1, WQ-2, WQ-3, and BIO-1 through BIO-13 and BIO-19 through BIO-26 as well as the Biological Opinion

(BO) measures listed in the Environmental Commitment Record (ECR, Appendix D) would reduce impacts to sensitive species to below a level of significance.

b) Less Than Significant Impact with Mitigation Incorporated. As discussed in Section 2.16, the proposed project would permanently and temporarily impact riparian communities, including Cottonwood-Willow Riparian Woodland, Sycamore Riparian Woodland, and Mulefat Scrub. In addition, the proposed project would also potentially remove coast live oak trees. Compensatory mitigation would be implemented. Mitigation Measures BIO-1 through BIO-13, provided in Section 2.16, would reduce impacts to riparian habitat to below a level of significance.

c) Less Than Significant Impact with Mitigation Incorporated. As discussed in Section 2.17, the proposed project would impact CDFG and USACE jurisdictional areas. Compensatory mitigation would be implemented. Mitigation Measures BIO-14, BIO-15, BIO-16, and BIO-17, provided in Section 2.16, would reduce impacts to jurisdictional waters to below a level of significance.

d) Less Than Significant Impact with Mitigation Incorporated. The Migratory Bird Treaty Act and the California Fish and Game Code prohibit the destruction of active bird nests. Alternative 2 has the potential to result in adverse impacts to active nests in trees to be removed to accommodate the project. Therefore, surveys would be conducted to locate and avoid any active nest prior to construction or vegetation removal would be performed outside the February 15 to August 31 breeding season. As described in Mitigation Measure BIO-21, potential short term adverse impacts to nesting birds during construction of Alternative 2 would be avoided by nest avoidance or vegetation removal outside the breeding season.

Construction activities in the vicinity of Fresno Canyon and Coal Canyon have the potential to act as barriers to wildlife movement and restrict wildlife use of these corridors. Temporary indirect impacts on wildlife associated with the proposed project may include increased litter, light, noise, dust, increased human presence, and vehicle emissions and byproducts. Mitigation Measures BIO-1 through BIO-13, provided in Section 2.16, as well as the BO Measures listed in the ECR, provide protection for wildlife corridors and environmentally sensitive areas during construction activities associated with the proposed project via monitoring by a qualified biologist. Compliance with these measures would reduce potential temporary wildlife corridor impacts to a less than significant level.

Long-term impacts include reduction in the size of the culverts that are used as wildlife crossings; however, these reductions would be minimal and that wildlife would have adequate openings to cross under the freeway.

e) No Impact. The construction of Alternative 2 would result in the removal of mature trees within the project disturbance limits. Trees removed by the construction of Alternative 2 would be replaced in accordance with Caltrans policies on tree replacement and no mitigation is required.

f) No Impact. The Riverside County MSHCP is applicable to the portion of this project within Riverside County. Temporary and permanent impacts to sensitive habitats would be mitigated through implementation of compensatory mitigation consistent with USFWS, USACE, and CDFG Requirements. An MSHCP consistency finding from CDFG is in progress. Therefore, the project is consistent with the adopted MSHCP.

V. CULTURAL RESOURCES

The potential for the proposed project to result in adverse impacts related to cultural resources was assessed in the *Historic Property Survey Report (HPSR)/Archaeological Survey Report (ASR)* (Chambers Group, Inc., March 2006) and the *Paleontological Identification and Evaluation Report* (LSA Associates, Inc., June 2007). The discussions below are based on the findings of the HPSR/ASR, the *Paleontological Identification and Evaluation Report,* and the summary discussions in Sections 2.8, Cultural Resources, and 2.12, Paleontological Resources, in the IS/EA.

a) No Impact. As discussed in detail in Section 2.8, the proposed project will not result in adverse changes in the significance of any historical resources as defined under CEQA. No mitigation is required.

b) No Impact. As discussed in Section 2.8, the proposed project will not result in impacts to previously documented archaeological resources. No mitigation is required.

c) Less Than Significant Impact with Mitigation Incorporated. As discussed in detail in Section 2.12, the paleontological formations within the project area have a high potential for yielding significant fossils; therefore, adverse impacts to paleontological resources could occur during ground-disturbing activities. Mitigation Measures P-1 and P-2 require implementation of a mitigation plan and monitoring

that would reduce the impacts to paleontological resources to less than significant levels.

d) Less Than Significant Impact. The project limits have been previously disturbed, and there are no documented human burials within the project limits. Therefore, it is unlikely that the proposed project would result in adverse impacts related to the disturbance of human remains. However, in the event that human remains are discovered during construction of the proposed project, adherence to Caltrans Standard Special Provisions (SSPs) as detailed in Measure CR-1 would avoid impacts to cultural resources.

VI. GEOLOGY AND SOILS

The potential for the proposed project to result in adverse impacts related to geology and soils was assessed in detail in the *Preliminary Geotechnical Information Report* (Kleinfelder, Inc., April 2007). The discussions below are based on the findings of the *Preliminary Geotechnical Information Report* and the summary discussions in Section 2.11, Geology, Soils, Seismic, and Topography in the IS/EA.

a) i) Less Than Significant Impact. As described in Section 2.11, the project segment of SR-91 is not in an Alquist-Priolo Earthquake Fault Zone. However, the SR-91 alignment between SR-241 and SR-71 is in proximity to several well-known active to potentially active fault zones and is subject to hazards from moderate to large earthquakes. The Whittier-Elsinore Fault traverses the project area near the county boundary, and the potential for a major earthquake to occur during the life of the project (within 50 years) on this fault is moderate to high. If a magnitude 7.5 earthquake were to occur on this fault zone, the maximum displacement at ground surface at the SR-91 alignment could be as great as 1.0 m (3.3 ft). However, SR-91 is an existing road, and the risk of earthquake occurrence is the same with or without the proposed project. Measures GS-1 through GS-7, provided in Section 2.11, would minimize impacts associated with earthquakes to less than significant levels.

a) ii) Less Than Significan Impact. As described in Section 2.11, the project segment of SR-91 is in a seismically active region and can be expected to be subjected to ground shaking during a seismic event. However, SR-91 is an existing road, and the risk of seismic shaking is the same with or without the proposed project. Measures GS-1 through GS-7, provided in Section 2.11, would minimize impacts associated with seismic shaking.

a) iii) Less Than Significant Impact. Based on the *Preliminary Foundation Reports* and as described in Section 2.11, liquefaction-induced ground settlement of up to 50 millimeters (mm) (2 inches [in]) may occur in the project area. Measures GS-1 through GS-7, provided in Section 2.11, would minimize impacts associated with liquefaction.

a) iv) Less Than Significant Impact. As discussed in Section 2.11, a large landslide occurred along the south side of the Santa Ana River near the Green River Golf Club. The limit of the landslide straddles the Orange County/Riverside County boundary and extends along SR-91 approximately 902 m (2,959 ft), from 320 m (1,050 ft) west of the county line to 582 m (1,910 ft) east of the county line. Many subsequent landslides in the area are also present along the south side of the project alignment and are superimposed on the earlier Mindeman landslide. Because of local areas of slope instability, there may be an impact from the widening of SR-91 to the south, which would encroach on these existing unstable slopes. A Geotechnical Design Report to address these issues will be prepared during final design. Measures GS-1 through GS-7, provided in Section 2.11, would minimize project impacts related to localized landslides.

b) Less Than Significant Impact. The proposed disturbance limits for the SR-91 lane addition project include paved and landscaped areas, many of which are on artificial or manmade fill. Therefore, it is possible that erosion could occur during construction and/or operation of the proposed project. As discussed in detail in Section 2.14, Air Quality, in the IS/EA, the standard SCAQMD and Caltrans dust control measures would also substantially reduce the potential for the project construction to result in erosion. No further mitigation is required.

c) Less Than Significant Impact. Refer to responses VI. a.i, a.ii, a.iii, and a.iv, above.

d) No Impact. Near-surface soils within the anticipated disturbance limits for the proposed project appear to be artificial fill, consisting generally of gravelly sand and sand. Compliance with local, State, and federal laws, including Caltrans regulations regarding soils, would prevent adverse impacts related to expansive soils under the proposed project. No further mitigation is required.

e) No Impact. No septic or alternative waste treatment systems are proposed as part of the SR-91 lane addition project. No mitigation is required.

VII. HAZARDS AND HAZARDOUS MATERIALS

The potential for the proposed project to result in adverse impacts related to hazards and hazardous materials was assessed in the *Initial Site Assessment* (Kleinfelder, Inc., April 2007), the *Aerially Deposited Lead Study* (Kleinfelder, Inc., April 2007), and the Asbestos Survey Report (Kleinfelder, October 2007). The discussion below is based on the findings of these technical reports, and the summary discussion of these reports in Section 2.13, Hazardous Materials and Hazardous Waste, in the IS/EA.

a) Less Than Significant Impact. As discussed in detail in Section 2.13, during project construction, there is the potential to encounter hazardous materials in the soils, traffic-striping materials, transformers, and existing road structures. If hazardous substances are encountered during construction, the contractor would be required to follow the Caltrans Construction Hazardous Waste Contingency Plan. Hazardous waste would be transported to an approved disposal facility. In addition, routine hazardous materials, such as paint, solvents, and fuel would be used, handled, stored, disposed of, and transported during construction of the proposed project in accordance with applicable local, State, and federal regulations. Therefore, potential impacts are less than significant and no mitigation is required.

b) Less Than Significant Impact. The proposed project would not create a significant hazard to the public or the environment through any reasonably foreseeable upset or accident conditions involving the release of hazardous materials. Refer also to response VII.a, above. No further mitigation is required.

c) No Impact. There are no existing schools within 0.4 km (0.25 mile) of the project segment of SR-91. In addition, the project does not involve the release of hazardous emissions or the handling of acutely hazardous materials. Therefore, the proposed project would not result in adverse impacts to schools related to hazardous materials. No mitigation is required.

d) Less Than Significant Impact. As discussed in detail in Section 2.13, a list of hazardous materials sites were obtained through a regulatory agency records search. Although there are several hazardous waste sites in the vicinity of the project site, the proposed project is not located on a hazardous material site. Therefore, impacts related to hazardous materials sites is less than significant.

e) and f) No Impact. The Safety Elements of the General Plans for the Cities of Anaheim, Corona, and Yorba Linda and the Counties of Orange and Riverside were reviewed to determine the locations of the nearest airports. The project segment of

SR-91 is not within 3.2 km (2 mi) of a public airport, public use airport, or private airstrip. Therefore, the proposed project would not result in a safety hazard related to airports. No mitigation is required.

g) Less Than Significant Impact. As discussed in detail in Section 2.13, during construction of the proposed project, traffic at some intersections would be subject to temporary detours and/or increased travel times, which may result in a temporary increase in emergency response times in the project area. Impacts to emergency response would be less than significant with implementation of a Transportation Management Plan (TMP), as described in Minimization Measure T-1, provided in Section 2.6, Traffic and Transportation, in the IS/EA.

h) No Impact. The project segment of SR-91 is in an urbanized area surrounded by existing commercial, residential, industrial, and open space uses. As documented in the Riverside County and Orange County General Plan Public Safety Elements, there are moderate to high fire hazard areas in the vicinity of the project segment of SR-91, primarily in the open space areas. However, SR-91 is an existing freeway, and the proposed lane addition would not expose people or structures to any additional risk of loss, injury, or death compared with existing conditions. The proposed project does not propose any residences within or adjacent to wildlands. Therefore, the proposed project would not result in adverse impacts related to wildland fires. No mitigation is required.

VIII. HYDROLOGY AND WATER QUALITY

The potential for the proposed project to result in adverse impacts related to hydrology and water quality was assessed in the *Summary of Floodplain Encroachment* (LSA Associates, Inc., April 2007) and the *Water Quality Assessment Report* (LSA Associates, Inc., December 2007) and is summarized in Sections 2.9, Hydrology and Floodplains, and 2.10, Water Quality and Storm Water Runoff, in the IS/EA.

a) Less Than Significant Impact. As discussed in detail in Section 2.10, during construction there is the potential for soil erosion and discharge of pollutants into receiving waters. Adding a lane to SR-91 would increase impervious surfaces and may result in greater contributions of typical road pollutants. As specified in Avoidance Measures WQ-1 and WQ-2, compliance with Caltrans National Pollution Discharge Elimination System permits for construction and operation would minimize potential water quality impacts associated with the proposed SR-91 project and no mitigation is required.

b) No Impact. Groundwater elevations in the project area range from 3.7 m (12.1 ft) to more than 20 m (65.6 ft) below ground surface (bgs). It is not anticipated that groundwater would be encountered at depths shallower than 6 m (20 ft) bgs in the project area. Operation of the proposed project would not use groundwater. Therefore, construction and operation of the proposed SR-91 project would not result in adverse impacts related to groundwater. No mitigation is required.

c) Less Than Significant Impact. The proposed project would not result in any modifications or encroachments into the Santa Ana River. Existing drainage facilities along and crossing the project segment of SR-91 would be modified during project construction to accommodate the additional travel lane on eastbound SR-91; however, this would not substantially alter the existing drainage patterns in the area. Therefore, the proposed project would not result in adverse impacts to drainage. No mitigation is required.

d) Less Than Significant Impact. Refer to response IX.c, above. In addition, the proposed project would increase impervious surface, which would increase the amount and rate of runoff. However, as discussed in Section 2.10, Design Pollution Prevention Best Management Practices (BMPs) would be incorporated into the proposed project to minimize impacts. Impacts would be less than significant and no mitigation is required.

e) Less Than Significant Impact. Refer to responses VIII.a and VIII.d, above.

f) Less Than Significant Impact. Refer to response VIII.a, above.

g) No Impact. The proposed project would not result in the placement of any housing in a 100-year flood hazard area. Therefore, the proposed SR-91 project would not result in adverse impacts related to the placement of housing in a 100-year flood hazard area. No mitigation is required.

h) Less Than Significant Impact. As discussed in Section 2.9, part of the SR-91 project limits are within the 100-year floodplain. However, the project does not propose the implementation of any structures that would impede or redirect flood flows. Therefore, the proposed project would not result in adverse impacts related to flood flows and floodplains. No mitigation is required.

i) Less Than Significant Impact. The project area is susceptible to flooding if the Prado Dam, located immediately upstream, should fail. However, this risk of

potential flooding associated with dam failure would be the same under the proposed project as under existing conditions related to risks associated with the failure of this dams. Therefore, the proposed project would not result in adverse impacts related to flooding risks. No mitigation is necessary.

j) Less Than Significant Impact. As discussed in Section 2.11, summarized from the *Preliminary Geotechnical Report*, in the event that a major seismic event occurs during a time when water levels are high within the Prado Basin area, there would be a possibility of a seiche occurring. This may generate energy to allow water to overtop Prado Dam and cause downstream flooding and damage. However, the likelihood of all of these circumstances to occur is small, and the potential for impacts is low. The proposed project does not increase the risk of a seiche or the number of people that could potentially be affected compared to existing conditions. The project site is a substantial distance from the Pacific Ocean and, therefore, would not be expected to be affected by a tsunami. Slope instability, in the form of landslides and mudslides, is a potential adverse impact associated with seismic shaking. Embankment fill slopes constructed for the proposed project at an inclination of 1:2 or less should have adequate stability during a major seismic event. Areas that have a greater than 1:2 slope would be protected by retaining walls. Geotechnical design features presented in Section 2.11 minimize mudflow risk. Therefore, impacts related to tsunami, seiches, or mudflows are less than significant.

IX. LAND USE AND PLANNING

The discussions below are based on the discussions in Sections 2.1, Land Use, and 2.4, Community Impacts, in the IS/EA.

a) No Impact. As discussed in Section 2.4, SR-91 is an existing freeway, and the addition of a lane would not physically divide an established community. Therefore, there are no impacts related to division of an established community. No mitigation is required.

b) No Impact. As discussed in detail in Section 2.1, the proposed project is consistent with the General Plans of the Cities of Anaheim, Corona, and Yorba Linda, and the Counties of Orange and Riverside because the proposed improvements would contribute to the goal of reducing traffic congestion. In addition, the proposed project does not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project area. Therefore, the proposed project would not result in adverse impacts related to land use planning conflicts. No mitigation is required.

c) No Impact. As discussed in Section 2.1, the proposed project is adjacent to areas within two existing Habitat Conservation Plans (HCPs): the Orange County Natural Community Conservation Plan (NCCP) and HCP and the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The proposed project is consistent with the NCCP and MSHCP. Therefore, there is not conflict with any applicable HCP or MSHCP. No mitigation is required.

X. MINERAL RESOURCES

The potential for the proposed project to result in adverse impacts related to mineral resources was assessed based on review of the General Plans for the Cities of Anaheim, Corona, and Yorba Linda. The discussion below is based on the review of these General Plans.

a), b) No Impact. As discussed in the General Plans, parts of the study area are designated as Mineral Resource Zones. The mineral deposits consist of construction aggregate deposited by the Santa Ana River. However, mineral resources within the project disturbance limits are not used for aggregate mining. Therefore, construction and operation of the proposed project would not result in adverse impacts related to the loss of mineral resources. No mitigation is required.

XI. NOISE

The potential for the proposed project to result in adverse noise impacts was assessed in the *Traffic Noise Impact Technical Report* (Wieland Associates, Inc. and LSA Associates, Inc., May 2007). The discussion below is based on the findings of the *Traffic Noise Impact Technical Report* and the summary discussion of the noise analysis in Section 2.15, Noise, in the IS/EA.

a) Less Than Significant Impact. Noise levels during construction of the SR-91 lane addition project may impact sensitive receptors. Implementation of Caltrans Standard Specifications, provided in Measure N-2 in Section 2.15, would maintain these impacts at less than significant levels during construction. As discussed in Section 2.15, Caltrans and FHWA protocol requires noise abatement consideration for sensitive receptors that are exposed to levels that approach or exceed the noise abatement criteria. Sound walls have been analyzed and will be implemented subject to Caltrans requirements as discussed in Measure N-1. With implementation of sound walls, noise levels would be reduced to below existing noise levels.

b) Less Than Significant Impact. The project area is not adjacent to occupied areas and pile driving would be limited. Therefore, the proposed project would not

expose persons to or result in the generation of excessive groundborne vibration or groundborne noise levels and no mitigation is required.

c) Less Than Significant Impact. In the future with project condition (2030), the noise levels at sensitive receptors would not change or would increase by 1 dBA. Because the human ear cannot detect increases in noise levels less than 3 dBA, a 1 dBA increase is not considered significant. Sound walls have been analyzed and will be implemented subject to Caltrans requirements as discussed in Measure N-1. With implementation of sound walls, noise levels would be reduced to below existing noise levels.

d) Less Than Significant Impact. Refer to responses XI.a and XI.c, above.

e) No Impact. The proposed project is not located within 3.2 km (2 mi) of a public airport.

f) No Impact. The proposed project is not located within 3.2 km (2 mi) of a private airport.

XII. POPULATION AND HOUSING

The potential for the proposed project to result in adverse impacts related to population and housing was assessed in Section 2.4, Community Impacts, in the IS/EA. The discussion below is based on the discussion in Section 2.4.

a) No Impact. The proposed project would reduce traffic congestion and improve operational deficiencies on SR-91. The proposed project would accommodate existing deficiencies as well as planned growth and would not foster growth in excess of what is already projected. The proposed project would not be expected to influence the amount, location, and/or distribution of growth in the area cities and counties. The proposed project would not, in itself, result in changes in land use, economic vitality, and population density. Therefore, the proposed project is not considered growth-inducing and not mitigation is required

b) No Impact. The proposed project would not displace any existing housing. Therefore, the proposed project would not result in impacts related to displacement of housing. No mitigation is necessary.

c) No Impact. The proposed project would not displace any existing housing and therefore would not displace any people. Therefore, the proposed project would

not result in impacts related to displacement of people or housing. No mitigation is necessary.

XIII. PUBLIC SERVICES

The potential for the proposed project to result in adverse impacts related to emergency services was assessed in Section 2.5, Utilities and Emergency Services, in the IS/EA. The discussion below is based on that analysis.

a) Less Than Significant Impact. The proposed SR-91 lane addition project involves modification to this existing transportation facility. It would not directly or indirectly affect the provision of police or emergency services or public facilities such as schools and parks in the project area. The proposed project would not result in adverse physical impacts to government facilities in the study area. The proposed project does not include the construction of housing or other uses that would necessitate the construction of additional public facilities in the study area.

During construction, traffic would be temporarily detoured or delayed, which may result in a temporary increase in emergency response times in the project area. Implementation of a TMP, discussed in Section 2.6, during construction would minimize impacts to emergency access. No mitigation is required.

XIV. RECREATION

The potential for the proposed project to result in adverse impacts related to recreation resources was assessed based on review of existing recreation resources in the vicinity of the project segment of SR-91. The discussions below are based on the findings of that analysis.

a) No Impact. The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities or otherwise substantially contribute to accelerated deterioration of any such facilities. As discussed in Section 2.16, areas within Chino Hills State Park will be enhanced or restored with coastal sage scrub vegetation and coast live oak trees. No mitigation is required.

b) No Impact. The proposed project does not include the construction of new or expanded recreational facilities. Therefore, the proposed project would not result in adverse impacts associated with the construction of new or expanded recreational facilities. No mitigation is required.

XV. TRANSPORTATION AND TRAFFIC

The potential for the proposed project to result in adverse impacts related to traffic was assessed in the *Final Traffic Analysis Report for the Project Report and Environmental Document* (Meyer, Mohaddes Associates, June 2007). The discussion below is based on the findings of the traffic analysis and the summary discussion of the traffic analysis in Section 2.6, Traffic and Transportation, in the IS/EA.

a) No Impact. As discussed in detail in Section 2.6, the proposed project would reduce congestion, improve the level of service (LOS) on the project segment, improve weaving, and reduce the risk of traffic accidents, compared to the No Build Alternative. No mitigation is required.

b) No Impact. Refer to response XV.a, above. A purpose of the project is to reduce congestion and improve LOS, which is consistent with the County Congestion Management Plan. No mitigation is required.

c) No Impact. The construction and operation of the proposed project would not result in any new obstructions into restricted air space and would not result in a change in air traffic patterns in the vicinity of the project limits. No mitigation is required.

d) No Impact. The proposed project would be designed and constructed in compliance with Caltrans Standard Construction Specifications and other applicable professional design and construction standards. The project does not propose any hazardous design features or incompatible uses and would decrease the risk of traffic accidents and no mitigation is required.

e) Less Than Significant Impact. During construction, traffic would be temporarily detoured or delayed, which may result in a temporary increase in emergency response times in the project area. Implementation of a TMP during construction, discussed in Section 2.6, would minimize impacts to emergency access. Therefore, impacts to emergency response are less than significant and no mitigation is required..

f) No Impact. The proposed project would not result in the permanent displacement of existing parking spaces or result in the need for additional parking. No mitigation is required.

g) No Impact. The proposed project would be accessible to persons of limited mobility, shared ride users, and public and private transit services. Therefore, the

proposed project would be consistent with adopted policies, plans, or programs supporting alternative transportation. No mitigation is required.

XVI. UTILITIES AND SERVICE SYSTEMS

The potential for the proposed project to result in adverse impacts related to utilities and service systems was assessed in Section 2.5, Utilities and Emergency Services, in the IS/EA. The discussion below is based on that analysis.

a) No Impact. The project proposes improvements to this existing transportation facility. The proposed project would not result in the generation of wastewater and therefore would not exceed the existing wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board (RWQCB). Further, the proposed project would be constructed and operated consistent with the requirements of the Santa Ana RWQCB. Therefore, the proposed project would not result in adverse impacts related to the generation of wastewater or the requirements of the Santa Ana RWQCB. No mitigation is required.

b) No Impact. The project proposes improvements to this existing transportation facility. The proposed project would not result in the generation of wastewater and therefore would not result in the need for expanded or new wastewater treatment facilities and no mitigation is required.

c) Less Than Significant Impact. As described in detail in Section 1.0, Proposed Project, in the IS/EA, the design and construction of the proposed project would include modifications to the existing drainage facilities in the project limits to accommodate the additional travel lane. These modifications include culvert improvements, bioswales, and energy dissipation. Freeway drainage would be directed to the Santa Ana River consistent with the existing condition. In addition, Caltrans/OCTA will utilize reclaimed water for irrigation, where feasible. Therefore, the proposed project would not result in adverse impacts related to the need for new or expanded drainage facilities. No mitigation is required.

d) No Impact. The SR-91 project proposes improvements, including replacement landscaping, to the existing transportation facility. The proposed project is not anticipated to result in a substantive increase in the need for water for the project landscaping as much of the landscaping would be native plant materials that would only be irrigated during the plant installation and stabilization period and not in the long term. In addition, Caltrans/OCTA will utilize reclaimed water for irrigatioin where feasible. Therefore, the proposed project is not anticipated to result

in increased demand for water resources such that new or expanded entitlements would be needed. No mitigation is required.

e) No Impact. Refer to responses XVI.a and XVI.b.

f) Less Than Significant Impact. Construction of the proposed project would result in the generation of waste material, including landscaping materials, soil, construction debris, and other materials. Consistent with the requirements of Assembly Bill (AB) 939 related to recycling and Caltrans SSPs, the construction contractor would be required to recycle waste materials to the extent feasible and consistent with the project construction schedule. The existing landfills in Orange and Riverside County are anticipated to be able to accommodate the excess waste material that cannot be recycled. Construction of the proposed project is anticipated to be balanced, with excess fill used within the construction limits. Therefore, construction of the proposed project is not anticipated to result in adverse impacts related to the disposal of solid waste. No mitigation is required.

Operation of the proposed project would result in the generation of litter collected along the roadway and landscaping and plant materials associated with ongoing maintenance of the project segment of SR-91. The amount of debris generated would be similar to existing volumes currently collected by Caltrans on the existing facility and disposed of in area landfills. Therefore, operation of the proposed project is not anticipated to result in adverse impacts related to the disposal of solid waste. No mitigation is required.

g) Less Than Significant Impact. Refer to response to XVII.f, above.

XVII. Mandatory Findings of Significance

a) Less Than Significant Impact with Mitigation Incorporated. The proposed project has the potential to affect sensitive species and wildlife corridors. Avoidance, minimization, and mitigation measures have been provided in Section 2.16 through 2.21 of the IS/EA that reduce potential impacts to biological resources to less than significant levels. Based on the findings of the HPSR, no important examples of the major periods of California history or prehistory were observed within or immediately adjacent to the project disturbance limits.

b) Less Than Significant Impact. As discussed in detail in Section 2.17, Cumulative Impacts, in the IS/EA, the proposed project would not result in or contribute to cumulatively significant adverse impacts.

c) Less Than Significant Impact. As discussed in Chapter 2.0 or the IS/EA, avoidance and minimization measures are required to reduce impacts related to aesthetics, air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, and transportation. With implementation of these measures, direct or indirect effects on the human environment would not be significant and no additional measures are required.

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Appendix B Resources Evaluated Relative to the Requirements of Section 4(f)

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This section of the document discusses parks, recreational facilities, wildlife refuges and historic properties found within or adjacent to the project area that do not trigger Section 4(f) protection either because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

[Letters from agencies to be provided]

Appendix C Title VI Policy Statement

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Appendix D Environmental Commitment Record

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The California Environmental Quality Act, Public Resources Code Section 21081, and Sections 15091 and 15097 of the California Environmental Quality Act Guidelines require that a Mitigation Monitoring and Reporting Program be adopted when the Lead Agency (in this case the California Department of Transportation [Caltrans] District 8 and 12) adopts an environmental document. The purpose of the Environmental Commitments Program is to fulfill this requirement under CEQA and to assign responsibility for the implementation, monitoring, and timing of each mitigation measure that has been identified to reduce an identified environmental impact to a less than significant level. The Lead Agency is required to ensure compliance with each of the adopted mitigation/compensation measures outlined in the Environmental Commitments Program because additional significant environmental impacts could result from the project if the mitigation/compensation measures are not implemented. The Caltrans and Orange County Transportation Authority (OCTA, a Responsible Agency under CEQA) will administer the design, right-of-way acquisition and construction of the project. Therefore, all of the mitigation/compensation measures will be Caltrans and OCTA's responsibility to implement.

The attached table lists each of the project's environmental impacts identified in the environmental document and includes the corresponding mitigation/compensation measures required to reduce or eliminate the project's significant environmental impacts, where possible. The three columns on the right side of the table list the timing of the mitigation/compensation measure and the department(s) responsible for ensuring that the mitigation/compensation measure is implemented. The far-right column is left blank to allow staff to add the verification date of each mitigation/compensation measure. This column should be used as a reference for verifying that each of the mitigation/compensation measures is implemented and that ongoing mitigation/compensation measures are regularly checked. Once the project is constructed, a report should be submitted to Caltrans reporting on the project's compliance with the mitigation/compensation measures.

Environmental Commitment Record

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
LAND USE							
--	Compliance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970 and the avoidance, minimization, and mitigation measures N-1 and N-2..		X	OCTA and Caltrans	Prior to and during property acquisition		
GROWTH							
--	Alternative 2 would not result in growth-inducing impacts; therefore, no avoidance, minimization, or mitigation measures are required.						
FARMLAND/TIMBERLANDS							
--	There are no impacts associated with farmlands; therefore, no avoidance, minimization, or mitigation measures are required.						
COMMUNITY CHARACTER AND COHESION							
--	Compliance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970.		X	OCTA and Caltrans	Prior to and during property acquisition		
UTILITIES /EMERGENCY SERVICES							
--	Measures to address temporary construction related impacts to emergency services are addressed below in Measure T-1.						
--	Conduct potholing during final design to verify and confirm the location of the crude oil pipeline in Caltrans right-of-way.	X	X	OCTA and Caltrans	During final design		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
TRAFFIC AND TRANSPORTATION							
T-1	A detailed Traffic Management Plan (TMP) will be prepared during the Plans, Specifications, and Estimates (final design) phase of the proposed project. The objective of the TMP is to minimize the potential impacts that construction activities may have on the traveling public and emergency service providers. Preparation of the TMP will be coordinated with the emergency services providers in the project vicinity to minimize response delays resulting from traffic delays, temporary ramp and lane closures, and detours during project construction. The TMP for the proposed project would include the following elements and strategies: • Traffic control plans and related specifications, to be completed during final design of the proposed project, will be developed in accordance with the Work Area Traffic Control Handbook (also referred to as the WATCH manual), Section 5 of the Caltrans Traffic Manual, applicable city requirements, and Orange County Transportation Authority (OCTA) Express Lane requirements. These plans and specifications will include elements such as: Advance Signs and portable Changeable Message Signs (CMSs); traffic surveillance; temporary call boxes (during call-box relocations); lane/shoulder closures; and temporary signing/striping on local streets, the eastbound on- and off-ramps at the Green River Road interchange, SR-91 eastbound	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	to SR-71 northbound connector; and the SR-91 mainline. Temporary lane closures of SR-91 are anticipated during temporary restriping of the existing eastbound lanes, including the toll lanes. This work will be done at night from 11:00 p.m. to 5:00 a.m. Lane closures will be coordinated with Caltrans and the OCTA Express Lanes facility manager. Anticipated detour routes during construction of the eastbound on- and off-ramps at the Green River Road interchange and SR-91 eastbound to SR-71 northbound connector will be identified in the preliminary TMP. Signal timing may be adjusted along the detour routes to enhance traffic operations. • The proposed project will implement a Construction Zone Enhanced Enforcement Program (COZEEP) and use California Highway Patrol (CHP) officers to enforce lane closures and provide a visual deterrent to errant/speeding vehicles. • The proposed project will implement a Public Awareness Campaign (PAC). Although any lane closures would occur at night, there would still be a potential temporary impact to vehicles traveling through the construction zone. The purpose of this PAC is to keep the surrounding community abreast of the proposed project's progress and construction activities that could affect the public's travel plans and to minimize delays or confusion to the motoring public during construction activities. The use of mailers/flyers and local newspaper advertising should be used to disseminate						

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	this information.
	• The proposed project will implement a Construction Freeway Service Patrol (CFSP) program. The CFSP will provide tow truck service to aid stranded motorists and remove disabled vehicles from the traveled way or shoulders.
	• The proposed project will implement the following construction strategies to minimize construction related impacts:
	• Perform major construction activities at off-peak hours, such as at night or during the weekends, when feasible and reasonable.
	  ○ Finalize ramp and connector closure charts during the final design phase. The lane closure charts developed by District 8 do not allow full closure of the ramps. During final design, the proposed lane and connector closures will be presented to the Caltrans Lane Closures Review Committee (LCRC) for approval.
	  ○ Coordinate construction with adjacent projects. Coordination is important to address possible temporary increases in traffic due to detours from adjacent projects. Construction of the adjacent projects is anticipated to be completed prior to construction of the proposed project.
	  ○ All ramp reconstruction and freeway widening will be constructed in stages to minimize disruption.
	• The proposed project will include contingency plans that specify the actions that will be taken in the event that something unexpected occurs with respect						

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	to construction activities or traffic operations. The contractor will review these plans and incorporate them into the contractor's contingency plan. • The proposed project will implement a subsidized or free vanpool service during construction to minimize traffic congestion on the SR-91 mainline lanes.						
VISUAL AND AESTHETICS							
V-1	The shapes, textures, and colors or retaining walls will be consistent with the existing natural formations found in the view corridor. The shapes of the retaining walls will capture the distance views of the gently sloping and rolling hills; the tops of the walls will be somewhat rounded to curvilinear in shape-softening engineered height variances. The retaining walls will have a smooth to medium texture, emulating rock outcroppings. Retaining wall colors will be a subtle blending of the natural colors evident in far and rear views of a surrounding environment. In areas where retaining walls constructed with soil are required, ecosystem-appropriate natives will be planted at the back wall and allowed to cascade over the wall. As a second option, and only where dictated by engineering considerations, soil nail walls will be plantable crib walls. The colors and textures of the plantable crib walls will be consistent with existing natural formations. Crib walls will be intensely planted with ecosystem-appropriate natives so that they will blend in with the surrounding environment.		**X**	OCTA , Caltrans, and the construction contractor	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
V-2	Where the backs of sound walls are visible to residents, recreational area users and commercial areas, and where areas are available for landscaping within Caltrans right-of-way, trees, shrubs, vines, and groundcover will be planted to screen views of the walls from the adjacent land uses. The colors and textures of the sound walls will be consistent with the existing natural formations within in the view corridor. Where sound walls are visible from the highway and there is no space in front of the walls for planting, vines will be planted at the back of the walls to climb over the walls. Where feasible, vineways will be constructed to penetrate the base of sound walls at specified intervals. The intent would be to allow vines to grow through the walls and cover from the base upward.		**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
V-3	The sound walls to be constructed adjacent to residential uses will be designed to use a clear product (such as tempered glass or Lucite) for as much of the wall height as possible to minimize adverse visual effects while achieving the desired noise reduction.		**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
V-4	Land cover areas disturbed by grading and project construction will be revegetated with ecosystem-appropriate native trees, shrubs, and/or groundcover. The revegetation will blend with adjacent undisturbed land cover areas. Plant materials used for landscaping within Caltrans right-of-way adjacent to the project segment of SR-91 will be native species consistent with the native species identified in		**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	the I-215/SR-91 Corridor Master Plan and the Executive Order 13112, Invasive Species.						
V-5	An aesthetic Design Review Team to include Caltrans Landscape Architecture units will be established to ensure that the project complies with the 215/91 Corridor Master Plan for improvements within Riverside County.						
CULTURAL RESOURCES							
CR-1	If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner will be contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendant (MLD). At this time, the person who discovered the remains will also contact the District 8 (if the remains are found in Riverside County) or District 12 (if the remains are found in Orange County) Environmental Branch Chief so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	**X**	**X**	Construction contractor	During construction		

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HYDROLOGY AND FLOODPLAINS							
--	Measures to minimize construction impacts on the natural and beneficial floodplain values are discussed under Water Quality and Biological Environment. There are no permanent impacts associated with hydrology and floodplains, therefore no additional measures are required.						
WATER QUALITY AND STORM WATER RUNOFF							
WQ-1	As applicable, the provisions of the *NPDES General Permit, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activities (Order No. 99-08-DWQ, NPDES No. CAS000002)* and any subsequent permit as they relate to construction activities for the project will be complied with during construction. The provisions of the *Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ NPDES No. CAS000003)* and any subsequent permit as they relate to construction activities for the project will be complied with during construction. This will include submission of a *Notice of Construction* (NOC) to the Santa Ana Regional Water Quality Control Board at least 30 days prior to the start of construction, preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), and submission of a *Notice of Construction Completion* (NCC) to the Santa Ana Regional Water Quality Control Board upon completion of construction and stabilization of the site.	**X**	**X**	OCTA, Caltrans, and the construction contractor	Prior to and during construction		
WQ-2	The procedures outlined in the *Storm Water Quality Handbooks, Project Planning and Design Guide* (March 2007 or subsequent issuance) will be followed during implementation of Treatment Control Best Management Practices (BMPs) for the project. This will include coordination with the Santa Ana Regional Water Quality Control Board with respect to feasibility, maintenance, and	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design, construction, and operational maintenance		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	monitoring of Treatment Control BMPs as set forth in the Caltrans *Statewide Storm Water Management Plan* (SWMP, June 2007 or subsequent issuance).						
WQ-3	During dewatering activities, the provisions of the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality, Order No. R8-2003-0061 NPDES No. CAG998001, as they relate to construction activities for the project, will be followed. This will include submission of a *Notice of Intent* to the Santa Ana Regional Water Quality Control Board at least three months prior to the start of dewatering and compliance with all applicable provisions in the De Minimus permit, including water sampling, analysis, and reporting of dewatering-related discharges.	**X**	**X**	OCTA, Caltrans, and the construction contractor	Prior to and during dewatering		
GEOLOGY, SOILS, SEISMIC, AND TOPOGRAPHY							
GS-1	Subgrade preparation will consist of the following: • Removal of existing pavements, structures, vegetation, debris, and any unsuitable materials in conformance with Section 15 of Caltrans Standard Specifications. • Excavate materials a minimum of 0.6 meters (m) (2 feet [ft]) prior to placement of new fill materials. • Proof-roll the exposed surface with loaded heavy equipment. • Loose soils on the exposed surface will be overexcavated and recompacted. Any such loose soils that cannot be recompacted will be removed and disposed of off-site. • Scarify and compact the exposed surface to the specified density before placement of	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	new fill. • Achieve a minimum relative compaction of 95 percent for all subgrade soils to a minimum depth of 0.2 m (8 inches [in]) below the grading plane for the width between the outer edges of shoulders for both infill and inexcavation. • Achieve a minimum relative compaction of 95 percent for all subgrade materials to a depth of 0.2 m (8 in) below the finished grade the width of the traveled way plus a distance of 0.9 m (3 ft) horizontally beyond the traveled way, whether in embankment or excavation.						
GS-2	Areas where the back slope is steeper than 1 vertical to 1.5 horizontal and/or in the instability risk areas identified in the tables on pages A-29 and A-30 of the *Preliminary Geotechnical Information Report* (Kleinfelder, Inc., April 2007), nonstandard retaining walls will be required, as summarized in the table on page A-30 of the *Information Report*. For areas where the slope above the wall is to remain 1 vertical to 1.5 horizontal and not in the slope instability risk areas, Caltrans standard retaining walls may be selected.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
GS-3	To assist final geotechnical design of the walls and improve cut slope stability analyses, geotechnical instrumentation will be installed at several locations under the supervision of a Registered Geotechnical Engineer within the existing slide zones. Instrumentation should include inclinometers at approximate stations 173+80, 175+50, and 4+20. Inclinometers should be constructed on the slopes above the proposed work area to a depth sufficient to penetrate the deepest landslide slip plane.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	Inclinometers should be sited to provide both near-cut and overall deformation information.						
GS-4	Peak bedrock acceleration (PBA) values contained in the table on page A-22 of the *Preliminary Geotechnical Information Report* (Kleinfelder, Inc., April 2007) will be submitted to Caltrans for review and approval.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
GS-5	Project design will address the potential for buried metal to be corroded by the soil.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
GS-6	If hillside sound walls are approved by the affected residents, a geotechnical engineer will approve the wall foundation design. Foundations for the portion of SW-9 located on unstable slopes should be planned as cast-in-drilled hole foundations with depths and structural rigidity greater than normal. In addition, to determine slope stability, surface mapping, drilling, and borehole sampling should be performed at the top of the slopes where sound walls will be constructed to a distance of at least 30.5 m (100 ft) downhill.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design		
GS-7	The potential for scour at the SR-91/SR-71 Separation Bridge will be investigated during final design. The final project design will address the potential for scour at this structure's location.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		

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PALEONTOLOGY							
P-1	• A detailed Paleontological Mitigation Plan (PMP) will be prepared during the Plans, Specifications, and Estimates (final design) phase of the proposed project. The PMP should be consistent with the guidelines of the Society of Vertebrate Paleontology as well as current Caltrans guidelines and should include but not be limited to the following: • Attendance at the pregrade meeting by a qualified paleontologist or his/her representative. At this meeting the paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods that will be employed if anything is discovered (see below). • During construction excavation, a qualified vertebrate paleontologic monitor will initially be present on a full-time basis whenever excavation will occur within the sediments that have a high sensitivity rating and on a spot-check basis in sediments that have a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions and when they occur will be determined by the qualified Principal Paleontologist). The monitor will inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor will be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor will be equipped to rapidly stabilize	**X**	**X**	Qualified Principal Paleontologist	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, the developer will consider using heavy equipment on site to assist in the removal and collection of large materials. • Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these native sediments occasionally be spot-screened through one-eighth to one-twentieth-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, additional sediment samples (up to 3 cubic yards or 6,000 pounds) will be collected and processed through one-twentieth-inch mesh screens to recover additional fossils. • Any recovered specimens will be prepared to the point of identification and permanent preservation. This includes the picking of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and the storage cost, and the addition of approved chemical hardeners/stabilizers to fragile specimens. • Specimens will be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important.						

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	The repository institution may be a local museum or university that has a curator who can retrieve the specimens on request. Caltrans requires that a draft curation agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.						
P-2	• A detailed Paleontological Mitigation Report (PMR) will be completed, consistent with current Caltrans guidelines, at the end of the project. The PMR should include but not be limited to describing the methods and results of the monitoring program, even if the results are negative. If applicable, this will include an appended itemized inventory of identified specimens, discussions on the paleontological significance of any finds, and how they fit into the overall geological context of the area. This report will be presented to Caltrans for review; when the review process has been completed, the revised document will signify completion of the PMP. A copy of the final report and the accession inventory shall be forwarded to the repository institution, Caltrans, and any other interested parties.	**X**	**X**	Qualified Principal Paleontologist	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
HAZARDOUS WASTES AND MATERIALS							
H-1	During project construction, soil in the project limits in Riverside County between Stations 5+50 and 39+60 may be reused within Caltrans right-of-way provided it is placed a minimum of 1.5 meters (m) (5 feet (ft)) above the maximum water table and is covered by pavement. Soil in Orange County between Station 141+88 and Riverside County Station 5+50 may be reused within Caltrans right-of-way provided it is placed a minimum of 1.5 m (5 ft) above the maximum water table and is covered by clean soil. Soil export will be minimized and excess soil generated during project construction, if any, will be disposed of as a non-Resource Conservation and Recovery Act (RCRA), California hazardous waste at a Class I hazardous waste disposal facility. Soils excavated at sound wall locations outside of Caltrans right-of-way may be imported into Caltrans right-of-way for reuse if the environmental requirements in the Caltrans Standard Specifications are complied with and the soil is tested for pH, volatile organic compounds, Title 22 metals, soluble metals, and total petroleum hydrocarbons.	**X**	**X**	OCTA, Caltrans, and construction contractor	During construction		
H-2	Pavement markings and tapes made with yellow paints manufactured prior to 1995 and removed during project construction will be disposed of at a Class I landfill.	**X**	**X**	OCTA, Caltrans, and construction contractor	During construction		
H-3	Prior to the final environmental document, presumed asbestos-containing (PAC) materials, including rails, bearing pads, support piers, expansion joint material of bridges, asphalt, and concrete, will be surveyed, and assessed, in compliance with 40 CFR 763.	**X**	**X**	OCTA, Caltrans, and construction contractor	Prior to the final environ-mental document	Asbestos Survey Report was completed	Oct. 10/8, 20/07

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
H-4	During construction, if bridge structures not previously tested for asbestos are anticipated to be disturbed or if suspect asbestos-containing materials are discovered, the contractor shall stop work and these materials will be surveyed and assessed for asbestos prior to disturbance.	**X**	**X**	OCTA, Caltrans, and construction contractor	During construction		
AIR QUALITY							
SC-1	The construction contractor will adhere to the requirements of the South Coast Air Quality Management District (SCAQMD) rules and regulations on cutback and emulsified asphalt paving materials.	**X**		Construction contractor	During construction		
SC-2	The construction contractor will adhere to the requirements of SCAQMD Rule 403. The Required Best Available Control Measures (BACMs) specified in Table 1 in the SCAQMD Rule 403: Fugitive Dust Control (June 3, 2005) will be incorporated into the project construction. The Required BACMs are listed in Table 7 in the Air Quality Analysis.	**X**		Construction contractor	During construction		
SC-3	All disturbed areas, including storage piles that are not being actively used for construction purposes, will be effectively stabilized for dust emissions using water, chemical stabilizers/ suppressants, and/or vegetative ground cover, as appropriate.	**X**	**X**	Construction contractor	During construction		
SC-4	All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized for dust emissions using water and/or chemical stabilizers/suppressants.	**X**	**X**	Construction contractor	During construction		
SC-5	All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled for fugitive dust emissions by using applications of water and/or by presoaking.	**X**	**X**	Construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
SC-6	When material is transported off site, it will be covered or effectively wetted to limit visible dust emissions, or at least 152 millimeters (6 inches) of freeboard space from the top of the container will be maintained.	**X**	**X**	Construction contractor	During construction		
SC-7	All operations will limit or expeditiously remove mud accumulation 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.	**X**	**X**	Construction contractor	During construction		
SC-8	Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, those piles will be effectively stabilized for fugitive dust emissions using sufficient water and/or chemical stabilizers/suppressants.	**X**	**X**	Construction contractor	During construction		
SC-9	Traffic speeds on unpaved roads will be limited to 24 kilometers per hour (kph) (15 miles per hour [mph]).	**X**	**X**	Construction contractor	During construction		
SC-10	Sandbags or other erosion control measures will be installed to prevent silt runoff to public roads from sites with a slope greater than 1 percent.	**X**	**X**	Construction contractor	During construction		
SC-11	Wheel washers for all exiting trucks will be installed, or all trucks and equipment will be washed off before leaving the site.	**X**	**X**	Construction contractor	During construction		
SC-12	Wind breaks will be installed at the windward side(s) of construction areas.	**X**	**X**	Construction contractor	During construction		
SC-13	Excavation and grading activity will be suspended when winds exceed 32 kph (20 mph).	**X**	**X**	Construction contractor	During construction		
SC-14	The total area subject to excavation, grading, and other construction activity at any one time will be limited to the extent feasible consistent	**X**	**X**	Construction contractor	During construction		

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	with the overall construction activities underway.						
AQ-1	In the event that naturally occurring asbestos, serpentine, or ultramafic rock is discovered during grading operations, the construction contractor will adhere to Section 93105, Title 17 of the California Code of Regulations. The South Coast Air Quality Management District (SCAQMD) will be notified by the next business day, and the following measures will be implemented within 24 hours: • Unpaved areas subject to vehicle traffic will be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, and/or covered with material that contains less than 0.25 percent asbestos. • The speed of any vehicles and equipment traveling across unpaved areas must be no more than 24 kph (15 mph) unless the road surface and surrounding area are sufficiently stabilized to prevent vehicles and equipment traveling more than 24 kph (15 mph) from emitting dust that is visible crossing the project boundaries. • Storage piles and disturbed areas not subject to vehicular traffic will be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, and/or covered with material that contains less than 0.25 percent asbestos. • Activities must be conducted so that no track-out from any road construction project is visible on any paved road open to the public. • Equipment and operations must not cause	**X**		Construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	the emission of any dust that is visible crossing the project boundary.						
AQ-2	In the event that the proposed project is classified as a "Large Project" under SCAQMD Rule 403: Fugitive Dust Control (June 3, 2005), the construction contractor will: • Comply with the Dust Control Measures for Large Operations (SCAQMD Rule 403: Fugitive Dust Control [June 3, 2005], Table 2) as listed in Table 8 in the *Air Quality Analysis.* • Submit a fully executed Large Operation Notification (SCAQMD Form 403N) to the SCAQMD Executive Officer within seven days of qualifying as a Large Operation. • Include, as part of the notification, the names, addresses, and phone numbers of the persons responsible for the submittal, and include a map depicting the location of the site. • Maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years, and make such records available to the SCAQMD Executive Officer on request. • Install and maintain project signage with project contact signage that meets the minimum standards of the SCAQMD Rule 403: Fugitive Dust Control (June 3, 2005), prior to initiating any earthmoving activities. • Identify a dust control supervisor, who is employed by or contracted with the property owner/developer, is on the site or available on-site within 30 minutes during working hours, has the authority to	**X**		Construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	expeditiously implement sufficient dust mitigation measures to ensure compliance with all Rule requirements, and has completed the SCAQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for that class. • Notify the SCAQMD Executive Officer in writing within 30 days after the site no longer qualifies as a Large Operation.						
	FHWA air quality conformity determination letter was obtained on October 29, 2007, and is included in Appendix J.	X	X	OCTA, Caltrans, and FHWA	Prior to final environ-mental document	Obtained Letter	10/29/07
NOISE							
N-1	Sound walls (SW) 7, 8, and 9, which are considered both feasible and reasonable, will be constructed to abate anticipated project noise impacts. Prior to construction, Caltrans (and other agencies, as appropriate) will determine whether the timeframe of the improvements would result in the reduction of SW-3's useful life to less than 15 years. If this is the case, SW-3 will not be reasonable and will not be constructed. If not, then SW-3 will be constructed.			OCTA, Caltrans, and the construction contractor	During final design and construction		
N-2	The control of noise from construction activities will conform to Section 5-1, "Sound Control Requirements," in Caltrans Standard Special Provisions. Sound control will conform to the provisions in Section 7-1.011, "Sound Control Requirements," of the Standard Specifications and the following special provisions: "The noise level from the contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m. will not exceed 86 dBA at a distance of 15.24 meters (m) (50 feet [ft]).	X	X	Construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	This requirement in no way relieves the contractor from responsibility for complying with local ordinances regulating noise level. Said noise level requirement will apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the contractor. The use of loud sound signals will 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 will be considered as included in the prices paid for the various contract items of work involved and no additional compensation be allowed therefore."						
N-3	Sound walls 7, 8, and 9 (and 3 if determined to be reasonable) should, where possible, be constructed or portable sound walls installed prior to construction of the proposed lane widening project. The use of portable sound walls is generally not considered desirable by Caltrans due to the high costs of such barriers.		**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
	Construction activities would comply with local noise ordinances, including those of the Cities of Anaheim, Yorba Linda, and Corna and the Counties of Orange and Riverside.	**X**	**X**	Construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
BIOLOGICAL ENVIRONMENT							
BIO-1	All construction staging will occur in designated areas within the defined project disturbance limits as determined by the District Biologist in consultation with the Project Engineer.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
BIO-2	During all construction activities, existing wildlife corridors will be kept clear of all equipment and structures that could serve as barriers to wildlife passage. An openness ratio of 0.6 m (2.0 ft) and appropriate height will be maintained at the Coal Canyon undercrossing for use by large mammals.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
BIO-3	During final design, Environmentally Sensitive Areas (ESAs) will be delineated within and adjacent to the project footprint where sensitive resources are present, including coastal sage scrub and riparian habitat. No construction personnel, activities, materials, or equipment will be permitted in these areas during construction.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design and construction		
BIO-4	During all construction activities, a qualified biologist will monitor to ensure that delineation of the ESAs in the project area, vegetation removal, Best Management Practices (BMPs), and all avoidance and minimization measures are properly implemented and followed.	**X**	**X**	OCTA, Caltrans, and Construction contractor	During final design and construction		
BIO-5	The removal of any existing wildlife fencing will be implemented after installation of the new fencing to protect against wildlife/vehicle incidents. The new fencing must be the same height or greater than the previous wildlife fence and must be maintained and functional throughout project construction and operation to prevent wildlife/vehicle incidents.	**X**	**X**	Construction contractor	During construction		
BIO-6	During construction, all equipment maintenance, lighting, and staging will be in	**X**	**X**	Construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	designated areas, away from delineated ESAs and wildlife corridors. The following measures specifically apply to the Coal Canyon area: • Vehicles staged on the eastbound on-ramp would not be equipped with security lights. • The use of this area would be kept to a minimum, and where possible, the area would be avoided from February 15 to September 1. • Use of the emergency access road as a turnaround or "shortcut" would be prohibited. The road would only be used during bridge construction and general road construction at Coal Canyon. In general, no hauling would be allowed at night through the underpass and freeway off-ramps. • Structure for bridgework would be erected in a manner so as not to block the undercrossing. Scaffolding and false work would be restricted to the sides of the undercrossing and limits of the existing exclusionary chain-link fence in order to maintain the existing width of the corridor. • Pile driving would be prohibited within 305 m (1,000 ft) of Coal Canyon. Cast-and-drill piles would be used instead of pile drivers. If possible, these activities should occur outside gnatcatcher nesting season (February 15–August 30).						

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
BIO-7	During construction, if work must be done at night, noise and direct lighting will be directed away from delineated ESAs and wildlife corridors. No work will be conducted between the hours of 1600 and 0700 (4:00 p.m. and 7:00 a.m.) within 305 meters (m) (1,000 feet [ft]) of Coal Canyon, Fresno Canyon, and Wardlow Wash.	**X**	**X**	Construction contractor	During construction		
BIO-8	The existing culvert structures that will be extended or modified by the proposed project will be designed so that the culvert entrances have textured concrete drawdown pads.	**X**	**X**	OCTA and Caltrans	During final design		
BIO-9	Silt fence barriers will be installed at the protected zone (7.62 m [25 ft]) outside the drip line of each coast live oak tree to prevent accidental deposition of fill material into areas where trees are immediately adjacent to planned grading activities. No structure of any kind, incidental storage of equipment or supplies, or operation of any construction equipment will be allowed within the protected zone of any coast live oak tree.	**X**		OCTA, Caltrans, and the construction contractor	During final design and construction		
BIO-10	A total of 60 to 80 coast live oak trees will be planted within Chino Hills State Park. The actual number of trees to be planted will be based on the total number of trees removed as a result of the proposed project.	**X**		OCTA, Caltrans, and Construction contractor	During final design, construction, and vegetation establish-ment period		
BIO-11	Compensatory mitigation for coastal sage scrub impacts within Orange County will be conducted through restoration and/or enhancement within Chino Hills State Park. The mitigation ratios will be a minimum of 3:1 for permanent impacts and 2:1 for temporary impacts. The final mitigation ratios will be coordinated between Caltrans Districts 8 and	**X**	**X**	OCTA, Caltrans, and the construction contractor	During final design, construction, and vegetation establish-ment period		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date	
	12 and the resource agencies.							
BIO-12	During construction, all disturbed habitat within the project limits and adjacent to culverts (rated as a moderate or high potential) will be restored with native vegetation. Revegetation near the entrances of the wildlife crossings would provide cover and refuge for wildlife.	X	X	OCTA, Caltrans, and the construction contractor	During final design, construction, and vegetation establish-ment period			
BIO-13	During construction, a retaining wall will be constructed adjacent to Wardlow Wash, between Stations 28+65 and 34+10, from the freeway side on the existing slope to minimize impacts to riparian/riverine habitat.	X	X	OCTA, Caltrans, and the construction contractor	During construction			
BIO-14	Prior to the initiation of construction, a Nationwide or Individual Permit will be obtained through the USACE pursuant to Section 404 of the Clean Water Act. A mitigation ratio of 5:1 for permanent impacts to Fresno Canyon/Wardlow Wash and federal wetlands, and a mitigation ratio of 3:1 for permanent impacts to other jurisdictional waters was discussed in early coordination with USACE.	X	X	OCTA, Caltrans	During final design and prior to construction			
BIO-15	Prior to the initiation of construction, a Streambed Alteration Agreement with the CDFG will be obtained. A mitigation ratio ration of 5:1 for permanent impacts to CDFG jurisdiction in Fresno Canyon/Wardlow Wash and federal wetlands, and a ratio of 3:1 mitigation ratio for permanent impacts to other jurisdictional watersCDFG jurisdiction was discussed in early coordination with CDFG.	X		OCTA and Caltrans	During final design			
BIO-16	During final design, a Habitat Mitigation Monitoring Plan (HMMP) will be developed to restore the impacted riparian and coastal sage scrub habitats. The HMMP will be subject to United States Army Corps of Engineers (USACE) and California Department of Fish	X	X	OCTA and Caltrans	Prior to construction and vegetation establish-ment period			

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	and Game (CDFG) approval. The HMMP will, at a minimum, need to meet the following criteria: (1) the habitat will be replaced and/or enhanced at a minimum 1:1 ratio, and (2) the HMMP will identify a success criterion of at least 80 percent cover of native wetland vegetation for replaced habitat. Further criteria specified in the HMMP may include a five-year establishment period for the replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.						
BIO-17	Prior to the initiation of construction, a certification or waiver from the Region 4 Regional Water Quality Control Board (RWQCB) will be obtained.	**X**		OCTA and Caltrans	Prior to construction		
BIO-18	Prior to the initiation of construction, a Determination of Biological Equivalent or Superior Preservation (DBESP) will be obtained pursuant to Section 6.1.2 of the Western Riverside County Multi-species Habitat Conservation Plan (MSHCP).	**X**	**X**	OCTA and Caltrans	Prior to construction		
BIO-19	Additional focused surveys will be performed in 2008 during the appropriate blooming periods for sensitive plants. If sensitive plant species are observed during those surveys, additional measures may be warranted (e.g., translocation and preservation in place) based on listing status, quantity, location, and amount of impact, and consultation with regulatory agencies may be required.	**X**	**X**	OCTA and Caltrans	Prior to construction		
BIO-20	Prior to the initiation of construction, a Take Authorization for Covered Species Adequately Conserved (plants and wildlife) will be obtained in compliance with Section 6.0 of the MSHCP, which may include payment of a mitigation fee or any credit for land conveyed.	**X**	**X**	OCTA and Caltrans	Prior to construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
BIO-21	Construction will be conducted outside the general breeding season (February 15 to August 31) for birds. If construction cannot be conducted outside the breeding season, a preconstruction survey will be conducted by a qualified biologist to determine whether any active nests are within 155 meters (m) (500 feet [ft]) of the area of disturbance. If active nests are found, an exclusion area will be established around the nest. No construction personnel, activities, materials, or equipment will be permitted in this exclusion area until the nest is no longer active, as determined by a qualified biologist.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During construction		
BIO-22	Bridgework will be conducted between September 1 and February 14 to protect bridge and crevice-nesting birds. If this is not feasible, all bridge and crevice bird nests that will potentially be impacted by project construction must be removed under the guidance and observation of a qualified biologist prior to February 1. Removal of nests must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed under the guidance and observation of a qualified biologist. Nest exclusion devices, if used, must remain in place until September or completion of construction.	**X**	**X**	OCTA, Caltrans, and the construction contractor	During construction		
BIO-23	During final design, a qualified bat biologist will survey the area to assess the potential for its use as a maternity and night roost. In addition, prior to construction in bridge and structure work areas, those areas will be inspected in June and again prior to construction by a qualified bat biologist to assess the potential for its use as a maternity and night roost. Bridge and structure work will not be conducted during	**X**	**X**	OCTA and Caltrans	Prior to construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	the maternity roosting period (typically in the fall and winter months). If this is not feasible, exclusion devices will be installed under the guidance and observation of a qualified biologist. Those nest exclusion devices must remain in place until the completion of construction.						
BIO-24	Prior to the initiation of construction, burrowing owl surveys will be conducted to comply with the MSHCP, Migratory Bird Treaty Act, and the Fish and Game Code for the entire project area. If preconstruction surveys determine that the species is present in Riverside County, one or more of the following mitigation measures may be required under the MSHCP: (1) avoidance of active nests and surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of on-site habitat with long-term conservation value for the owl. Should burrowing owls occur in Orange County, similar measures would apply.	**X**	**X**	OCTA and Caltrans	Prior to construction		
BIO-25	Construction will be conducted outside the coastal California gnatcatcher (February 15 to August 30), least Bell's vireo (March through September), and southwestern willow flycatcher (May 1 through August 31) breeding seasons. If construction cannot be conducted outside these breeding seasons, preconstruction surveys will be conducted by a qualified biologist to determine whether any active nests are within 155 m (500 ft) of the area of disturbance. If active nests are found, an exclusion area will be established around the nest. No construction personnel, activities, materials, or equipment will be permitted in this exclusion area until the	**X**	**X**	OCTA, Caltrans, and the construction contractor	During construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date
	nest is no longer active, as determined by a qualified biologist.						
BIO-26	The project will adhere to the measures listed in the Biological Opinion issued by United States Fish and Wildlife Service (USFWS) under Formal Section 7 Consultation for impacts to coastal California gnatcatcher and least Bell's vireo. In addition, as part of the MSHCP joint review process, resource agencies (i.e., CDFG, USFWS) will be consulted.	**X**	**X**	OCTA and Caltrans	Prior to and during construction		
BIO-27	In compliance with Executive Order 13112, affected areas will be revegetated with plant species native to the vicinity, and the use of species listed on the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory will be avoided. In addition, for the parts of the project in Riverside County, invasive and nonnative species listed in Table 6-2 in the MSHCP will be avoided.		**X**	OCTA, Caltrans, and the construction contractor	During construction and vegetation establish-ment period		
BIO-28	All construction equipment will be inspected and cleaned off site to minimize the importation of nonnative plant material, and eradication strategies (i.e., weed abatement programs) will be employed should an invasion occur.	**X**	**X**	Construction contractor	During construction		
	Jurisdictional Delineation concurrence will be obtained from USACE as part of the USACEpermitting process.	**X**	**X**	OCTA and Caltrans	During final design		
CUMULATIVE IMPACTS							
--	The proposed project will not result in a substantial contribution to cumulative impacts. No avoidance, minimization, or mitigation measures, other than those listed above in this Environmental Commitment Record, are required.						
ADDITIONAL COMMITMENTS BASED ON PUBLIC REVIEW							
--	Add the following individuals to the contact list for the design phase and to the contact list for the public awareness campaign during construction: • Valerie McClung, Community Relations Manager, City of Chino Hills	**X**	**X**	OCTA and Caltrans	During final design and construction		

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date	
	• Mary Newland, Planner, City of Anaheim • Bruce M. Cook, Principal Planner, City of Yorba Linda • Amad Qattan, P.E., Public Works Director, City of Corona • Ronald L. Tippets, Chief, County of Orange • Michele Hernandez, Management Analyst, Orange County Fire Authority (OCFA) • Maria Levario, Acting Deputy Director, Transportation Corridor Authority (TCA) • Judi Tamasi, Wildlife Corridor Conservation Authority (WCCA) • Teresa Tung, Senior Civil Engineer, Riverside County Flood Control and Water Conservation District • Michele Hernandez, Management Analyst, Orange County Fire Authority • Bob Zemel, Star Ranch							
--	Specific well locations will be identified on future project plans if within Caltrans right-of-way or affected by the project.	X	X	OCTA and Caltrans	During final design			
--	The project proponents will comply with all regulatory requirements, including Section 3208.1 of the Public Resources Code regarding oil and gas wells.	X	X	OCTA and Caltrans	During final design and construction			
--	A meeting will occur with Rail Crossing Engineering Section (RCES) staff during the final design phase of the project.	X	X	OCTA and Caltrans	During final design			
--	A site visit will be conducted during final design to coordinate Temporary Construction Easements (TCEs) with State Parks.	X	X	OCTA and Caltrans	During final design			
--	Abandoned signs, if determined redundant, will be removed as part of this project. Redundancy determination of these signs will occur during the design phase.	X	X	OCTA and Caltrans	During final design			
--	If reclaimed water and appropriate connections	X	X	OCTA and	During final			

No.	Task and Brief Description	CEQA Requirement	NEPA Requirement	Responsible Party	Timing/ Phase	Action Taken to Comply with Task	Date	
	are made available at the project limits/Caltrans right-of-way by the City of Corona, the City's reclaimed water will be utilized in landscape irrigation to the extent possible.			Caltrans	design			
BIOLOGICAL OPINION								
General Avoidance/Minimization Measures								
1	Environmentally Sensitive Areas will be established within and adjacent to the project footprint where sensitive resources are present. Biological resource monitors will be present to ensure that avoidance and minimization measures are properly adhered to. All areas supporting coastal sage scrub and riparian habitat adjacent to the project footprint will be delineated as Environmentally Sensitive Areas. The boundaries of the Environmentally Sensitive Areas will be clearly delineated prior to construction, and no construction activities, materials, or equipment will be permitted within the established Environmentally Sensitive Areas.			OCTA, Caltrans, and Construction Contractor	During construction			
2	The following general measures apply to any construction activities potentially affecting wildlife movement corridors throughout the entire project area: A) The removal of any existing wildlife fencing must be implemented after the installation of the new fencing to protect against wildlife/vehicle incidents. This fencing must be at least as high as the previous wildlife fence and must be maintained and functional throughout the project to prevent wildlife/vehicle incidents. B) Following project construction, all disturbed habitat adjacent to culverts (rates as moderate to high potential) would be restored with native			OCTA, Caltrans, and Construction Contractor	During construction			

BIOLOGICAL OPINION								
General Avoidance/Minimization Measures								
	vegetation. Re-vegetation near the entrance of the wildlife crossings would provide cover and refuge for wildlife. C) Equipment maintenance, lighting, and staging must be in designated areas, away from wildlife corridor entrances. D) If work must be conducted at night, noise and direct lighting would be directed away from wildlife corridors. E) Wildlife movement corridors would be kept clear of all equipment or structures that could potentially serve as barriers to wildlife passage.							
3	Modifications will be made to improve wildlife passage through culverts as described in the October 5, 2007, letter to the CFWO (Carlsbad Fish and Wildlife Office), to the extent feasible. These modifications would include additional fencing to prevent wildlife on the highway, removal of fencing near culverts to enhance wildlife movement, and replanting with native vegetation to provide cover and refuge for wildlife.			OCTA, Caltrans, and Construction Contractor	During construction			
4	To minimize direct effects to nesting birds, all clearing of vegetation would occur outside the breeding season (March1-August 15). If the breeding seasons cannot be avoided, a qualified biologist would then be required to conduct nesting bird surveys prior to vegetation removal. These surveys would include a protocol survey for gnatcatcher in the year preceding construction. If no active nests were found to occur within the area of disturbance, project activities would be able to proceed; however, if an active nest were detected during the survey, an exclusion area would be established around the nest to prevent harassment.			OCTA, Caltrans, and Construction Contractor	During construction			

BIOLOGICAL OPINION								
General Avoidance/Minimization Measures								
5	Best Management Practices will be implemented to minimize potential water pollution during construction and future operation of the project. Proposed post-construction Best Management Practices include biofiltration swales, biofiltration strips, detention basins, and possibly infiltration basins.			OCTA, Caltrans, and Construction Contractor	During construction and operational maintenance			
6	Prior to project implementation, Caltrans will develop a SWPPP in accordance with the Caltrans National Pollution Discharge Elimination System to eliminate potential sedimentation impacts to off-site aquatic resources.			OCTA, Caltrans, and Construction Contractor	Prior to and during construction			
7	Caltrans will restore 2.66 ac (1.08 ha) of riparian habitat, including 1.30 ac (0.53 ha) of riparian habitat to offset impacts in the MCHCP Plan Area, through the Santa Ana Watershed Association (SAWA) in-lieu fee program. Specifically, to mitigate for impacts to riparian/riverine habitat, and other waters of the U.S. and State, Caltrans will contribute funds to the Inland Empire Resources Conservation District (IERCD) to create and restore riparian/riverine habitats and waters. In order to accomplish this, IERCD would remove eucalyptus trees from Prado Basin, and replace the habitat with native riparian vegetation such as willows and mulefat. The exact location of the mitigation site will be determined through coordination among Caltrans, the resource agencies, and IERCD. A cooperative agreement, which described the responsibilities of IERCD and Caltrans will be prepared. Temporary impact areas within Fresco Canyon/Wardlow Wash will also be replanted with a mixture of native riparian vegetation. This restoration will be conducted consistent with a restoration plan reviewed and approved by the Service prior to initiating project-			OCTA, Caltrans, and Construction Contractor	During construction and during plant establish-ment period			

BIOLOGICAL OPINION								
General Avoidance/Minimization Measures								
	related construction activities or removing vegetation.							
Minimization Measures Specific to Coal Canyon								
1	Hours of construction must be limited to daylight hours to ensure utilization of wildlife corridors. No construction would occur between the hours of 1600 and 0700 within 305 m (1,000 ft) of Coal Canyon.			OCTA, Caltrans, and Construction Contractor	During construction			
2	An openness ratio ([height x width]/length) of 0.6 m (2.0 ft) and appropriate height needs to be maintained at the highway undercrossing for use by larger mammals such as mule deer and mountain lions.			OCTA, Caltrans, and Construction Contractor	During construction			
3	The majority of bridge staging would occur on the eastbound on-ramp. Vehicles staged would not be equipped with security lights.			OCTA, Caltrans, and Construction Contractor	During construction			
4	Minimal staging area is available at the eastbound off-ramp along sides of paved road and would be used for staging of Coal Canyon only. The use of this area would be kept to a minimum, and where possible, the area would be avoided from February 15 to September 1.			OCTA, Caltrans, and Construction Contractor	During construction			
5	On- and off-ramps must remain open at all times for emergency and police personnel. Use of the emergency access road as a turnaround or "shortcut" would be prohibited. The road would only be used during bridge construction and general road construction at Coal Canyon. In general, no hauling would be allowed at night through the underpass and freeway off-ramps.			OCTA, Caltrans, and Construction Contractor	During construction			
6	Structure for bridgework would be erected in a manner so as not to block the main underpass. Scaffolding and false work would be restricted to the sides of the underpass and limits of the existing exclusionary chain-link fence in order to maintain the existing width of the corridor.			OCTA, Caltrans, and Construction Contractor	During construction			

BIOLOGICAL OPINION								
General Avoidance/Minimization Measures								
7	Pile driving would be prohibited within 305 m (1,000 ft) of Coal Canyon. Cast-and-drill piles would be used instead of pile drivers. If possible, these activities should occur outside gnatcatcher nesting season (February 15–August 30).			OCTA, Caltrans, and Construction Contractor	During construction			
8	Within Orange County, a mitigation ratio of 3:1 for permanent impacts and 2:1 for temporary impacts to coastal sage scrub is proposed based on the presence of gnatcatcher within Coal Canyon. Mitigation would involve the restoration of coastal sage scrub within the State Park land in Coal Canyon. This restoration will be conducted consistent with a restoration plan reviewed and approved by the Service prior to initiating project-related construction activities or removing vegetation.			OCTA and Caltrans	After construction and during plant establish-ment period			
Amount or Extent of Take								
	Incidental take of up to three pairs of gnatcatchers and one nest with eggs or nestlings in Orange County is expected in the form of harm due to the effects of the action as described above. Harm to the gnatcatcher pairs would occur due to temporary displacement from breeding and foraging habitat and the loss of reproductive opportunities. No take in the form of direct injury or mortality is anticipated as a result of this activity. Surveys will occur if activities occur during the nesting season to determine if gnatcatchers are nesting near the project and how many. If the take threshold is reached, Caltrans will contact the CFWO in a timely manner to reinitiate consultation. Incidental take within Riverside County is addressed through the MSHCP.			OCTA, Caltrans, and Construction Contractor	During construction			
Disposition of Sick, Injured, or Dead Specimens								
	Upon locating dead, injured or sick individuals of threatened or endangered species, initial			OCTA, Caltrans, and	During construction			

BIOLOGICAL OPINION								
General Avoidance/Minimization Measures								
	notification must be made to our Division of Law Enforcement in either San Diego, California, at (619) 557-5063 or in Torrance, California, at (310) 328-6307 within three working days. Notification should also be sent by telephone and writing to this office in Carlsbad, California at 6010 Hidden Valley Road, Carlsbad, California 92011, (760) 431-9440. Written notification must be made within five calendar days and include the collection date and time, the location of the animal, and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. Remains shall be placed with the San Diego Natural History Museum, San Diego. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution by the authorized biologist prior to implementation of the action.			Construction Contractor				

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Appendix E List of Acronyms

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ACHP	Advisory Council on Historic Preservation
USACE	Army Corps of Engineers
ADA	Americans with Disabilities Act
ADL	Aerially Deposited Lead
AHERA	Asbestos Hazard Emergency Response Act
APE	Area of Potential Effects
BA/BE	Biological Assessment/Evaluation
BACM	best available control measures
bgs	below ground surface
BFE	base flood elevation
BMPs	best management practices
BNSF	Burlington-Northern Santa Fe Railroad
BSA	Biological Study Area
CAA	Clean Water Act
CCR	California Code of Regulations
CCTV	Closed Circuit Television
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CO	carbon monoxide
COZEEP	Construction Zone Enhancement Enforcement Program
California Register	California Register of Historic Places
CNPS	California Native Plant Society
CWA	Clean Water Act
dBA	decibel
DBESP	Determination of Biologically Equivalent or Superior Preservation
DHHS	Department of Health and Human Services
DTSC	Department of Toxic Substances Control
EB	Eastbound
ED	Environmental Document
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESAs	Environmentally Sensitive Areas
F	Fahrenheit
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
FSP	Freeway Service Patrol
ft	feet
FTA	Federal Transit Administration
GHG	greenhouse gases
ha	hectares
HAI	Housing Affordability Index
HCA	Health Care Agency
HCP	Habitat Conservation Plan
HMMP	Habitat Mitigation and Monitoring Plan
HOV	high occupancy vehicle
IA	Implementation Agreement
IL	insertion loss, noise reduction

ISA	Initial Site Assessment
ITS	Intelligent Transportation Systems
LCRC	Caltrans Lane Closures Review Committee
LOS	level of service
m	meters
MCE	maximum credible earthquake
MLD	Most Likely Descendant
MSATs	Mobile Source Air Toxics
MSHCP	Western Riverside County Multi-species Habitat Conservation Plan
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native America Heritage Commission
NB	Northbound
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NES	Natural Environmental Study
NHPA	National Historic Preservation Act
NO_2	nitrogen oxide
NOAA	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
National Register	National Register of Historic Places
NRCS	Natural Resources Conservation Service
O_3	ozone
OCCP	Orange County Congestion Management Program
OCFCD	Orange County Flood Control District
OCTA	Orange County Transportation Authority
OSHA	Occupational Health and Safety
PA	Programmatic Agreement
PAC	presumed asbestos-containing materials
PAC	Public Awareness Campaign
Pb	lead
PBA	peak bedrock acceleration
PC&E	Plans, Specifications, and Estimates
pc/km/h	passenger cars per hour per lane
PEAR	Preliminary Environmental Analysis Report
PM	particulate matter
PR	Project Report
PRC	Public Resource Code
PR/ED	Project Report/Environmental Document
RAP	Relocation Assistance Program
RCCMP	Riverside County Congestion Management Program
RCFCWCD	Riverside County Flood Control and Water Conservation District
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
ROG	reactive organic gases
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCAG CTP	Southern California Association of Governments Comprehensive Transportation Plan
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Office
SIP	State Implementation Program
SO2	sulfur dioxide
SNES	Supplementary Natural Enviornment Study
STIP	State Transportation Improvement Program
sq ft	square feet
sq mi	square miles
SR-91	State Route 91

SVP	Society of Vertebrate Paleontology
SW	sound wall
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resource Control Board
TASAS	Traffic Accident Surveillance and Analysis System
TCEs	temporary construction easements
TMC	Transportation Management Centers
TMP	Traffic Management Plan
TSCA	Toxic Substances Control Act
USFWS	United States Fish and Wildlife Service
VHT	vehicle hours traveled
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
WATCH	Work Area Traffic Control Handbook
WDR	Waste Discharge Requirements
WPCP	Water Pollution Control Program

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Appendix F Cultural Resources Compliance Memo and APE Map

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Appendix G 2006 RTIP Page

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Appendix H Flood Insurance Rate Map

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Appendix I SHPO Letter

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Appendix J Air Quality Conformity Documentation

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Appendix K United States Army Corps of Engineers, Jurisdictional Delineation Concurrence Request Letter

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Jurisdictional Delineation concurrence will be obtained as part of the permitting process during final design.

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Appendix L United States Fish and Wildlife Formal Section 7 Consultation

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Appendix M Responses to Comments on the Draft IS/EA

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FORMAT OF RESPONSES TO COMMENTS

Individual points within each comment letter are numbered along the right-hand margins of each letter. Comments not requiring any response are not numbered. The responses to each comment letter immediately follow each letter and are referenced by the index numbers in the margins.

The format of the responses below is based on a unique letter and number code for each comment. The number at the end of the code refers to a specific comment within the individual letter. Therefore, each comment has a unique code assignment. For example, F-1-1 is the first substantive comment in letter F-1. “F” represents a federal agency, “1” refers to the first federal agency letter, and the other “1” refers to the first comment. “S” is for State agencies, “L” is for local agencies, “R” is for regional agencies, “O” is for organizations, and “P” is for public comments.

Substantive points within each comment letter are numbered along the right-hand margins of each letter.

INDEX OF COMMENTS RECEIVED

The following is an index list of the agencies, groups, and persons who commented on the Draft Initial Study/Environmental Assessment (IS/EA) prior to the close of the public comment period. Each comment letter received is indexed with a number below.

Transmittal letters from the State Clearinghouse to State agencies are provided at the end of this appendix.

Letter	Name	Date
	Federal Agency Comments	
F-1-1	U.S. Army Corps of Engineers, Los Angeles District	August 13, 2007
F-2-1	U.S. Department of the Interior, Fish and Wildlife	September 13, 2007
	State Agency Comments	
S-1	State of California, Native American Heritage Commission	August 20, 2007
S-2	State of California, Public Utilities Commission	February 16, 2007
S-3	State of California, Department of Conservation	September 7, 2007
S-4	Department of Toxic Substances Control	September 4, 2007
S-5	State of California, Department of Fish and Game	September 12, 2007
S-6	State Department of Parks and Recreation	September 14, 2007
	Local Agency Comments	
L-1	City of Anaheim, Planning Department	September 13, 2007
L-2	City of Yorba Linda, Community Development Department	August 31, 2007
L-3	City of Chino Hills	August 29, 2007
L-4	City of Corona, Public Works Department	August 29, 2007
	Regional Agency Comments	
R-1	Riverside County Flood Control and Water Conservation	August 14, 2007
R-2	Southern California Association of Governments	August 22, 2007
R-3	Transportation Corridor Agencies	August 21, 2007
R-4	Orange County Fire Authority	August 27, 2007
R-5	County of Orange, Planning & Development Services Dept.	August 30, 2007
	Organization Comments	
O-1	Sierra Club, Puente-Chino Hills Task Force	August 6, 2007
O-2	Wildlife Corridor Conservation Authority	August 22, 2007
O-3	Wildlife Corridor Conservation Authority	September 13, 2007
	Public Comments	
P-1	Bob Zemel	August 21, 2007
P-2	P. Nollkamper	August 21, 2007
P-3	Kirk Ladean	August 21, 2007
P-4	Arnold Gregg	August 1, 2007
P-5	Jerry Collamer	August 16, 2007
P-6	Darius Ahrar	September 4, 2007
P-7	Brittney Bond	September 4, 2007
P-8	Tom Tietz	August 21, 2007
P-9	Rod Tawasha	August 8, 2007
P-10	Steve Peters	August 3, 2007
P-11	Robert S. Zemel	August 21, 2007
P-12	Glenda Gromer	September 13, 2007
P-13	Concerned SR-91 Traveler	August 31, 2007

Letters L-2, R-1, P-6, P-7, P-10, and P-12 do not contain any comments on the Draft IS/EA.

U.S. ARMY CORPS OF ENGINEERS

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U.S. ARMY CORPS OF ENGINEERS

F-1-1

As specified in Table 1.5, Permits and/or Approval Needed (page 38), and Avoidance, Minimization, and Compensation Measure BIO-14 of the Draft IS/EA and the Final Environmental Document (FED) (page 220), a Section 404 permit will be obtained for the proposed project.

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U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

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U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

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U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

F-2-1

Indirect impacts are discussed in Section 2.16.3 of the Draft IS/EA and the FED (page 203). Cumulative impacts are discussed in Section 2.22 (page 244). The Draft IS/EA and FED found that the potential indirect effects of the project are not expected to increase habitat fragmentation or result in substantial degradation of existing wildlife corridors. Likewise, the Draft IS/EA and FED acknowledge that cumulative impacts are anticipated but that each project is subject to the mitigation requirements delineated by each natural resource agency that has jurisdiction over the area, including the United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), Regional Water Quality Control Board (RWQCB), United States Army Corps of Engineers (USACE), and State Department of Parks and Recreation. Mitigation is required through the issuance of permits or another type of regulatory actions. When these mitigation requirements are implemented, cumulative adverse impacts would not occur. Therefore, the Build Alternative would not contribute to a cumulative adverse impact to biological resources. Refer to Response to Comment F-2-2 regarding funding for mitigation.

F-2-2

Refer to the Orange County Transportation Authority (OCTA) letter addressed to Claire Schlotterbach dated September 10, 2007, in Appendix N.

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NATIVE AMERICAN HERITAGE COMMISSION

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NATIVE AMERICAN HERITAGE COMMISSION

S-1-1

A Historic Property Survey Report (HPSR) (March 2006) and First Supplemental Historic Property Survey Report (June 2007) were prepared for the project in accordance with Caltrans guidelines. This included a records search at the South Central Coast Information Center and the Eastern Information Center. Impacts to historical resources are discussed in Section 2.8.3 of the Draft IS/EA and FED (page 120).

S-1-2

The HPSR was submitted to the South Central Coastal Information Center and the Eastern Information Center in March 2006 and processed in October 2006. The First Supplemental HPSR was submitted to the Information Centers on October 11, 2007. The reports were only available for qualified archaeologist review.

S-1-3

As part of preparation of the HPSR and First Supplemental HPSR, the Native American Heritage Commission (NAHC) and Native American tribes on a list provided by the NAHC were contacted regarding potential sites in the study area. Refer to Section 2.8.2 of the Draft IS/EA and FED (page 117) regarding Native American Consultation.

S-1-4

As required by the California Department of Transportation (Caltrans) Standard Special Provisions, procedures are in place for proper handling of archaeological resources. Refer to Measure CR-1 in Section 2.8.4 of the Draft IS/EA and FED (page 121) and in Appendix D (page D-10).

S-1-5

As required by Caltrans Standard Special Provisions, procedures are in place for proper handling of potential human remains. Refer to Avoidance, Minimization, and Compensation Measure CR-1 in Section 2.8.4 of the Draft IS/EA and FED (page 121).

S-1-6

As discussed in Section 2.8.3 of the Draft IS/EA and FED (page 120), there are no remaining features of the recorded sites listed in Table 2.20 of the Draft IS/EA and FED (page 119).

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STATE OF CALIFORNIA PUBLIC UTILITIES COMMISSION

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STATE OF CALIFORNIA PUBLIC UTILITIES COMMISSION

S-2-1

Section 1.3.3.1 of the Draft IS/EA and FED (page 18) and Table 1.5: Permits and/or Approvals Needed (page 38) acknowledge that a railroad agreement is required.

S-2-2

A meeting will occur with Rail Crossing Engineering Section (RCES) staff during the final design phase of the project.

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STATE OF CALIFORNIA, DEPARTMENT OF CONSERVATION

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STATE OF CALIFORNIA, DEPARTMENT OF CONSERVATION

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STATE OF CALIFORNIA, DEPARTMENT OF CONSERVATION

S-3-1

Approximate well locations have been identified on the plans in the Draft Project Report. Specific well locations will be identified on future project plans if within Caltrans right-of-way or affected by the project.

S-3-2

The project proponents will comply with all regulatory requirements, including Section 3208.1 of the Public Resources Code regarding oil and gas wells.

S-3-3

Refer to Response to Comment S-3-2.

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STATE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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STATE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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STATE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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STATE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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STATE DEPARTMENT OF TOXIC SUBSTRANCES CONTROL

S-4-1

As discussed in Section 2.13.2 of the Draft IS/EA and FED (page 144), no hazardous waste sites were identified within the limits of the proposed project.

S-4-2

Please refer to Response to Comment S-4-1. The hazardous waste sites in the vicinity of the project site are identified in Table 2.22 of the Draft IS/EA and FED (page 145).

S-4-3

Sites in the vicinity and status are listed in Table 2.22 (page 145). Each site is subject to regulatory requirements regarding investigation, assessment, and remediation. As discussed in Section 2.13.3.1, these sites were evaluated and were found not to have likely impacted the project site.

S-4-4

The Initial Site Assessment determined that the areas that would be excavated adjacent to the roadways are potentially contaminated with aerially deposited lead (ADL). An ADL survey was conducted, and appropriate handling procedures have been identified consistent with Department of Toxic Substances Control (DTSC) requirements. Refer to Avoidance, Minimization, and Compensation Measure H-1 in Section 2.13.4 of the Draft IS/EA and FED (page 152). Consistent with Caltrans Standard Specifications, imported soils would be tested in accordance with the requirements specified in Avoidance, Minimization, and Compensation Measure H-1. Refer to Appendix D: Environmental Commitment Record (page D-18).

S-4-5

Potential hazardous materials impacts receptors during construction were evaluated in the Air Quality Analysis, and the ISA and appropriate mitigation were provided. Section 2.14 of the Draft IS/EA and FED (page 165) lists Avoidance, Minimization, and Compensation Measures required by the South Coast Air Quality Management District (SCAQMD) and Caltrans Standard Specifications during construction to protect sensitive receptors and the environment from hazardous air pollutants associated with construction vehicles, soil disturbance, and naturally occurring asbestos. Section 2.13 lists additional Avoidance, Minimization, and Compensation Measures to protect sensitive receptors from ADL, pavement markings, and asbestos-containing materials (page 152). An asbestos survey of the five bridges in the project area that would be widened as part of the project was completed on October 2, 2007.

The survey included sampling of all suspect asbestos materials that would be disturbed as part of the project. Asbestos was detected within three building material samples in the guard rail post shims of the West Prado Overhead, West Connector Overpass, and the State Route 91/State Route 71 (SR-91/SR-71) Connector. Caltrans will adhere to Standard Special Provisions with handling of all the hazardous materials identified.

S-4-6

Caltrans will adhere to its Standard Specifications for unknown hazardous materials encountered during construction.

S-4-7

There is no evidence of herbicide storage, mixing, or unlawful release within the project limits. As such, testing for herbicides was not included nor performed.

STATE OF CALIFORNIA, DEPARTMENT OF FISH AND GAME

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STATE OF CALIFORNIA, DEPARTMENT OF FISH AND GAME

S-5-1

Although some species are a "concern" with regards to the wildlife corridors, many of these species are not "Species of Special Concern" as designated by the CDFG (e.g., bobcat *[Felis rufus]*) and are not addressed in the sensitive species section of the Draft IS/EA and FED (Section 2.19, page 228). However, impacts to these species are evaluated indirectly in the wildlife corridors section (Section 2.16, page 209). Impacts to sensitive species and habitats are shown on the Vegetation Impacts figures in Appendix F of the Natural Environment Study (NES).

S-5-2

The project proponents will comply with the requirements of the Multi-species Habitat Conservation Plan (MSHCP).

S-5-3

Refer to Table 2.32 in the Draft IS/EA and FED (page 204) regarding the location of impacts.

S-5-4

Refer to Response to Comment F-2-2 and Appendix N regarding this issue.

S-5-5

Although there may be some construction impacts and incremental increases of noise and lighting, the function of the wildlife corridor by itself would not be adversely impacted by the proposed project. Since a minimum openness ratio of 0.75 (0.9 preferred)[1] is far exceeded by an estimated reduction to 2.25, adverse impacts to large mammal crossings are not expected. Since the extension of the Coal Canyon undercrossing required as part of the project would not affect other wildlife corridor limitations such as minimum height and accessibility, no adverse impacts would occur. Impacts to smaller animals at Coal Canyon would not be adverse because the project does not involve extension of the Coal Canyon culvert (refer to Table 2.32 and Figure 2-12 of the FED, pages 204 and 189). Refer to the discussion in Section 2.16 of the Draft IS/EA and FED (page 209).

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[1] Cavallaro, L.; K. Sanden; J. Schellhase; and M. Tanaks. 2005. Designing Road Crossings for Safe Wildlife Passage: Ventura County Guidelines. M.S. Group Project, University of California, Santa Barbara.

S-5-6

It is assumed that the comment is referring to Table 2.34 (page 211 of the Draft IS/EA) and not 3.34. Table 2.32 (page 220 of the Draft IS/EA) summarizes the project impacts to natural plant communities. Table 2.34 summarizes the project impacts to jurisdictional waters. All of the riparian natural communities listed in Table 2.32 may not be subject to CDFG jurisdiction. Table 2.32 shows a total of 0.21 hectare of impacts to riparian communities (mulefat scrub, cottonwood-willow riparian scrub, and sycamore riparian woodland), which is consistent with the 0.21 hectare of impacts to CDFG riparian, as shown in Table 2.34. Table 2.32 shows 0.42 hectare of temporary impacts to riparian communities, and Table 2.34 shows 0.35 hectare of temporary impacts to CDFG riparian communities. These numbers are different, because 0.07 hectare of the riparian community may not be subject to CDFG jurisdiction. Please note that impact areas have been revised in the FED as discussed below.

As required by the USACE for submittal of a Section 404 Clean Water Act permit application, a new Jurisdictional Delineation was prepared in October 2007 based on the USACE guidance issued in December 2006 and June 2007. The revised impacts to USACE and CDFG jurisdictional waters are provided in the Supplementary NES (November 2007) and in the table below (Table 2.35, page 221 of the FED).

Project Segment	Orange County (acres)	Riverside County (acres)	Total (acres)
USACE Waters of U.S. (Permanent)	0.100	0.198	0.298
USACE Waters of U.S. (Temporary)	0.083	0.085	0.168
USACE Waters of U.S. Total	**0.183**	**0.283**	**0.466**
USACE Wetland (Permanent)	0.051	0.002	0.053
USACE Wetland (Temporary)	0.002	0.008	0.010
USACE Wetland Total	**0.053**	**0.010**	**0.063**
USACE Total	***0.236***	***0.293***	***0.529***
CDFG (Permanent)	0.363	0.292	0.655
CDFG (Temporary)	0.131	0.343	0.474
Total CDFG	***0.494***	***0.635***	***1.129***
MSHCP Riparian/Riverine Habitat (Permanent)	N/A	0.139	0.139
MSHCP Riparian/Riverine Habitat (Temporary)	N/A	0.302	0.302
MSHCP Riparian/Riverine Habitat Total	***N/A***	***0.441***	***0.441***

As part of the Formal Section 7 Consultation process, USFWS requested a differentiation of impact areas within Wardlow Wash and outside of Wardlow Wash. The following table provides information related to this issue.

Area of Impact	Permanent Impacts (acres)
Wardlow Wash	
USACE	
Wetland	none
Non-wetland	0.017
CDFG	
Streambed	0.017
Riparian Vegetation	0.027
MSHCP	0.044
Outside Wardlow Wash	
USACE	
Wetland	0.053
Non-wetland	0.281
CDFG	
Streambed	0.253
Riparian Vegetation	0.353
MSHCP	0.095

Final habitat restoration and/or enhancement will be ultimately determined by the resource agencies via permit processes. BIO-11 (Page 213) specifies a minimum of 3:1 for permanent impacts and 2:1 for temporary impacts to coastal sage scrub (CSS). BIO-16 (page 222) is a general measure that covers the requirements of a Habitat Mitigation Monitoring Plan. It merely states that impacted riparian will be restored and/or enhanced at a minimum 1:1 ratio. BIO-14 and BIO-15 (page 222) of the FED have been revised to specify a mitigation ratio of 5:1 for permanent impacts to Fresno Canyon/Wardlow Wash and federal wetlands, and a 3:1 mitigation ratio for permanent impacts to jurisdictional areas outside of Fresno Canyon/Wardlow Wash. As discussed in the NES (Page 2-12), it was proposed and tentatively agreed that temporary impacts to jurisdictional areas be mitigated at 1:1. Since the mitigation ratios in BIO-11, BIO-14, and BIO-15 are greater than 1:1 in BIO-16, that requirement is satisfied.

S-5-7

BIO-14 and BIO-15 of the FED indicate a mitigation ratio of 5:1 for permanent impacts to Fresno Canyon/Wardlow Wash, one of the two wildlife corridors, and a 3:1 mitigation ratio for permanent impacts to jurisdictional areas outside of Fresno Canyon/Wardlow Wash. Refer to Response to Comment S-5-6. Measure BIO-15 indicates that a Streambed Alteration Agreement will be obtained.

S-5-8

The Vegetation Impacts figures in Appendix F of the NES identify the vegetation communities in the Biological Study Area (BSA) as well as the locations of

temporary and permanent impacts. Refer to Response to Comment S-5-6 regarding revised impacts to USACE and CDFG jurisdiction. As requested by CDFG during the August 23, 2007, meeting, a table specifically addressing impacts to State and federally endangered species and habitat is provided below. This table is included in Appendix L.

Habitat Type	Temporary Impacts (acres)			Permanent Impacts (acres)			Total Impacts (acres)
	OC	Riverside	Total Temporary Impacts	OC	Riverside	Total Permanent Impacts	
Potential Occupied LBV Habitat	0.00	0.20	**0.20**	0.00	0.03	**0.03**	**0.23**
Other Potential LBV Habitat	0.00	0.09	**0.09**	0.00	0.07	**0.07**	**0.16**
Total Potential LBV Habitat	0.00	0.29	**0.29**	0.00	0.10	**0.10**	**0.39**
CAGN Critical Habitat	0.40	1.07	**1.47**	0.10	2.83	**2.93**	**4.40**
Other CSS (non Critical Habitat)	0.10	0.64	**0.74**	0.05	2.71	**2.76**	**3.50**
Total CSS	0.50	1.71	**2.21**	0.15	5.54	**5.69**	**7.90**

LBV = least Bell's vireo
CAGN = California gnatcatcher
CSS = coastal sage scrub

S-5-9

Mitigation Measure BIO-10 (page 213) has been revised to indicate that coast live oak trees will be planted within the Chino Hills State Park.

Impacts to CSS vegetation within the Riverside County portion of the project are considered a covered activity by the MSHCP and will be addressed through Section 13.8 of the MSHCP Implementation Agreement. Impacts to CSS vegetation within the Orange County portion of the project will be mitigated through the restoration and/or enhancement of vegetation within Chino Hills State Park. These areas are being coordinated with the State Department of Parks and Recreation. Measure BIO-11 (page 213) has been revised in the FED to include mitigation within Chino Hills State Park.

Compensatory mitigation for impacts to riparian vegetation within the Riverside and Orange County portions of the project will be secured through the purchase of restoration credits from the established Santa Ana Watershed Association (SAWA) in-lieu fee program. Options for wetland mitigation are limited, but would include

off-site mitigation acquisition, and/or contribution toward an existing wetland restoration program acceptable to the regulatory agencies.

S-5-10

The cumulative project list for biological impacts was limited to planned and reasonably foreseeable transportation projects on SR-91 and development projects on the south side of SR-91, where this project's natural resources impacts would occur. The future expansion of westbound SR-91 was included as a cumulative project.

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STATE DEPARTMENT OF PARKS AND RECREATION

(Slip Sheet)

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STATE DEPARTMENT OF PARKS AND RECREATION

S-6-1

A site visit will be conducted during final design to coordinate Temporary Construction Easements (TCEs) with the State Department of Parks and Recreation.

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CITY OF ANAHEIM PLANNING DEPARTMENT

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CITY OF ANAHEIM PLANNING DEPARTMENT

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CITY OF ANAHEIM PLANNING DEPARTMENT

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CITY OF ANAHEIM PLANNING DEPARTMENT

L-1-1

Caltrans acknowledges that cities with boundaries bordering Caltrans right-of-way along SR-91 are stakeholders for this project. Caltrans is committed to context-sensitive design solutions. Context-Sensitive Design Solutions include landscaping along Caltrans right-of-way. Caltrans District 8 has a 215/91 Corridor Master Plan (September 5, 2006). Caltrans District 12 is currently developing an SR-91 Master Landscape Plan in concert with the City of Anaheim and its consultant. Cities with boundaries along the SR-91 right-of-way within District 12 are invited to participate in the preparation and development of this Master Landscape Plan. Master Landscape Plans are regularly and routinely updated. Cities interested in participating should contact the Landscape Architecture unit in the corresponding Caltrans District for more information about this collaborative coordination effort. It is Caltrans policy to work with the local agencies to develop project landscape plans and to provide them with the opportunity to comment on the plans. A postcard will be sent to the requested contact announcing the completion of the FED and noting viewing locations.

L-1-2

Abandoned signs, if determined obsolete, will be removed as part of this project. Determination as to whether these signs are necessary for freeway operation will be determined during the final design phase of the project.

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CITY OF YORBA LINDA

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CITY OF CHINO HILLS

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CITY OF CHINO HILLS
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CITY OF CHINO HILLS

L-3-1

When the east-to-north SR-91/SR-71 loop ramp is closed during nighttime and weekends, travelers normally transitioning to northbound SR-71 would have to proceed beyond the interchange, exit at Serfas Club Drive, turn left, and take SR-91 west to the SR-71 northbound connector. Therefore, there would be a delay for traffic normally using the east-to-north SR-91/SR-71 loop ramp during construction in this area.

As discussed in Section 2.6.4 (page 91), a Traffic Management Plan (TMP) will be prepared to identify any additional alternative routes that may be used to accommodate traffic diversion resulting from the closures during construction of the proposed project (Measure T-1 of the Draft IS/EA and FED, page 91). Caltrans prepares TMPs in accordance with Deputy Directive 60 (DD-60) to minimize motorists' delays when constructing projects or performing other activities on the State highway and freeway systems. This is accomplished without compromising public or worker safety or the quality of the work being performed. TMP implementation results in minimized traffic delays and reduced accidents. Each Caltrans District employs a District Traffic Manager (DTM) who oversees project-specific TMPs. DTMs utilize traffic management strategies, including demand management and incident management to assure expeditious and expedient alternate routing for emergency responders and their vehicles. As discussed in Measure T-1, the elements of the TMP will also include: off peak-hour closures, enhanced California Highway Patrol enforcement, a Public Awareness Campaign, tow truck service, coordination with adjacent projects, a contingency plan, and a subsidized or free vanpool service for commuters. The development of the TMP will be coordinated among all the local jurisdictions, including the City of Chino Hills.

L-3-2

Advanced notification of road closures will be addressed in the TMP during final design. The City of Chino Hills contact identified in the letter will be added to the contact list for the design phase and to the contact list for the public awareness campaign during construction as indicated in the ECR in Appendix D of the FED (page D-33).

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CITY OF CORONA, PUBLIC WORKS DEPARTMENT

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CITY OF CORONA, PUBLIC WORKS DEPARTMENT
(Sheet 2 of 2)

CITY OF CORONA, PUBLIC WORKS DEPARTMENT

L-4-1

The development of the TMPs will be coordinated among all the stakeholders, including the City of Corona. The City contact person will be added to the contact list during the design phase and to the public awareness campaign contact list during construction as documented in the ECR in Appendix D of the FED (page D-33).

L-4-2

Input from affected property owners will be obtained before final design to confirm whether sound walls will be constructed. As a stakeholder and a member of the Project Development Team (PDT), the City of Corona will also have an opportunity to provide input on the design of soundwalls.

L-4-3

Advanced notification of road closures will be addressed in the TMP during final design. Refer to Responses to Comments L-3-1 regarding TMP elements and L-4-1 regarding City notification.

L-4-4

If reclaimed water and appropriate connections are made available at the project limits/Caltrans right-of-way by the City of Corona, the City's reclaimed water will be utilized in landscape irrigation to the extent possible.

L-4-5

Refer to Response to Comment L-1-1 for additional information regarding the development of the landscape plans.

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RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

(Slip Sheet)

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SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

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SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

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SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

R-2-1

The date of the Southern California Association of Governments (SCAG) City Projects was corrected to 2004 in the FED, and the erroneous comma was removed from the City of Anaheim projections in Table 2.5 (page 63). The Western Riverside Council of Governments Population Projections of 2006 are shown in the table below for reference.

Riverside County Projections – 2006 (RCP06)
WRCOG Projections for Riverside County and City of Corona-

Riverside County Totals	2005	2030
Population	1,503,383	2,414,256
Housing Units	503,116	841,388
Employment	484,985	1,005,923

City of Corona	2005	2030
Population	145,628	165,260
Housing Units	44,365	50,593
Employment	63,892	97,751

The projections in the preceding tables are from the Western Riverside County of Governments (WRCOG) 2006 forecast. The statistics forecast by SCAG and those forecast by WRCOG are derived from different models and methods. Because the proposed project is a regional project, covering two counties and many local jurisdictions in each county, the numbers forecast by SCAG were appropriately utilized in the Draft IS/EA as a standard demographic statistical source for the growth analysis within the proposed project study area. Therefore, the tables in the FED have not been changed.

R-2-2

As stated in Section 2.9, Hydrology and Floodplains (page 122), the part of the project segment of SR-91 near Coal Canyon is partly within the 100-year Flood Zone A. There are no other areas subject to a 100-year flood within the project area.

R-2-3

All measures in Appendix D, Environmental Commitment Record, will be implemented and monitored, as required by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

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TRANSPORTATION CORRIDOR AGENCIES

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TRANSPORTATION CORRIDOR AGENCIES

R-3-1

The requested Transportation Corridor Agencies (TCA) contact person will be added to the contact list during the design phase and to the public awareness campaign contact list during construction as documented in the ECR in Appendix D of the FED (page D-33).

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ORANGE COUNTY FIRE AUTHORITY

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ORANGE COUNTY FIRE AUTHORITY

R-4-1

For the proposed project, Caltrans and Orange County Transportation Authority (OCTA) will implement the standard notification process, as indicated in the comment. Detours and road closures will also be posted on the agencies' Web sites. Refer to Response to Comment L-3-1 regarding elements of a standard TMP related to detours, road closures, public awareness, and emergency response.

R-4-2

There are no controlled intersections within the project limits; therefore, Optical Preemption Devices are not applicable.

R-4-3

The project proponents acknowledge the necessity of providing adequate emergency response routes during construction of the proposed project. A comprehensive TMP will be developed and approved by Caltrans during final design. This TMP will be coordinated with the emergency services providers in the vicinity of the project. Refer to Avoidance, Minimization, and Mitigation Measure T-1 in the ECR in Appendix D of the FED. Refer to Response to Comment L-3-1 regarding standard TMP elements.

R-4-4

The requested contact person has been added to the contact list for the design phase and to the contact list for the public awareness campaign during construction as documented in the ECR in Appendix D of the FED (page D-33).

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COUNTY OF ORANGE, PLANNING AND DEVELOPMENT SERVICES DEPARTMENT

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COUNTY OF ORANGE, PLANNING AND DEVELOPMENT SERVICES DEPARTMENT

R-5-1

Comment noted; the requested contact will be added to the contact list for the design phase and to the contact list for the public awareness campaign during construction.

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SIERRA CLUB, PUENTE-CHINO HILLS TASK FORCE

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SIERRA CLUB, PUENTE-CHINO HILLS TASK FORCE

O-1-1

Coal Canyon has been identified as a wildlife corridor with high potential in the Draft IS/EA and FED. Project impacts to this corridor and other potential wildlife crossings and associated avoidance, minimization, and compensation measures are discussed in Section 2.16, Natural Communities, of the Draft IS/EA and FED (page 199). Refer to BIO-1 through BIO-18 in the ECR in Appendix D of the FED (page D-25).

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WILDLIFE CORRIDOR CONSERVATION AUTHORITY

(Sheet 1 of 2)

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

(Sheet 2 of 2)

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

O-2-1

The comment period on the Draft IS/EA was extended until September 13, 2007. The requested contact person has been added to the contact list for the design phase and to the contact list for the public awareness campoaign during construction as documented in the ECR in Appendix D of the FED (page D-33). A postcard will be sent to the requested contact announcing the completion of the FED and noting viewing locations.

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WILDLIFE CORRIDOR CONSERVATION AUTHORITY

(Sheet 1 of 6)

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

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WILDLIFE CORRIDOR CONSERVATION AUTHORITY

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WILDLIFE CORRIDOR CONSERVATION AUTHORITY

(Sheet 4 of 6)

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

(Sheet 5 of 6)

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

(Sheet 6 of 6)

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

O-3-1

Development is not planned in the existing open space and preserve areas. Therefore, cumulative biological resource impacts were focused predominantly on past, present, and reasonably foreseeable future actions along SR-91. Because specific project designs and impacts for future actions are unknown, cumulative impacts analysis is qualitative.

The Build Alternative includes appropriate measures that substantially avoid or reduce the impact of the project on biological resources, including habitat restoration and compensation. Consultation with resource agencies for impacts is currently being conducted to determine specific measures to enhance existing and potential wildlife corridors within the project alignment such as placement of fencing to funnel wildlife into useable corridors and to prevent wildlife from accessing SR-91. Therefore, the Build Alternative is not expected to result in an adverse, indirect project-specific or cumulative impact to wildlife corridors. Results have been outlined in the Biological Opinion issued by the USFWS as part of the FED (Appendix L). Therefore, the Build Alternative is not expected to result in an adverse, indirect project-specific or cumulative impact to wildlife corridors.

O-3-2

As discussed in the Draft IS/EA and FED, the following five bridges would be widened: the Coal Canyon Undercrossing, the County Line Culvert, the West Prado Overhead (over the Burlington Northern Santa Fe [BNSF] railroad), the SR-91/71 Separation, and the West Connector Undercrossing. The wildlife corridor potential is high at the Coal Canyon Undercrossing, moderate at the County Line Culvert, low at the West Prado Overhead, low at the Route 91/71 Separation, and high at the West Connector Undercrossing. Refer to Table 2.32 and Figure 2.12 of the the FED (pages 204 and 189) for a table and figure of all culverts/ undercrossings in the project area, as well as a description of which would be extended as part of the project.

O-3-3

Refer to Table 2.32 and Figure 2-12 of the FED for a table and figure of all culverts/undercrossing in the project area, as well as a description of which will be widened as part of the project.

O-3-4

Many studies have shown that structural dimension (i.e., openness ratio) is important for large and medium animals.[1] It allows for a quantitative analysis of existing and potential wildlife corridors. Qualitative features such as vegetation cover, highway fencing, and wildlife sign and observation were also considered.

Although small and medium animals are not specifically referred to in the Draft IS/EA and FED, they were taken into account for the analysis. Small and medium animals can typically use a smaller openness ratio than larger animals and prefer different amounts of cover. Small and medium animals typically use a mixture of crossing structure types, but studies suggest they prefer natural vegetation surrounding the approach and within the interior of the crossing. Large animals typically prefer large, open structures such as bridge underpasses and box culverts with an open field of view. Within the project area, there is a variety of wildlife corridors suitable for a variety of wildlife species. Each one was analyzed based on type, size and potential for wildlife use. A more complete wildlife corridor analysis is included in the NES, the SNES, and the FED (page 209).

O-3-5

Within the project alignment, there is a variety of wildlife corridors suitable for a variety of wildlife species. Each one was analyzed based on type, size and potential for wildlife use. A more complete wildlife corridor analysis is included in the NES. Refer to the FED (page 209) and the SNES for a discussion of all the wildlife crossings.

O-3-6

Refer to Response to Comment O-3-1.

The proposed project is a lane addition on an existing freeway; it does not introduce vehicles into an area that is not currently used for transportation purposes. Traffic will increase in 2030 with or without the proposed project due to expected population growth (Table 2.15 of the Draft IS/EA and FED, page 86). The proposed project would reduce congestion and traveling time and is expected to reduce accident rates (Section 2.6.3.1 of the Draft IS/EA and FED, page 88).

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[1] Cavallaro, L.; K. Sanden; J. Schellhase; and M. Tanaks. 2005. Designing Road Crossings for Safe Wildlife Passage: Ventura County Guidelines. M.S. Group Project, University of California, Santa Barbara.

As shown in Figure 2-3 of the Draft IS/EA and FED (page 49), the majority of the land surrounding the project site is designated as open space and includes Chino Hills State Park, Cleveland National Forest, Santa Ana River and Trail, Green River Golf Club, and Featherly Regional Park. These areas would not be subject to future development. Therefore, other than the projects identified in Table 2.38 of the Draft IS/EA and FED (page 246), future reasonable and foreseeable development would consist of redevelopment and/or reconstruction.

As discussed in Section 2.14 (page 155), global climate change is a cumulative impact, and the project's contribution to this impact is evaluated. Because the proposed project would reduce congestion, it would reduce carbon dioxide emissions. Therefore, the proposed project would contribute to a cumulative reduction in greenhouse gases in the project area.

O-3-7

The statement in the Biological Environment section of the Draft IS/EA and FED (page 187) regarding the boundaries of the BSA to include the permanent and temporary impact areas is correct because this is the area of project-related biological resources impacts. The defined cumulative study area listed in Section 2.22.2 of the Draft IS/EA and FED that includes adjacent cities is the cumulative study area for some environmental topics. It should be noted that the cumulative study area for each environmental topic varies. For clarification, the following sentence has been added to the beginning of the first paragraph under Biological Resources of Section 2.22.3.1 (page 251): "The cumulative study area for biological resources includes the SR-91 alignment and the areas adjacent to SR-91, which include surrounding native habitat as well as the wildlife crossings below the freeway."

O-3-8

Refer to Response to Comment O-3-1 regarding the assessment of future projects. The specific impacts of future SR-91 projects would be disclosed in the environmental documents, as those projects are defined through the planning and design process. The Draft IS/EA and FED present the impacts and cumulative impacts of the SR-91 Eastbound Lane Addition Project. As stated in Section 2.22 (page 251), the Build Alternative, and the other projects would contribute to a long-term loss of resources. The contribution of each project will be evaluated in each individual environmental document.

The Build Alternative includes appropriate measures that substantially avoid or reduce the impact of the proposed project on biological resources, including habitat restoration and compensation. Each project is subject to the mitigation requirements delineated by each natural resource agency that has jurisdiction over the area, including the USFWS, CDFG, RWQCB, USACE, and State Department of Parks and Recreation.

O-3-9

Refer to Response to Comment O-3-7 regarding the cumulative study area. Future projects that involve additional road widening may result in the loss of riparian and CSS habitats and would increase the surface area for highway runoff, potentially increasing the concentrations of certain pollutants. Future projects would be required to implement appropriate design pollution prevention and treatment Best Management Practices (BMPs) to target potential storm water runoff pollutants during project operation, consistent with the Caltrans Storm Water Management Program. Under federal regulations, all new development projects are required to incorporate Design Pollution Prevention BMPs and Treatment BMPs (by development category) to improve existing water quality. In addition, each project is subject to the requirements delineated by each natural resource agency that has jurisdiction over the area, including the USFWS, CDFG, RWQCB, USACE, and State Department of Parks and Recreation. The proposed project includes appropriate measures that substantially avoid or reduce the impact of the project on biological resources and water quality, including habitat restoration and compensation, bioswales, and water quality basins for treatment of urban runoff. Therefore, the project would not result in an adverse project-specific or cumulative impact to biological resources, hydrology, or water quality.

O-3-10

As discussed in Section 2.22 (page 251), future projects have the potential to encroach into suitable habitat for least Bell's vireo (LBV), coastal California gnatcatcher (CAGN), and federally listed plant species. The Build Alternative and the other projects would contribute to a long-term loss of resources. However, the Build Alternative includes appropriate measures that substantially avoid or reduce the impact of the proposed project on biological resources, including habitat restoration and compensation. Each project is subject to the mitigation requirements delineated by each natural resource agency that has jurisdiction over the area, including the USFWS, CDFG, RWQCB, USACE, and State Department of Parks and Recreation.

Therefore, the project would not result in an adverse project-specific or cumulative impact to sensitive wildlife species.

O-3-11

Refer to Responses to Comments S-5-5, O-3-1, O-3-7, O-3-8, and O-3-9 regarding the wildlife movement impacts, cumulative study area, and cumulative analysis. Refer to Responses to Comments S-5-6, S-5-7, and S-5-9 regarding habitat mitigation. This comment recommends that Measure M funds or some other funding source be allocated to fund habitat acquisition and restoration directly tied to the Puente-Chino Hills Wildlife Corridor within a one-mile radius of the project segment, or as otherwise defined by the CDFG. The proposed project would have no impact on actual habitat within the Puente-Chino Hills Corridor. The proposed project would have a temporary impact during construction on movement between the Santa Ana Mountains and the Chino Hills. Refer to Response to Comment F-2-2 and Appendix N for further information regarding Measure M funds.

O-3-12

Comment noted; refer to Responses to Comments O-3-1 through O-3-11. The requested contact will be added to the contact list for the design phase and to the contact list for the public awareness campaign during construction, as indicated in the ECR in Appendix D of the FED (page D-33).

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BOB ZEMEL
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BOB ZEMEL

P-1-1

The address provided by Mr. Zemel at the Public Meeting is not a new address and the Public Notice/Notice of Intent was mailed to this address on July 28, 2007, along with other owners/occupants within a 0.5-mile radius of the project site. The requested contact will be added to the contact list for the design phase and to the contact list for the public awareness campaign during construction.

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P. NOLLKAMPER

(Slip Sheet)

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P. NOLLKAMPER

P-2-1

Additional routes to SR-91 are not part of the scope of the proposed project.

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KIRK LAPEAN
(Slip Sheet)

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KIRK LADEAN

P-3-1

Current travel rates were not analyzed in the traffic study. The traffic study compared the design year condition (2030) with and without the project. In 2030, the proposed project will improve the vehicle hours traveled (VHT) for the Coal Canyon Road to Green River Road segment, for an improvement of 16 percent. That is, fewer hours will be expended, which equates to a reduced travel time. An improvement of 13 percent is identified for the Green River to SR-71 segment. The segment from the northbound State Route 241 (SR-241) connector to Coal Canyon Road will not have any improvement. The vehicle hours traveled are discussed in detail in Chapter 2, Section 2.6, Traffic and Transportation, Table 2.16 (page 89), *Vehicle Hours Traveled Analysis Comparison,* in the Draft IS/EA and FED.

P-3-2

As discussed in Section 1.2.1 of the Draft IS/EA and FED (page 9), the objectives of the project are to relieve the chokepoint at the merge of northbound SR-241 and eastbound SR-91 while improving operations and minimizing right-of-way acquisitions. This would be achieved by continuing the lane at the SR-241/SR-91 merge through to the SR-91/SR-71 interchange (effectively adding a lane) as well as widening eastbound lanes and shoulders to standard widths. Other projects are being proposed along SR-91 that would add lanes (Table 2.37: Cumulative Projects, of the Draft IS/EA and Table 2.38 of the FED, page 246); these projects each have a specific purpose and need as required under CEQA and NEPA. Please refer to Chapter 1, Proposed Project, Section 1.1, Introduction, of the Draft IS/EA and FED (page 16) for additional information.

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ARNOLD GREGG

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ARNOLD GREGG

P-4-1

The demographics show that the Cities of Anaheim, Corona, and Yorba Linda will all have an increase in population by 2030. Orange County residents, as well as Riverside County residents, will benefit from the improvements of the proposed project. Please refer to Chapter 2, Section 2.2.2, Affected Environment (page 62), and Chapter 1, Proposed Project, Section 1.2.1, Project Purpose, of the Draft IS/EA and FED (page 9).

P-4-2

The vehicular noise impacts within the study area include an increase of 1 A-weighted decibel (dBA) from the existing noise levels for 12 of the 35 receptor locations monitored in the noise study. Thirteen receptor locations will have noise levels that will approach or exceed the Noise Abatement Criteria (NAC). These 13 locations will require the construction of sound walls if they are found to be reasonable and feasible during final design.

The air quality study states that although the traffic volumes would be expected to increase between 3.3 to 3.5 percent on eastbound SR-91 by 2030 with the proposed project improvements of: (1) decreased congestion; (2) a decrease in stop-and-go conditions; and, (3) faster travel speeds through the project area, these factors would result in a decrease of air pollutants emitted by the motor vehicles on the project segment, as compared to the No Build Alternative. Also, relieving congestion by improving the operation of the freeway and the travel times will lead to an overall reduction of greenhouse gas (GHG) emissions.

Please refer to Chapter 2, Sections 2.15, Noise, Table 2.27 – *Predicted Traffic Noise Impacts* (page 178), 2.14, Air Quality (page 164), and 2.6, Traffic and Transportation (page 88), of the Draft IS/EA and FED.

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JERRY COLLAMER
(Sheet 1 of 4)

JERRY COLLAMER
(Sheet 2 of 4)

JERRY COLLAMER
(Sheet 3 of 4)

JERRY COLLAMER
(Sheet 4 of 4)

JERRY COLLAMER

P-5-1

A commuter rail system is not part of the proposed project.

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DARIUS AHRAR

(Slip Sheet)

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Brittney Bond
(Slip Sheet)

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Tom Tietz

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TOM TIETZ

P-8-1

The choice of pavement has not been determined yet and will take place during preparation of contract plans for the facility. Caltrans Materials and Research Branch has provided Design with two alternatives, one for a Portland cement concrete (PCC) section and one for asphalt concrete (AC). Both assume the same specified lifetime for the pavement section, based on an adjusted number of single-axle loadings over the pavement lifetime. While the choice has not yet been made between the two alternatives, the choice will be made considering a lifetime cost analysis, which includes present cost, as well as future maintenance costs. This decision will also consider consistency and compatibility with existing pavement, soil conditions, and projected traffic volumes, including truck percentages.

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ROD TAWASHA
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ROD TAWASHA

P-9-1

The suggested improvement is not within the scope of this proposed project.

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STEVE PETERS

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ROBERT S. ZEMEL
(Sheet 1 of 6)

ROBERT S. ZEMEL
(Sheet 2 of 6)

ROBERT S. ZEMEL
(Sheet 3 of 6)

ROBERT S. ZEMEL
(Sheet 4 of 6)

ROBERT S. ZEMEL
(Sheet 5 of 6)

ROBERT S. ZEMEL
(Sheet 6 of 6)

ROBERT S. ZEMEL

P-11-1

Refer to Chapter 3 of the FED (page 256) for detailed information regarding the public notification and review process.

P-11-2

Refer to Response to Comment P-11-1.

P-11-3

Refer to Response to Comment P-11-1.

P-11-4

Refer to Response to Comment P-11-1.

P-11-5

The access road will be designed during the final design phase of the project, which will replace in-kind the existing facility located in existing Caltrans right-of-way to the maximum extent practicable given the physical constraints of the location. The property owner may request additional improvements at his or her own expense by obtaining an encroachment permit for proposed changes within Caltrans right-of-way, and the property owner will be responsible for obtaining any and all other permits required for these changes. Improvements above and beyond replacing private property in-kind such as retaining walls or extensive grading represent a betterment, which may be considered a gift of public funds. As part of the project, the existing drainage structure would be lengthened to accommodate the proposed freeway widening in the eastbound direction. The existing condition provides a turn from the existing culvert onto the private access road adjacent to the freeway. The project would include the area south of the culvert. The proposed project will not adversely impact the turning radius on the access road and may improve it.

P-11-6

Refer to Response to Comment P-11-1.

P-11-7

Under CEQA and NEPA, projects are evaluated to compare the proposed project condition to the existing condition to determine whether the project would result in adverse impacts. As part of the project, SR-91 would be expanded to the south, and the access road would accordingly be moved farther to the south. Preliminary studies indicate that the existing conditions related to headlight glare would not change

substantially with implementation of the proposed project, and no mitigation measures would be required. Nonetheless, it is Caltrans policy to improve safety/operational conditions associated with highway projects where feasible. Therefore, during the final design phase Caltrans will apply Caltrans design standards and guidelines to this issue.

P-11-8

As discussed in Section 2.15, Noise, of the Draft IS/EA and FED (page 170), a noise impact analysis was conducted for the proposed project in accordance with the *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects.* Sound walls are proposed for areas where noise levels at sensitive receptor locations approach or exceed the Federal Highway Administration (FHWA) noise abatement criteria. No noise abatement is required in the vicinity of the access road; there are no sensitive receptors in the vicinity.

P-11-9

Additional comments were accepted until the close of the public comment period on September 13, 2007.

GLENDA GROMER
(Slip Sheet)

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CONCERNED SR-91 TRAVELER

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CONCERNED SR-91 TRAVELER

P-13-1

The Preliminary Geotechnical Investigation Report was prepared by a qualified and credentialed geotechnical engineer registered in the State of California in support of the Draft IS/EA in order to determine whether the proposed project was feasible and to identify measures to address geotechnical issues. A comprehensive Geotechnical Design Report (GDR) will be prepared during final design to adequately address all the aspects of the design. Refer to Avoidance and Minimization Measures GS-1 throught GS-7 in the ECR in Appendix D of the FED (page D-12).

As required by the Highway Design Manual, a Geotechnical Design Report (GDR) is prepared for all projects that involve design for cut slopes, embankments, earthwork, landslide remediation, retaining walls, groundwater studies, erosion control features, subexcavation, and any other studies involving geotechnical investigations and engineering geology. The GDR is to conform to the "Guidelines for Geotechnical Reports," which is prepared by the Office of Structural Foundations. The Caltrans Headquarters Geotechnical Services Section reviews and approves GDRs.

P-13-2

The Draft IS/EA was prepared in accordance with Caltrans guidelines that incorporate the requirements of CEQA and NEPA. Caltrans has determined that the Draft IS/EA is sufficient to support a Mitigated Negative Declaration (MND). This comment does not raise any specific issues regarding the Draft IS/EA.

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STATE CLEARINGHOUSE AND PLANNING UNIT

(Sheet 1 of 3)

STATE CLEARINGHOUSE AND PLANNING UNIT
(Sheet 2 of 3)

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(Sheet 3 of 3)

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STATE CLEARINGHOUSE AND PLANNING UNIT

(Sheet 1 of 2)

STATE CLEARINGHOUSE AND PLANNING UNIT

(Sheet 2 of 2)

Appendix N OCTA Letter Regarding Renewed Measure M Mitigation Commitments

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