

Westbound On-Ramp at Grand Avenue/State Route 60 Interchange Improvements Project

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7 – LA – State Route 60 (PM R23.87/R24.48)
EA 255100

Mitigated Negative Declaration/ Finding of No Significant Impact



Prepared by the
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 Caltrans under its assumption of responsibility pursuant to 23 USC 327.



March 2011

The California Department of Transportation Is Proposing to
Improve the Westbound On-Ramp at the Grand Avenue/SR-60 Interchange
(post mile R23.87 to post mile R24.48) in the City of Industry

Initial Study/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

Oct 29, 2010

Date of Approval



Ronald Kosinski
Deputy District Director
Division of Environmental Planning, District 7
California Department of Transportation

MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to construct a direct westbound on-ramp to State Route 60 at the Grand Avenue interchange, which is located in the City of Industry, Los Angeles County.

Determination

Caltrans has prepared an initial study for this project and, following public review, has determined from this study that:

1. The proposed project would have no effect on coastal zones, wild and scenic rivers, parks/recreational facilities, growth, farmland/timberlands, environmental justice, or noise;
2. The proposed project would have no significant effect on land use, community character and cohesion, relocations and real property acquisition, utilities/emergency services, transportation/traffic, aesthetics/visual resources, hazardous materials, or plant species; and
3. The proposed project would have no significantly adverse effect on cultural resources, hydrology and floodplains, water quality and stormwater runoff, geology/soils/seismicity/topography, paleontology, air quality, natural communities, wetlands and other waters, animal species, threatened and endangered species, or invasive species because the mitigation measures listed below would reduce potential effects to a level of insignificance.

Mitigation Measures

The proposed project's mitigation measures are summarized below and detailed in Chapter 2 of the initial study/environmental assessment as well as the Environmental Commitments Record (Appendix D).

BIOLOGY

The construction limits shall be clearly defined on the construction drawings. Equipment shall access the site from the east end of the creek. A qualified biological monitor shall flag and stake the construction limits in the field in conjunction with the contractor. Permanent impacts on waters of the United States shall be offset through replacement within a section of Diamond Bar Creek. Should nighttime construction within and/or adjacent to the Diamond Bar Creek riparian corridor occur during the bird nesting season, nighttime lighting attenuation measures shall be implemented. New permanent lighting installed along the on-ramp shall be hooded; low-voltage lighting shall be used to limit light spillover into adjacent areas.

CULTURAL RESOURCES

If human remains are exposed during construction, construction must halt in the area of the discovery of human remains, the area must be protected, and consultation and treatment must occur as prescribed by law.

GEOLOGY

To reduce the potential for localized slope failures during construction, the locations of excavations in native soils shall be evaluated by the project geologist and geotechnical engineer prior to and during construction.

WATER QUALITY/STORMWATER RUNOFF

As part of the proposed project, structural treatment-control BMPs and non-stormwater source-control BMPs shall be implemented.

A biofiltration swale is proposed along the new on-ramp.

RELOCATIONS AND REAL PROPERTY ACQUISITION

After closure of the driveway from Grand Avenue, if it is determined that the remaining access points would be inadequate per emergency fire code standards, additional access would be provided from Old Brea Canyon Road, and a mountable curb for emergency vehicle access from Grand Avenue could be constructed.



Ronald J. Kosinski
Deputy District Director, District 7
California Department of Transportation



Date

CALIFORNIA DEPARTMENT OF TRANSPORTATION

FINDING OF NO SIGNIFICANT IMPACT

FOR

Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project

07-LA-60 PM R23.87/R24.48

The California Department of Transportation (Caltrans) has determined that the Build Alternative for the proposed project will have no significant impact on the human environment. The Build Alternative includes adding a direct west-bound on-ramp to State Route 60 from the Grand Avenue Interchange and other minor improvements along Grand Avenue such as additional left turns and drainage improvements.

The 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 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 U.S.C. 327.

March 25, 2011

Date



Ron Kosinski
Deputy District Director, District 7
Division of Environmental Planning
California Department of Transportation

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- Appendix F Agency Correspondence Letters**
- Appendix G Air Quality**

Technical Studies

[The following studies, printed under separate cover, are available at California Department of Transportation’s District 7 offices during normal business hours.]

- Air Quality Report
- Community Impact Assessment Memorandum
- Historic Property Survey, Historical Resources Evaluation, and Archaeological Survey Reports
- Initial Site Assessment
- Location Hydraulic Study
- Phase II Hazardous Waste Investigation
- Preliminary Foundation Report
- Natural Environment Study (Minimal Impacts)
- Noise Study Report
- Traffic Study
- Water Quality Report

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to construct a direct westbound on-ramp to State Route (SR) 60 at the Grand Avenue interchange, which is located in the City of Industry, Los Angeles County, California (see Figures 1-1 and 1-2 for the regional location and project vicinity maps).

As of March 2009, the project cost was estimated at \$15.9 million, which includes \$5.9 million for right-of-way and utility relocation costs and \$10 million for capital construction. The project support costs, including project development and construction inspection, will be funded by local agency funds (City of Industry). The right-of-way and construction costs are to be funded by a mix of local, state, and federal funds.

The proposed project is fully funded and included in the *2008 Regional Transportation Plan: Making the Connections*, Amendment #3 (2008 RTP Amendment #3) (project ID #LA0D393). In April 2010, the Southern California Association of Governments (SCAG) found the project to be in conformity with 2008 RTP Amendment #3 (Southern California Association of Governments 2010); the Federal Highway Administration (FHWA) adopted the air quality conformity finding on May 6, 2010 (U.S. Department of Transportation 2010). The project is also included in SCAG's financially constrained 2011 Federal Transportation Improvement Program (FTIP) (project ID #LA0D393). SCAG's 2011 FTIP was approved by FHWA on December 14, 2010. The design concept and scope of the proposed project are consistent with the project description in 2008 RTP Amendment #3, the 2011 FTIP, and the assumptions in SCAG's regional emissions analysis. Refer to the air quality appendix (Appendix G) for documentation from 2008 RTP Amendment #3 and the 2011 FTIP.

1.2 Purpose and Need

1.2.1 Project Purpose

The four primary objectives are as follows:

1. Improve traffic operations on Grand Avenue from Baker Parkway to the interchange at SR-60,
2. Increase capacity at the Grand Avenue interchange,
3. Reduce mainline traffic density in the weaving area between Grand Avenue and the SR-60/SR-57 interchange, and
4. Improve safety along Grand Avenue.

These four primary objectives address the need to improve the geometric and operational deficiencies of the Grand Avenue interchange.

Figure 1-1. Regional Location Map

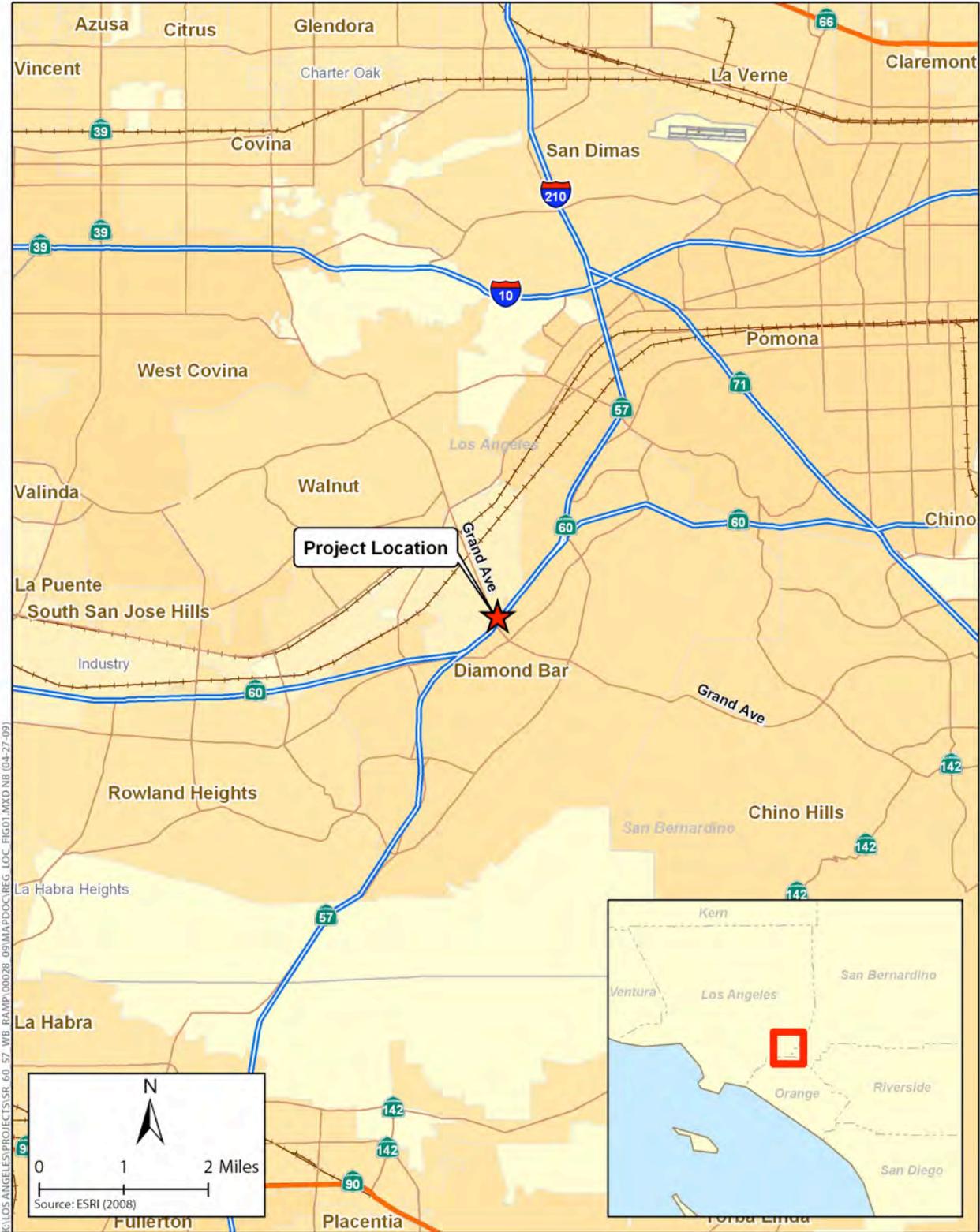


Figure 1-2. Project Vicinity Map



1.2.2 Project Need

The need for the proposed improvements is based on a number of geometric and operational deficiencies, which are described in detail in the subsections below. The deficiencies result in travel delays for many hours of the day. Traffic conditions on most roadway facilities are analyzed using the principles or the specific analysis methods contained in the *Highway Capacity Manual* (HCM), 2000 edition, a publication of the Transportation Research Board, a research agency associated with the federal government. Level of service (LOS) is the report card scale, ranging from A to F, used in the HCM. Brief definitions of LOS are found in Table 1-1. It describes the varying conditions on a roadway during a specific time interval of study.

Table 1-1. Level of Service Descriptions

Level of Service	Traffic Description
A	Excellent, Light Traffic
B	Good, Light to Moderate Traffic
C	Moderate Traffic, with Insignificant Delay
D	Heavy Traffic, with Significant Delay
E	Severe Congestion and Delay
F	Failed, Indicated Levels Cannot Be Handled

Source: Transportation Research Board, 2000.

Grand Avenue is currently at capacity and experiencing LOS deficiencies at the SR-60 ramp intersections (deficiencies as low as LOS D). With steady commercial and industrial growth in the City of Industry, the City of Diamond Bar, and other cities in the San Gabriel and Pomona Valleys, growing traffic volumes at the interchange, forecast to 2035, will result in demand that is greater than the capacity of the interchange components. By 2016, this growth will result in an estimated LOS of F and D at the Grand Avenue westbound ramp intersection during the AM and PM peak periods, respectively, and LOS D and F at the Grand Avenue eastbound ramp intersection during the AM and PM peak periods, respectively. This corresponds to an average delay of 2 minutes per vehicle at the westbound ramp intersection on weekday mornings in 2016 and more than 4 minutes in 2035. With the proposed slip ramp and double left-turn lanes, westbound AM intersection delays would be more than cut in half, dropping to 41 seconds in 2016 and 2 minutes 2035. Constructing the project would improve LOS and delay times along Grand Avenue in both 2016 and 2035.

1.2.2.1 Capacity, Transportation Demand, and Safety

Existing Capacity and Level of Service

The intersections along Grand Avenue at the westbound and eastbound SR-60 ramps currently operate at LOS D and LOS C, respectively, in the morning peak hour (see Tables 1-2, 1-3, and 1-4).

Table 1-2. Existing (2009) Daily Traffic Volumes

	Average Traffic	AM Peak Hour	PM Peak Hour
Grand Avenue, north of SR-60 WB ramps	28,610	3,092	2,861
WB = westbound.			

Source: WKE, 2010.

Table 1-3. Existing and Projected Traffic Conditions—Grand Avenue at SR-60 Westbound Ramps

Description	AM Peak Hour			PM Peak Hour		
	Queue Length	Delay (sec)	Level of Service	Queue Length	Delay (sec)	Level of Service
Existing (2009) Conditions	338 ft (WB off-ramp) 307 ft (NB Grand)	46	D	148 ft (WB off-ramp) 487 ft (SB Grand)	29.7	C
No-Build Alternative (2013)	747 ft (WB) 1,024 ft (NB)	114.3	F	279 ft (WB) 646 ft (SB)	43.9	D
Build Alternative (2013)	580 ft (WB) 763 ft (NB)	40.5	D	292 ft (WB) 129 ft (SB)	22	C
No-Build Alternative (2035)	941 ft (WB) 1,046 ft (NB)	273.1	F	535 ft (WB) 1,515 ft (SB)	359.3	F
Build Alternative (2035)	864 ft (WB) 883 ft (NB)	123.2	F	498 (WB) 1,023 ft (SB)	316	F
NB = northbound; SB = southbound; WB = westbound.						

Source: KOA Corporation, 2010.

Table 1-4. Existing and Projected Traffic Conditions—Grand Avenue at SR-60 Eastbound Ramps

Description	AM Peak Hour			PM Peak Hour		
	Queue Length	Delay (sec)	Level of Service	Queue Length	Delay (sec)	Level of Service
Existing (2009) Conditions	145 ft (EB off-ramp)	23.2	C	123 ft (EB off-ramp)	14.6	B
No-Build Alternative (2013)	613 ft (EB)	45.3	D	340 ft (EB)	137.4	F
Build Alternative (2013)	377 ft (EB)	20.6	C	181 ft (EB)	24.4	C
No-Build Alternative (2035)	838 ft (EB)	121.4	F	561 ft (EB)	96.4	F
Build Alternative (2035)	667 ft (EB)	59.9	E	519 ft (EB)	102.4	F
EB = eastbound.						

Source: KOA Corporation, 2010.

Regional Population/Traffic Forecasts

The freeway interchange at Grand Avenue is currently approaching capacity, and Grand Avenue is experiencing LOS deficiencies at the ramp intersections, which could have an even greater negative effect on mainline flows in the future. With steady commercial and industrial growth in the City of Industry, the City of Diamond Bar, and other cities in the San Gabriel and Pomona Valleys, the increasing traffic volumes at the interchange, as forecast to 2035, will result in a level of demand that is beyond the capacity of the interchange components, resulting in an estimated LOS of F during the AM and PM peak hours for both the eastbound and westbound ramp signalized intersections at Grand Avenue.

According to the SCAG travel forecasting model, population and employment growth between 2008 and 2035 is expected to result in traffic volumes along SR-60 and at the confluence with SR-57 that are approximately 25 percent higher than existing volumes, even with the proposed high-occupancy vehicle (HOV) lanes.

Projected Capacity Needs, Queue and Delay, and/or Level of Service

By 2013, growth in the area will result in further deterioration of the Grand Avenue intersection operations, with a projected LOS of F at the westbound on-ramp in the AM peak hour and at the eastbound on-ramp in the PM peak hour. Projected growth takes into account completion of approximately half of the nearby Industry Business Center, which includes an option for a National Football League (NFL) stadium on the southern portion of the site.

System Safety Needs

Traffic Accident Surveillance and Analysis System (TASAS) data provided by Caltrans, District 7, cover the 36-month period from April 1, 2006, to March 31, 2009. Table 1-5 compares the actual accident rates for fatal, fatal-plus-injury, and total accidents with the average rates for the mainline (per million vehicle miles) as well as the ramps and connectors (per million vehicles miles). Actual accident rates were higher than average for the eastbound Grand Avenue off-ramp and the eastbound Grand Avenue on-ramp.

The predominant type of collision at the eastbound Grand Avenue off-ramp and all of the westbound Grand Avenue ramps was a rear-end collision. Rear-end accidents are associated with a sudden attempt to stop when a roadway has exceeded capacity, typically occurring in chokepoint areas. Rear-end accidents are more likely to occur during peak hours because of the amount of congestion. The proposed westbound ramp improvements would be expected to lessen traffic congestion within the project limits and therefore potentially reduce the number of accidents associated with congestion. The proposed westbound slip ramp would connect with an auxiliary lane to SR-60, thereby reducing the volume of lane changes.

1.2.2.2 Roadway Deficiencies

The Grand Avenue interchange does not have any structural limitations, however the interchange has a number of geometric and operational deficiencies. On SR-57 and SR-60, the operational deficiencies result primarily from the short weaving distances at the interchange and mainline merge/diverge maneuvering.

Table 1-5. Accident Summary, June 1, 2006, through March 31, 2009

Location (PM to PM)		Post Mile	Total Number of Accidents	Actual Rate (acc/mvm)			Average Rate (acc/mvm)		
				Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
Grand Avenue	Bridge No. 53-1864	R24.451	Grand Avenue included as part of the ramp data						
Grand Avenue Ramps	WB off-ramp	R24.712	12	0.000	0.29	1.17	0.004	0.42	1.20
	WB on-ramp	R24.551	7	0.000	0.15	0.51	0.002	0.26	0.80
	EB off-ramp	R24.277	35	0.000	0.46	2.68	0.004	0.42	1.20
	EB on-ramp	R24.552	21	0.000	0.34	1.81	0.002	0.26	0.75
Connectors at SR-60/SR-57	WB SR-60 to SB SR-57	R23.884	52	0.000	0.10	0.53	0.005	0.20	0.60
SR-60	WB	R23.173 to R26.526	977	0.000	0.44	1.83	0.011	0.33	1.14

Source: *Grand Avenue at SR-60/SR-57 Westbound Slip Ramp Draft Project Report*, August 2010.

Nonstandard design features on the mainline freeway, including the widths of the HOV lanes and two mixed-flow lanes, shoulder widths, horizontal clearances, and median widths, would not be modified by the proposed improvements. In addition, lanes on Grand Avenue have nonstandard widths.

More than 60 percent of the southbound Grand Avenue AM traffic and 50 percent of the PM traffic turns left at the westbound and eastbound ramp intersections. These high volumes contribute to the poor LOS projected for 2013 and beyond. At the eastbound ramp, the single left-turn lane from southbound Grand Avenue to eastbound SR-60 was observed to queue back to the westbound ramp intersection at various times throughout the day.

Maintenance Problems

The 2003 bridge inspection report (Grand Avenue OC SR-60) indicates that the asphalt at each end of the bridge has settled, exposing the shear keys to direct wheel loading. The report recommends patching the asphalt.

Correcting Deficiencies

The operational deficiencies on Grand Avenue would be improved with the addition of a westbound SR-60 slip ramp. This would allow southbound Grand Avenue traffic to enter SR-60 by making a right turn rather than a left turn across northbound traffic. To improve operations at the eastbound SR-60 intersection, a second left-turn lane would be added, which would shorten left-turn signal timing. On the mainline, weaving would be reduced by restriping the current westbound SR-60 loop on-ramp to create an optional southbound SR-57 or westbound SR-60

bypass connector. As a consequence, only vehicles entering from the new westbound slip ramp would need to change lanes; under the existing condition, drivers who want to take the bypass lane have to weave into the loop on-ramp lane. The proposed project would reduce the number of cars in the lane with the merging bypass traffic.

The asphalt on the southbound Grand Avenue lanes would be replaced as part of the ramp work.

1.2.2.3 Social Demands or Economic Development

SR-60 and SR-57 are major inter-regional freeways that link cities in the San Gabriel Valley and the Inland Empire to Los Angeles and Orange Counties. The project site is located on the border of the City of Industry and the City of Diamond Bar and surrounded by a variety of land uses. While the immediate vicinity is mostly undeveloped and proposed for preservation and restoration, there is an existing commercial center within the project limits (in the City of Diamond Bar). In addition, an industrial and commercial center is located north of the project site, a golf course is located south of the SR-60/SR-57 confluence, and commercial shopping centers are located along Golden Springs Drive. There are few residential areas in proximity to the project site. The nearest residential land uses are located more than 1,500 feet to the northeast.

According to the City of Industry 1995 General Plan, the city has been developed primarily as an industrial business center. It is likely that the city will continue to promote such uses on the remaining developable land. Furthermore, zoning and general plan designations dictate what types of development will occur in the area. Most of the project site is designated for transportation uses; however, one area that could be acquired by the proposed project is within the City of Diamond Bar's jurisdiction and designated for commercial use. The parcels adjacent to the northern boundary of the site are designated for industrial manufacturing. According to the supplemental environmental impact report for the Industry Business Center, additional business development, including industrial facilities, an NFL stadium, and mixed retail and commercial development, is proposed for the parcels north of the freeway.

The City of Diamond Bar has also designated and zoned land within the city for limited manufacturing/industrial uses. While the majority of land uses within the city are residential, within the last 5 years, the area surrounding the project site (near the intersection of Grand Avenue and Golden Springs Drive, within the City of Diamond Bar) has been developed for commercial uses; therefore, the amount of vacant, developable land near the project site is limited.

As stated earlier, with steady commercial and industrial growth in the City of Industry, the City of Diamond Bar, and other cities in the San Gabriel and Pomona Valleys, the increasing traffic volumes at the interchange, as forecast to 2035, will result in a level of demand that is beyond the capacity of the interchange components.

1.2.2.4 Modal Interrelationships and System Linkages

Grand Avenue is a major local as well as regional roadway. It stretches from the foothills of the San Gabriel Mountains, at the north end of the cities of Glendora and Azusa, southeast to the City of Chino, near SR-71. SR-57 and SR-60 are major transportation facilities that make

possible the movement of people and goods at the local and regional level. The freeways link the various cities in the San Gabriel and Pomona Valleys as well as Los Angeles County, Orange County, and the Inland Empire. They also link to SR-22, SR-91, SR-210, Interstate 5, Interstate 10, Interstate 15, and Interstate 215. Furthermore, SR-60 serves as a major freight corridor, assisting in the movement of goods for the region, the state, and the nation. The ports of Los Angeles and Long Beach are major ports of entry for a variety of goods, which are transported to the intermodal yards near downtown Los Angeles. At these yards, cargo that does not continue on rail is transported by truck throughout the region and the state, and a large share of that cargo makes its way to distribution centers in the Inland Empire by freeway, including SR-60. To ensure that SR-57 and SR-60 continue to move people as well as goods, which serve the local, regional, and national economy, in an efficient manner, the proposed project improvements will be needed.

1.2.2.5 Air Quality Improvements

The project would improve air quality by reducing vehicle miles traveled (VMT) in the vicinity of westbound SR-60 at Grand Avenue as well as delay along both eastbound and westbound SR-60 at Grand Avenue. With implementation of the proposed project, southbound vehicles on Grand Avenue will no longer have to wait at a left-turn signal to access the existing westbound loop on-ramp. Instead, they will be able to merge onto the westbound freeway from the new slip on-ramp. Northbound vehicles on Grand Avenue will continue to use the existing westbound loop on-ramp but without having to wait for vehicles that are turning left from southbound Grand Avenue to access the ramp. By using the two ramps, idling time decreases, which helps to eliminate emissions from idling vehicles.

1.2.2.6 Independent Utility and Logical Termini

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts. The environmental impact review frequently covers a broader geographic area than the strict limits of the transportation improvements. Independent utility means that the project improvements have independent significance or in other words be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made.

Even if no additional transportation improvements are made in the project area, the proposed project would reduce congestion without creating a new chokepoint outside the project limits. The project would not require future construction to implement the project's design capabilities fully and meet the purpose and need. Furthermore, the proposed project would not result in environmental impacts beyond the project limits because it would not affect resources outside the project area directly or indirectly. Therefore, the project has both independent utility and logical termini.

The total length of the proposed project is approximately 0.6 mile, which represents the logical termini for the proposed project. All areas of the project where improvements and/or construction activity are proposed are included in the environmental analysis; thus, the logical termini are of sufficient length to address environmental matters.

1.3 Project Description

This section describes the proposed project and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. The four primary objectives of the project are as follows: 1) improve traffic operations on Grand Avenue from Baker Parkway to the interchange at SR-60, 2) increase capacity at the Grand Avenue interchange, 3) reduce mainline traffic density in the weaving area between Grand Avenue and the SR-57/SR-60 interchange, and 4) improve safety along Grand Avenue. The need for the proposed improvements is based on a number of geometric and operational deficiencies, resulting in travel delays for many hours of the day and an unacceptable peak-hour LOS of F at the SR-57/SR-60 Grand Avenue interchange. One Build Alternative is being considered for the proposed project.

1.4 Alternatives

1.4.1 Proposed Build Alternative

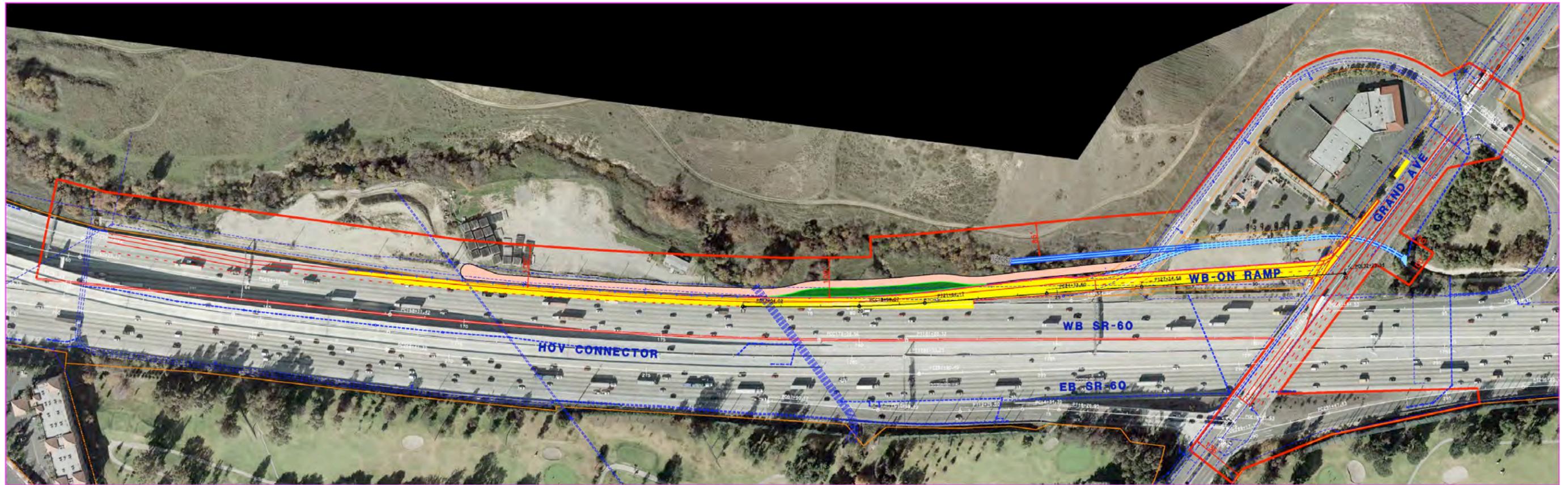
The proposed Build Alternative would add a direct on-ramp to westbound SR-60 from southbound Grand Avenue, widen southbound Grand Avenue to accommodate an additional right-turn lane to the westbound on-ramp, remove the raised concrete median to provide a second left-turn lane to the eastbound on-ramp, eliminate some of the existing nonstandard design features, and create an auxiliary lane between Grand Avenue and Brea Canyon Road along the SR-60 bypass connector. The auxiliary lane would be created by extending the proposed direct on-ramp to connect with an existing lane addition on the SR-60 bypass connector 1,600 feet west of Grand Avenue. The proposed project would occur along SR-60 from post mile R23.87 to post mile R24.48.

The project limits extend along SR-60 from Grand Avenue on the east to a point approximately 1,600 feet west of the existing Grand Avenue interchange as well as along Grand Avenue between the eastbound and westbound ramps. Most of the project site is located within an existing state right-of-way. However, the proposed project would require partial acquisition of a commercial site located in the northwest quadrant of the interchange. The westbound on-ramp would diverge from Grand Avenue approximately 100 feet north of the overcrossing, then merge with SR-60 as an auxiliary lane approximately 1,450 feet west of the on-ramp merge area for the westbound loop, which is consistent with Caltrans' standard 1,000-foot ramp separation requirement.

Old Brea Canyon Road in the project limits is a utility service road with a locked gate. Realignment of Old Brea Canyon Road onto the adjacent property owned by the City of Industry would be necessary to accommodate the westbound on-ramp and SR-60 widening. On Grand Avenue, the intersection with Old Brea Canyon Road and the existing westbound on- and off-ramps would be restriped to remove the left-turn lane from southbound Grand Avenue to the westbound SR-60 loop ramp. The traffic signals would be reconfigured as well.

Removal of the raised center median on Grand Avenue would begin at the westbound SR-60 on- and off-ramp intersection and continue to the intersection with the eastbound on-ramp just south of SR-60. At the eastbound on-ramp to SR-60, southbound Grand Avenue would be restriped to accommodate two left-turn lanes, while on northbound Grand Avenue the existing restricted right-turn-only lane would be restriped as a through/unrestricted right-turn lane. Figure 1-3 shows the elements of the proposed project.

Figure 1-3. Proposed Project



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1.4.1.1 Retaining Walls and Soundwalls

Ancillary improvements would include construction of a 700-linear-foot retaining wall, up to 20 feet high, along the north side of the proposed westbound on-ramp. No soundwalls are proposed as part of this project.

1.4.1.2 Drainage Facilities

Drainage work under the proposed project would include an extension of the existing storm drain system and construction of new inlets along the shoulders.

Several box culverts would be relocated or extended within the project area. These relocations would occur between Grand Avenue and Old Brea Canyon Road as well as under Old Brea Canyon Road. In addition, a box culvert extension would be constructed between Old Brea Canyon Road and the new outfall location.

1.4.1.3 Utility Relocation

The proposed project would include relocation/modification of existing power poles, subsurface power lines, natural gas lines, and sewer lines in the project area. These utility relocations/modifications would include

- reconstruction of a sewer line in Old Brea Canyon Road, which would require an excavation depth of approximately 6 feet;
- relocation of overhead power lines along Old Brea Canyon Road;
- relocation of underground power and communication lines adjacent to the new ramp entrance, and
- relocation of the end point of a gas line in Old Brea Canyon Road.

1.4.1.4 Electrical Work

Electrical work under the proposed project would include modifications to existing sign illumination, a traffic monitoring station in the auxiliary lane, new lighting in the ramp gore area, construction of a ramp meter, and relocation of Caltrans' fiber optic communication lines in the shoulder. Existing traffic signals at the eastbound ramp intersection would require modification as well.

1.4.1.5 Construction Activities and Staging

If this project is approved, the construction phase is anticipated to begin in the summer (June) of 2012 and end the following year, during the autumn (November) of 2013. The proposed project would involve clearing, excavation, grading, and other site preparation activities prior to structural work and paving. Structural work would entail demolition and removal of an existing retaining wall and the construction of new retaining walls along the direct connector ramp. The proposed project would disturb approximately 2.5 acres, with the maximum depth of disturbance anticipated to be 21 feet. Various types of mobile and non-mobile construction equipment, as well as temporary traffic control devices, would be used and then stored within designated

staging areas on site and at storage facilities located off site. On-site construction staging would occur just north of the SR-60/SR-57 mainline. This area is west of Grand Avenue and north of the SR-60/SR-57 connector in an area previously used for staging by Caltrans.

1.4.1.6 Permanent Right-of-Way Acquisition and Temporary Construction Easements

Rights-of-way would need to be acquired from parcels adjacent to the mainline freeway. Acquisition of a vacant lot adjacent to SR-60, located just northwest of the Grand Avenue/SR-60 interchange, would be required. Construction easements would also be required from this property for construction of the retaining walls.

The access control points along Grand Avenue to two commercial properties (assessor's parcel numbers 8719-20-001 and 8719-020-006) would need to be relocated. The closure of these access control points would require improvements on the property to meet City of Diamond Bar fire codes. Alternate entrances would be constructed.

Transfer of fee title for the property adjacent to Old Brea Canyon Road, which is owned by the City of Industry, would be necessary for the proposed westbound on-ramp. Title would be transferred to the state.

1.4.2 Transportation System Management and Transportation Demand Management Alternatives

1.4.2.1 Transportation System Management

Transportation System Management (TSM) strategies are actions that 1) increase the efficiency of existing facilities without increasing the number of through lanes and 2) encourage automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements. Although TSM measures alone could not satisfy the purpose and need of the proposed project, the following TSM measures have been incorporated into the Build Alternative for this project:

- installation of traffic signals at ramp intersections, and
- installation of a ramp meter.

1.4.2.2 Transportation Demand Management

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 reduces traffic congestion or facilitates higher vehicle occupancy 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 activities within this component include providing contract funds to regional agencies that actively promote ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals. No TDM strategies are proposed as part of the proposed project.

1.4.3 No-Build Alternative

The No-Build Alternative would result in no improvements to the Grand Avenue interchange. The interchange would continue to experience unacceptable levels of service in the peak hours. The No-Build Alternative would not address the identified purpose and need (objectives) of the project.

1.4.4 Identification of a Preferred Alternative

Public and agency comments were given serious consideration to address any concerns with the proposed Build Alternative (Chapter 3, Comments and Coordination). The Build Alternative was selected as the preferred alternative because it resolved the operational and geometric deficiencies at the Grand Avenue interchange. In addition, with the incorporation of the identified mitigation measures, all potential environmental impacts associated with the Build Alternative would be reduced to less-than-significant/non-adverse levels. Although the No-Build Alternative would not present further environmental impacts from existing conditions, this alternative would not address the identified objective of the project. The intersection would continue to experience unacceptable levels of service in the peak hours, which would only worsen over time based on existing local and regional growth projections.

1.4.5 Alternatives Considered but Eliminated from Further Discussion

During preliminary scoping and design, the design alternative described below was considered. However, following a comparison of operational enhancements, right-of-way impacts, and construction-period impacts, this alternative was eliminated from further consideration.

1.4.5.1 Partial Cloverleaf for the Westbound Direction

A partial cloverleaf for the westbound direction with a compact diamond for the eastbound direction was considered as a potential alternative to the project. Grand Avenue would be realigned approximately 50 feet east of the existing centerline to avoid right-of-way acquisition from a property formerly occupied by an automobile dealership at the corner of Grand Avenue and Old Brea Canyon Road. The centerline shift of Grand Avenue would require the westbound off-ramp to be relocated approximately 100 feet north of the existing intersection on Grand Avenue. The intersection relocation would also require realignment of the westbound loop on-ramp and Old Brea Canyon Road. The westbound SR-60 loop on-ramp would join the freeway as an auxiliary lane. A proposed direct westbound on-ramp would diverge from Grand Avenue approximately 100 feet north of the overcrossing and join as an auxiliary lane approximately 1,500 feet west of the westbound loop on-ramp join. This alternative would affect a golf course and require sliver easements at several residential properties; therefore, it was eliminated from further consideration.

1.5 Permits and Approvals Needed

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

Table 1-6. Permits and Approvals Needed

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Endangered Species Act, Section 7	Concurrence on findings and mitigation issued March 9, 2011
U.S. Army Corps of Engineers	Clean Water Act, Section 404	Pending
California Department of Fish and Game	1600 Agreement for Streambed Alteration	Pending
California Regional Water Quality Control Board	Clean Water Act, Section 401	Pending
Los Angeles Regional Water Quality Control Board	National Pollutant Discharge Elimination System permit	Pending; will coordinate treatment best management practices (BMPs) during the 35% plans, specifications, and estimates (PS&E) phase

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

As part of the scoping and environmental analysis conducted for the proposed project, the following environmental resources were considered. However, it was determined that there would be no impacts on these resources. Therefore, the resources listed below are not discussed in this document.

- COASTAL ZONE and WILD AND SCENIC RIVERS: The proposed project is not in the vicinity of a designated coastal zone or wild and scenic river.
- FARMLANDS/TIMBERLANDS: According to the California Farmland Mapping and Monitoring Program's 2006 Los Angeles Important Farmland Map, there is no farmland within or surrounding the project site.

2.1 Human Environment

2.1.1 Land Use

The project site encompasses areas within the City of Industry and the City of Diamond Bar. For this analysis, the City of Industry General Plan (1971; amended 2006) and the City of Diamond Bar General Plan (July 25, 1995; amended 1999) were reviewed to understand development trends, land use-related goals, and specific city policies that could affect or be affected by the proposed project. Therefore, both cities, including land uses within those cities, are discussed in this analysis.

2.1.1.1 Existing and Future Land Use

Existing Land Uses

The SR-60 and SR-57 interchange, the junction of two major freeways in the southeastern part of Los Angeles County (County), is located within the Cities of Industry and Diamond Bar.

City of Industry

The City of Industry was incorporated in 1956, mainly to give the local population an opportunity to determine how unincorporated Los Angeles County's eastward industrial expansion would be planned and managed in the San Gabriel Valley. The City of Industry General Plan emphasizes primarily industrial uses under an Industrial Manufacturing (M) land use designation. The Industrial Manufacturing designation also allows for commercial, professional, and service uses, which support the industrial base as well as the city's revenue base. In 1987, the city adopted a Planned Development Overlay Zone (PD Overlay), which was applied to large parcels with diversified development plans. With the application of a PD Overlay, commercial and industrial uses are developed using the existing commercial and industrial standards set by the City of Industry.

City of Diamond Bar

The City of Diamond Bar was one of the first planned communities in the Western United States. The city set out to maintain 85 percent of its land for residential uses, with the remaining land for infrastructure, commercial, and other non-residential uses. As a result, according to the general plan, the majority of the City of Diamond Bar is developed, or planned for development, with residential and open space uses. Non-residential uses make up about 20 percent of the city's land area. Approximately 2 percent of the city's land area is currently developed with light industrial, office, and commercial uses.

The project site is located mainly within a Caltrans right-of-way on the border of the City of Industry and the City of Diamond Bar. The site is surrounded by a variety of land uses. Commercial and industrial land uses are planned for the areas surrounding the northwest and northeast quadrants of the project site. Land along Diamond Bar Creek within these areas will undergo ecological restoration. The existing commercial center located northwest of the project site is under the jurisdiction of the City of Diamond Bar. A golf course is located south of the SR-60/SR-57 confluence, in areas southwest and southeast of the project site, and shopping centers are found along Golden Springs Drive. There are minimal residential land uses in proximity to the project site. The nearest residential area is located more than 1,500 feet northeast of the project site and topographically separated by hills.

Planned Land Uses

City of Industry

The City of Industry General Plan land use designation for the areas adjacent to the proposed project is Industrial Manufacturing. This general plan land use designation is shown in Figure 2-1.

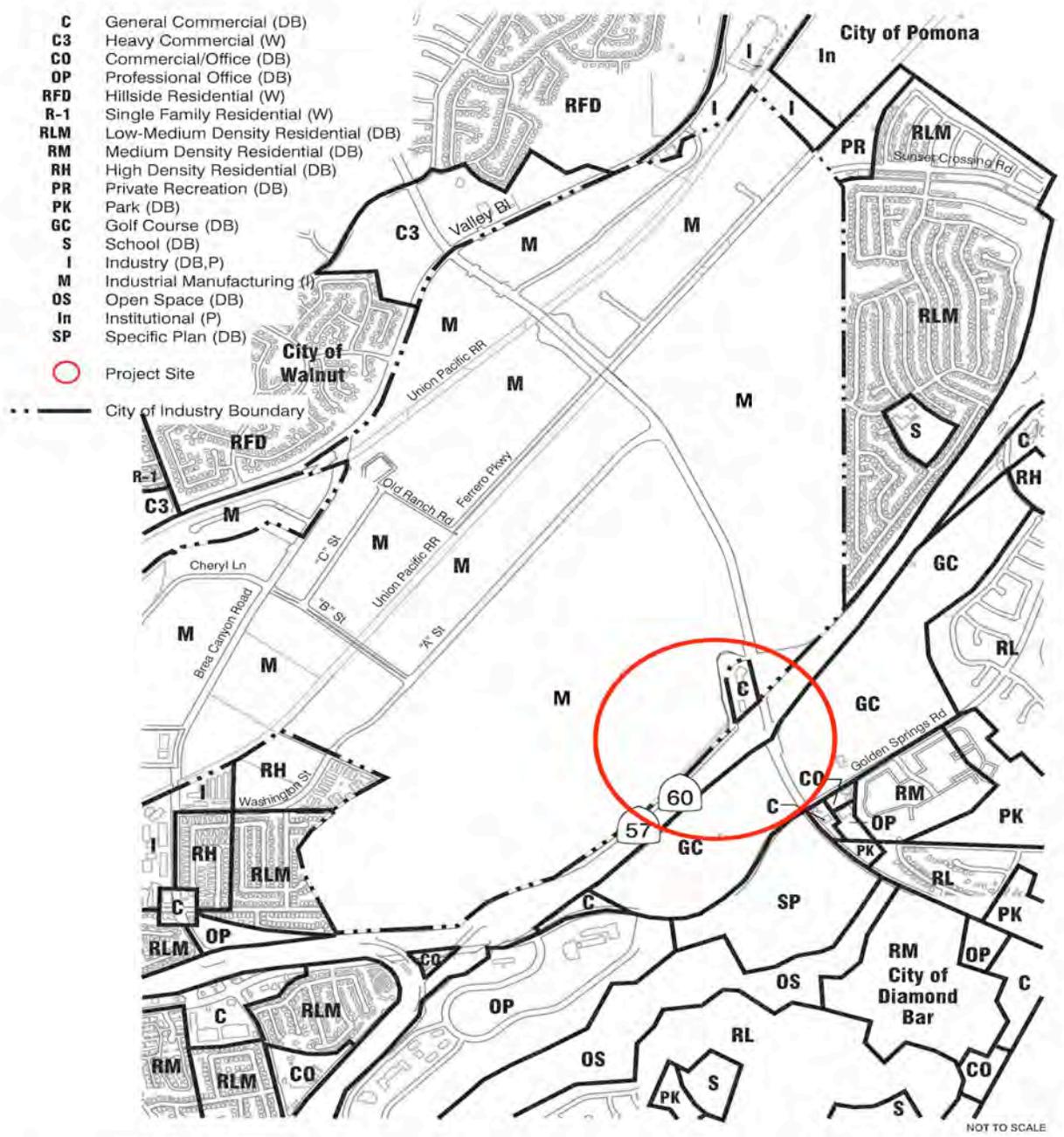
One planned project would be located adjacent to the project site. The Industry Business Center (IBC), to be located on approximately 592 acres north of the project site, was originally approved in 2004 for up to 4.8 million square feet of industrial, professional, and commercial uses. The revised IBC Plan of Development, which was approved in 2009, includes a 75,000-seat football stadium and support uses, including retail space, team offices, concession areas, training facilities, practice fields, a sports medical center and clinic, theaters, restaurant/banquet facilities, and office uses.

Other planned projects include Industry East (Areas A-2, A-3, and A-4), which would provide two retail shopping centers and warehouse office uses 1.25 miles northeast of the project site along Valley Boulevard at Grand Avenue.

City of Diamond Bar

The City of Diamond Bar General Plan land use designations for the areas adjacent to the project site within the City of Diamond Bar are General Commercial (C) to the north and Golf Course (GC) to the south. The general plan land use designations are shown in Figure 2-1.

Figure 2-1. Existing General Plan Land Use Designations



Source: City of Industry General Plan (I), City of Diamond Bar General Plan (DB), City of Walnut General Plan (W), City of Pomona General Plan (P)

Existing General Plan Designations

One approved project is located south of the project site. Diamond Bar Village, located on Grand Avenue at Golden Springs Drive (approximately 0.25 mile south of the project site), is a 6,000-square-foot restaurant. Planned projects in the city include a Kaiser Permanente medical office building and Gateway Corporate Center Lot 4, a general office center; both projects are to be located west of Grand Avenue (see Table 2-1).

Planned Parks and Recreational Facilities

There is one existing recreational facility in the immediate vicinity of the project site. One additional recreational facility is located approximately 1 mile from the project site. These facilities are listed below.

- Diamond Bar Golf Course is a 178-acre, 18-hole public golf course located at 22751 E. Golden Springs Drive in Diamond Bar. The golf course is just south of the project site, adjacent to the eastbound SR-60 on-ramp. Ancillary amenities include a driving range, pro shop, banquet facilities, and a restaurant.
- Sycamore Canyon Park is a 54-acre park located at 22930 E. Golden Springs Drive (approximately 0.5 mile southeast of the project site) in Diamond Bar. Facilities include one baseball field (unlighted), a picnic area, tot lot, restrooms, and 70 parking spaces.

According to the City of Industry and the City of Diamond Bar General Plans, there are no existing or planned recreation or bicycle trails along Grand Avenue.

Existing Travel Patterns

Grand Avenue runs north/south through the Cities of Industry, Diamond Bar, and Walnut. The segment of Grand Avenue in the City of Industry is classified in the general plan's Circulation Element as a major arterial highway south of Baker Parkway to SR-60. A major arterial has four or six through travel lanes of traffic and may include additional lanes to accommodate turning movements, parking, and bicycle traffic, all within a right-of-way width of between 100 and 200 feet. Arterials in the area serve two primary functions: to move vehicles into and through the Cities of Industry and Diamond Bar and to serve adjacent industrial and commercial uses. Grand Avenue is currently designated as a truck route in the Circulation Element of the City of Industry General Plan.

Existing traffic volumes and patterns on Grand Avenue, SR-60, and other streets in the area are described in Section 2.1.5, Traffic and Transportation/Pedestrian and Bicycle Facilities. Transit and rail services are also provided in the Cities of Industry and Diamond Bar, as described in Section 2.1.5.

Table 2-1. Approved and Pending Cumulative Projects

Name	Jurisdiction	Proposed Uses	Status
Industry Business Center	City of Industry	Plan of Development includes up to 4.8 million square feet of industrial, professional, and commercial uses on 592 acres. Revised Plan of Development includes 75,000-seat football stadium and support uses, including retail space, team offices, concession areas, training facilities, practice fields, a sports medical center and clinic, theaters, restaurant/banquet facilities, and office uses.	Plan of Development approved in 2004. Revised Plan of Development approved in 2009, with exemption for stadium. No construction yet.
Industry East (Areas A-2, A-3, and A-4)	City of Industry	Two retail shopping centers and warehouse office uses.	Under construction as of 2009.
Diamond Bar Village	City of Diamond Bar	6,000-square-foot high-turnover restaurant.	Construction complete.
Kaiser Permanente medical office building	City of Diamond Bar	31,050-square-foot medical office building.	Under construction as of 2009.
Gateway Corporate Center Lot 4	City of Diamond Bar	25,000-square-foot general office center.	Under construction as of 2009.
SR-57/SR-60 Confluence at Grand Avenue Project	Caltrans	Freeway improvements along the confluence of SR-57 with SR-60.	Early planning stages.

Source: Sage Environmental, 2009.

2.1.1.2 Consistency with State, Regional, and Local Plans and Programs

City of Industry General Plan

The City of Industry General Plan was adopted in 1971 and amended in 2006. The general plan identifies the following primary goals:

- The creation of manufacturing, distribution, and industrial facilities within the city; and
- Responsiveness to the creation of a setting that is complementary to its neighboring communities.

The principal objectives, which have been established to work toward the aforementioned goals, are listed below.

Objective 1: Maintain and further develop an employment base in the San Gabriel Valley and the Los Angeles metropolitan area.

Objective 2: Initiate capital improvement programs and incentives to address a full range of industry requirements; such programs shall serve industry presently located in the city and, on a nationwide basis, stimulate and support investment.

Objective 4: Develop a highway and street network that will serve all circulation desires with a minimum of conflict and inconvenience.

Objective 5: Perpetuate and instigate programs to beautify the city throughout and conserve its natural resources.

Objective 6: Encourage commercial, professional, and service uses to support manufacturing, distribution, and industrial uses.

City of Diamond Bar General Plan

The City of Diamond Bar General Plan was adopted on July 25, 1995 and was amended in 1999. In the general plan's Vision Statement, the city identified the following goals regarding land use, circulation, housing, and open space planning:

- Retention of the rural/country living community character;
- Preservation of open space resources;
- Reduction of regional traffic impacts on local streets;
- Promotion of viable commercial activity and provision of well-maintained, attractive housing; and
- Creation of a community environment.

Relevant land use, recreation, and circulation/transportation goals and objectives in the City of Diamond Bar General Plan are described in the following sections.

Land Use Goals and Objectives

Goal 2: Consistent with the Vision Statement, manage land use with respect to the location, density and intensity, and quality of development. Maintain consistency with the capabilities of the city and special districts to provide essential services that achieve sustainable use of environmental and man-made resources.

Objective 2.1: Promote land use patterns and intensities that are consistent with the Resource Management and Circulation Elements.

Goal 4: Consistent with the Vision Statement, encourage long-term and regional perspectives in local land use decisions but not at the expense of quality of life for Diamond Bar residents.

Objective 4.1: Promote and cooperate in efforts to provide reasonable regional land use and transportation/circulation planning programs.

Circulation Goals and Objectives

Goal 1: Consistent with the Vision Statement, enhance the environment of the city's street network. Work toward improving the problems presented by the intrusion of regionally oriented commuter traffic through the city and into residential neighborhoods. Consider programs to reinforce the regional transportation and circulation systems to adequately accommodate regional needs.

Objective 1.1: Participate in local and regional transportation-related planning and decision-making.

Objective 1.2: Balance the need for optimum traffic flow on city arterials within economic realities and environmental and aesthetic considerations.

Goal 3: Consistent with the Vision Statement, maintain an adequate level of service on area roadways.

Objective 3.1: Improve the safety and efficiency of existing transportation facilities.

Transportation Plans

Regional and subregional transportation plans and programs that apply to the Cities of Industry and Diamond Bar as well as SR-60 include the Los Angeles County Congestion Management Plan (CMP) and SCAG's Comprehensive Transportation Plan (CTP), RTIP, and RTP. The SR-57/SR-60 Confluence at Grand Avenue Project was one of the mixed-flow improvement projects identified in the 2004 RTP. The SR-57/SR-60 Confluence at Grand Avenue Project, of which the Westbound On-Ramp at Grand Avenue/State Route 60 Interchange Improvements Project was a part of in 2004, is proposed to alleviate traffic bottlenecks and increase highway capacity within this portion of the County. The proposed project is included in the adopted 2004 RTP Amendment (April 2004) as a project to "construct on-/off-ramps."

Conformity with the Regional Transportation Plan. The proposed project is fully funded and included in the *2008 Regional Transportation Plan: Making the Connections, Amendment #3* (2008 RTP Amendment #3) (project ID #LA0D393). In April 2010, SCAG found the project to be in conformity with 2008 RTP Amendment #3 (Southern California Association of Governments 2010); FHWA adopted the air quality conformity finding on May 6, 2010 (U.S. Department of Transportation 2010). The project is also included in SCAG's financially constrained 2011 FTIP (project ID #LA0D393). SCAG's 2011 FTIP was approved by FHWA on December 14, 2010. The design concept and scope of the proposed project are consistent with the project description in 2008 RTP Amendment #3, the 2011 FTIP, and the assumptions in SCAG's regional emissions analysis. Refer to the air quality appendix (Appendix G) for documentation from RTP Amendment #3 and the 2011 FTIP.

Environmental Consequences

Construction Impacts

No-Build Alternative

Under the No-Build Alternative, there would be no construction activity that would have an effect on land use resources.

Build Alternative

During construction of the Build Alternative, temporary delays and/or detours could affect businesses in the vicinity. However, such delays or detours would not change existing land uses in the area or general plan land use designations. Because of the distances from the project area to the two recreational resources, no temporary impacts on the resources are anticipated during construction of the Build Alternative.

Operational Impacts

No-Build Alternative

The No-Build Alternative would have no effect on existing land use resource conditions in the Cities of Industry or Diamond Bar.

Build Alternative

The Build Alternative would be consistent with the City of Industry and the City of Diamond Bar General Plans, as well as relevant transportation plans, because it would alleviate traffic congestion and delays during the morning and afternoon peak periods on local streets and would not conflict with current land uses or land use zoning. The Build Alternative would not result in adverse impacts on the two recreational resources in the area because it would not take any property from those resources and would not change traffic volumes or access to those resources.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under the National Environmental Policy Act of 1969 (NEPA) or significant impacts under the California Environmental Quality Act (CEQA) related to land use or relevant transportation plans. No avoidance, minimization, or mitigation measures are required.

2.1.1.3 Parks and Recreational Facilities

Regulatory Setting

Department of Transportation Act of 1966, Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 is a special provision that stipulates that no Federal Highway Administration (FHWA) or other Department of Transportation (DOT) agency can approve the use of land from publicly owned parks, recreation areas, wildlife refuges, or publicly or privately owned historical sites unless there is no feasible or prudent alternative or the action includes all possible planning to minimize harm to the property resulting from its use.

The Diamond Bar Golf Course, as a public recreational facility, is considered a Section 4(f)-protected resource. However, the proposed project would not involve the “use” of this resource, as determined by Section 4(f) of the Department of Transportation Act of 1966 and set forth in Title 49 United States Code (USC), Section 1563(f) (see Appendix B).

Affected Environment

Diamond Bar Golf Course, a public golf course, is located just south of the project site, on the south side of SR-60/SR-57. Grand Avenue bisects the golf course, creating an eastern segment and a western segment. Diamond Bar Golf Course is a full 18-hole golf course and features a pro shop, restaurant/bar, clubhouse, driving range, and cart rental facility.

On the north side of the project site, most of the land is currently undeveloped. Plans exist for industrial and/or commercial development in the area but would exclude Diamond Bar Creek, a perennial stream that runs just north of SR-60/SR-57. There is also a Burger King restaurant and an abandoned auto dealership on two parcels between Grand Avenue and Old Brea Canyon Road. A third parcel, just south of the Burger King, is vacant. An NFL stadium, which would be proposed in the vicinity of the project site, is in the early planning stages.

Environmental Consequences

Construction Impacts

No-Build Alternative

Under the No-Build Alternative, no construction would occur, and Diamond Bar Golf Course and Diamond Bar Creek would not be affected.

Build Alternative

The Build Alternative would require access to two commercial properties (Assessor’s Parcel Numbers 8719-20-001 and 8719-020-006) to be reconfigured as well as partial acquisition of an empty parcel (Assessor’s Parcel Number 8719-20-007) located just north of SR-60. However, none of the affected properties is considered a park or recreational use. Construction activities

related to the Build Alternative would not affect Diamond Bar Golf Course, and Diamond Bar Creek, is a protected natural habitat area. There are no trails, bikeways, or other means of access that allow people to use the creek for recreational purposes.

Current engineering design plans include an approximate 300-linear-foot extension to the existing Old Brea Canyon Road box culvert west of Grand Avenue. Resource agency permits would be required from the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG) for the extension of this box culvert over Diamond Bar Creek. No construction would occur on or immediately adjacent to Diamond Bar Golf Course. Therefore, no impact on these resources would occur.

Operational Impacts

No-Build Alternative

Under the No-Build Alternative, the SR-60 interchange would remain as is, and nearby recreational uses would not be affected.

Build Alternative

The Build Alternative would not require any use of a Section 4(f) property or other publicly owned park or recreational facility. This alternative would construct a new on-ramp to westbound SR-60 and provide a new left-turn lane to eastbound SR-60. In addition, this alternative would not restrict access to or increase the use of any public parks or recreational facilities such that new facilities would be required. Future plans for new recreational facilities, such as the proposed NFL stadium, would not be affected by the Build Alternative because circulation and access along Grand Avenue would be improved by the proposed alternative. No operational impacts on parks or recreational facilities would occur.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA on parks or recreational facilities. Therefore, no avoidance, minimization, or mitigation measures are required.

Diamond Bar Golf Course, as a public recreational facility, is considered a Section 4(f)-protected resource. However, the proposed project would not involve direct use, temporary occupancy, or constructive use of this resource, as determined by Section 4(f) of the Department of Transportation Act of 1966 and set forth in Title 49 USC, Section 1563(f) (see Appendix B).

2.1.2 Growth

2.1.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act 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, which 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

CEQA also requires the analysis of a project's potential to induce growth. State CEQA Guidelines Section 15126.2(d) requires environmental documents to "...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."

2.1.2.2 Affected Environment

The project site is located on the border of the City of Industry and the City of Diamond Bar and surrounded by a variety of land uses. The immediate vicinity of the project site is mostly undeveloped and proposed for preservation and restoration. However, there is a commercial center within the project limits. In addition, an industrial and commercial center is located north of the project site, a golf course is located south of the SR-60/SR-57 confluence, and commercial shopping centers are located along Golden Springs Drive. There are minimal residential areas in proximity to the project site.

Table 2-2 summarizes existing and projected population data from the SCAG 2008 RTP.

The population of the County in 2005 was 10,206,001; that number is expected to grow to 12,338,620 by 2035, an increase of 20.9 percent. The number of households in the County in 2005 was 3,212,434; that number is expected to grow to 4,003,501 by 2035, an increase of 25.0 percent. Employment in the County in 2005 stood at 4,397,025; that number is expected to grow to 5,041,172 by 2035, an increase of 14.6 percent. According to the 2008 SCAG RTP, the County would account for 52 percent of the region's growth between 2000 and 2035.

The City of Diamond Bar had a population of 59,659 in 2005; that number is expected to grow to 68,595 by 2035, an increase of 15 percent (SCAG 2008). The number of households in the City of Diamond Bar was 17,876 in 2005; that number is expected to increase by about 19 percent to 21,247 by 2035. Employment in the City of Diamond Bar in 2005 stood at 15,273; that number is expected to grow to 17,495 by 2035, an increase of 14.5 percent.

According to the 1995 City of Industry General Plan, the city developed primarily as an industrial business center. It is likely that the city will continue to promote such uses on its remaining developable land. According to the SCAG 2008 RTP, the population of the City of Industry in 2005 was 800; that number is expected to grow to 814 by 2035, an increase of 1.8 percent.

Table 2-2. Baseline and Projected Population, Household, and Employment Numbers (2005–2035)

Population Projections							
	2005	2010	2015	2020	2025	2030	2035
Los Angeles County	10,206,001	10,615,730	10,971,602	11,329,829	11,678,552	12,015,889	12,338,620
City of Diamond Bar	59,659	61,041	62,676	64,247	65,771	67,240	68,595
City of Industry	800	807	807	809	811	812	814
Household Projections							
Los Angeles County	3,212,434	3,357,798	3,509,580	3,666,631	3,788,732	3,906,851	4,003,501
City of Diamond Bar	17,876	18,377	19,082	19,780	20,319	20,839	21,247
City of Industry	121	121	121	121	121	121	121
Employment Projections							
Los Angeles County	4,397,025	4,552,398	4,675,875	4,754,731	4,847,436	4,946,420	5,041,172
City of Diamond Bar	15,273	15,809	16,235	16,507	16,827	17,168	17,495
City of Industry	84,650	85,529	86,228	86,674	87,199	87,759	88,296

Source: SCAG 2008 RTP.

The number of households in the city in 2005 was 121; that number is not expected to grow substantially by 2035. Employment in the city in 2005 stood at 84,650; that number is expected to grow to 88,296 by 2035, an increase of 4.3 percent.

2.1.2.3 Environmental Consequences

Construction Impacts

No-Build Alternative

The No-Build Alternative would not require construction; therefore, temporary construction impacts would not occur.

Build Alternative

During construction, population growth would occur only if the project construction workers were to move to the area permanently. However, this is unlikely given the large pool of construction workers in Southern California that is available and can easily commute to the site on a daily basis. Existing businesses in the area, such as restaurants, would be able to meet the demand for services generated by construction workers. Therefore, substantial population or local business growth would not occur during construction of the Build Alternative.

Operational Impacts

No-Build Alternative

There would be no impacts on the pattern and/or rate of existing and planned population and housing growth in the project area because no property acquisitions or displacements would occur.

Build Alternative

First-Cut Screening Analysis

Since different transportation projects influence growth in different ways, the joint guidance from FHWA and the U.S. Environmental Protection Agency (EPA) adopts a two-phase approach to the evaluation of growth-related impacts. The first phase is called the “first cut” screening, which is designed to determine the likely growth-potential effect and whether further analysis is necessary. The first-cut screening analysis for the Build Alternative is presented below. For this analysis, the study area is identified as the area adjacent to the proposed on-ramp. Beyond that area, it is expected that the influence of the interchange would diminish because other routes and facilities would better serve planned development and traffic.

Accessibility

The Build Alternative would 1) construct a direct westbound on-ramp to SR-60 at the Grand Avenue interchange, 2) widen Grand Avenue to accommodate an additional right-turn lane to the westbound on-ramp, 3) remove the raised concrete median to provide a second left-turn lane to the eastbound on-ramp, 4) eliminate existing nonstandard designs, and 5) extend an auxiliary lane at the interchange. The Build Alternative improvements would remove several of

the geometric and operational deficiencies of the interchange and increase capacity to meet future traffic demand. The Build Alternative would not change accessibility to employment or shopping, nor would it increase the attractiveness of some areas over others. No households or businesses are expected to relocate to the project area as a result of the proposed project. The Build Alternative would provide some improvements with respect to safety, traffic operations, and congestion. Thus, the potential for impacts on accessibility is low.

Land Use

As discussed above, the project vicinity includes of a variety of uses (e.g., a commercial center, an industrial/commercial center, a golf course, and shopping centers). The nearest residential uses are located more than 1,500 feet to the northeast. The pattern and rate of population and housing growth following implementation of the proposed project would be expected to remain consistent with that anticipated under existing plans for the area. Furthermore, no new infrastructure, housing, or other permanent physical changes to the environment would be necessary as an indirect consequence of the proposed project.

Most of the project site is designated for transportation uses; however, one area is designated for commercial use. It lies within the City of Diamond Bar's jurisdiction and could be acquired by the Build Alternative.

The parcels adjacent to the northern boundary of the site have been designated for industrial manufacturing. According to the environmental impact report for the IBC, further business development, including industrial facilities as well as a proposed NFL stadium, is planned for these parcels. A total of five projects (refer to Table 2-1), in different stages of development in the vicinity of the interchange, increase the need for the proposed improvements, which are designed to accommodate future growth in the area.

Resources of Concern

Resources of concern can be identified as wetlands, threatened/endangered species, prime farmland, etc. The project traverses Diamond Bar Creek and thus has limited potential for providing habitat to any biological species of concern. Impacts on non-wetland waters of the United States, waters of the state, and biological species of concern are discussed in Section 2.3, Biological Environment, below.

Growth-inducing impacts are often secondary impacts. They can result from shifts in population growth or distribution, fostering economic growth, or removing obstacles to growth, such as providing access to an area that was previously inaccessible. Therefore, based on the first-cut screening analysis presented above, the proposed project would not be growth inducing. No additional analysis related to growth is warranted.

2.1.2.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA. Therefore, no avoidance, minimization, and/or mitigation measures are proposed.

2.1.3 Community Impacts

2.1.3.1 Community Character and Cohesion

Regulatory Setting

NEPA established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 USC 4331[b][2]). 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 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. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

The study area is generally defined as the area adjacent to the project site. Its boundaries are the eastbound SR-60/SR-57 off-ramp to the west, Baker Parkway to the north, the westbound SR-60/SR-57 off-ramp to the east, and Golden Springs Drive to the south. There is a commercial center with a Burger King and a vacant business that was formerly an auto dealership within the project limits. Other commercial uses in the area include an industrial/commercial center north of the project site with several businesses, including a paper company, an auto parts manufacturer, and a food distributor. Shopping centers are located to the south along Golden Springs Drive. Retailers, including Target and several restaurants, are located here. Future business uses are planned for the area north of the project site as part of the IBC Plan of Development.¹ As described in the environmental impact report for the IBC project, which was approved in 2004, and the supplement to the IBC project, which was approved in 2009, further business development, including industrial facilities, would be located adjacent to the existing businesses north of the project site. In addition, there is the possibility that a future NFL stadium could be located approximately 1,000 feet north of the project site.

The project site is located mainly within a Caltrans right-of-way on the border of the City of Industry and the City of Diamond Bar. It is surrounded by a variety of land uses. The SR-60/SR-57 confluence is located south of the project site. Commercial and industrial land uses are planned for the northwest and northeast quadrants of the project site. Plans exist for land within these quadrants along Diamond Bar Creek to undergo ecological restoration. The existing commercial center within the northwest quadrant is under the jurisdiction of the City of Diamond Bar. The center houses a Burger King restaurant and a vacant auto dealership. A golf course is located

¹ The Planning Center. 2004. *Industry Business Center Environmental Impact Report*. State Clearinghouse No. 2003121086. Prepared for the City of Industry. June 2.

south of the SR-60/SR-57 confluence in the southwest and southeast quadrants of the project site, and shopping centers are found along Golden Springs Drive. There are minimal residential uses in proximity to the project site. The nearest residential area is located more than 1,500 feet northeast of the project site and is topographically separated by hillsides.

The project site is located mainly in the City of Industry but partially within the City of Diamond Bar. As reported in the 2000 U.S. census, the total population in the City of Industry was 777, while the total population in the City of Diamond Bar was 56,287.

The project site is not located in an area that has been defined as a neighborhood, nor does the surrounding area exhibit characteristics such as residences, schools, or pedestrian activity. The golf course in the southwest and southeast quadrants of the project site, and the fast food restaurant in the northwest quadrant of the Grand Avenue interchange serve the regional population as well as commuters on Grand Avenue, SR-60, and SR-57.

According to data compiled by the U.S. Census Bureau in its 2002 Economic Census, most businesses in the City of Industry were associated with wholesale and retail trade, manufacturing, health care and social assistance, accommodation and food service, administrative and support services, professional services, and other service industries (see Figure 2-2 and Table 2-3).

According to data from the California Employment Development Department, there were approximately 4,968,100 people in Los Angeles County's civilian labor force as of May 2009; the City of Industry and the City of Diamond Bar had a civilian labor force of 400 persons and 32,700 persons, respectively. In May 2009, the unemployment rates in Los Angeles County, the City of Industry, and the City of Diamond Bar were 11.4 percent, 18.8 percent, and 8.1 percent, respectively. This indicates that the regional economy has followed the national trends of the economic downturn.

There are no community facilities, such as schools, places of worship, police stations, or fire stations, adjacent to or in proximity of the project site. However, there are several community facilities within 1 mile of the project site. These community facilities include two public schools, Armstrong Elementary School and Lorbeer Middle School, located 0.7 mile northeast and 0.7 mile southeast, respectively, of the project site. Both schools are under the jurisdiction of the Pomona Unified School District. Two community churches/places of worship, Calvary Chapel Springs and Mount Calvary Lutheran Church, are located 0.2 mile south and 0.7 mile east, respectively, of the project site. Two private schools, La Petite Academy and the Mount Calvary Lutheran School, are located 0.2 mile south and 0.7 mile east, respectively, of the project site. In addition, Los Angeles County Fire Station No. 120 is located 0.9 mile south and provides emergency and fire services in the project area.² The project area is served by the Los Angeles County Sheriff's Department (LACSD). The primary responding unit to the project area would come from the sheriff's City of Industry station, located approximately 7.8 miles west of the project site at 150 North Hudson Avenue.

² Los Angeles County Fire Department. 2005. *Hometown Fire Stations*. Available: <<http://www.fire.lacounty.gov/HometownFireStations/HometownFireStations.asp>>. Accessed: June 20, 2009.

Figure 2-2. Project Study Area

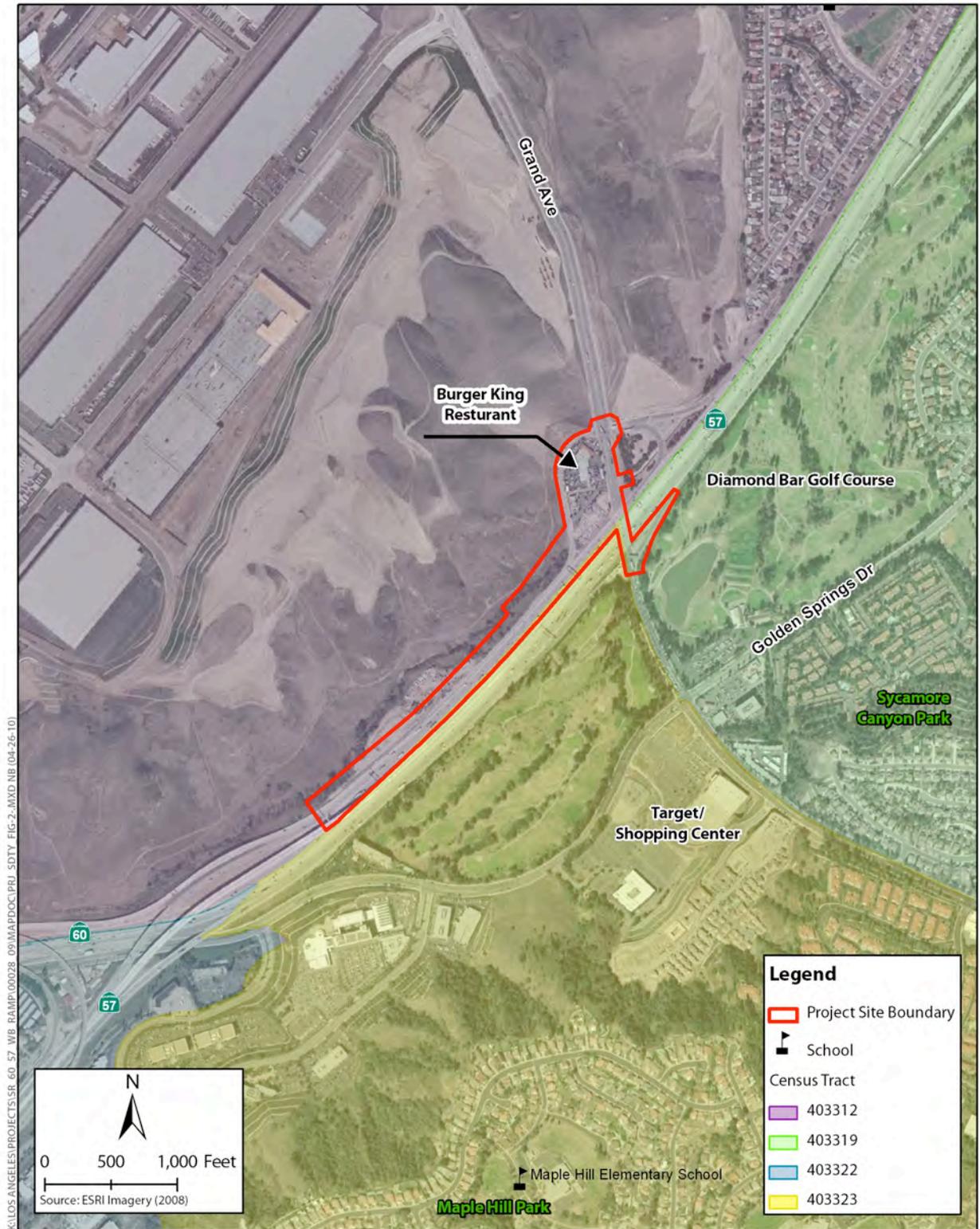


Table 2-3. 2002 Economic Census—Economic Sectors

2002 NAICS Sector	City of Industry				City of Diamond Bar			
	Number of Establishments	Sales, Shipments, Receipts (\$1,000)	Annual Payroll (\$1,000)	Number of Employees	Number of Establishments	Sales, Shipments, Receipts (\$1,000)	Annual Payroll (\$1,000)	Number of Employees
Manufacturing	314	5,352,792	842,804	24,059	29	194,917	47,134	1,379
Wholesale trade	799	12,011,312	675,753	16,497	179	2,830,262	54,213	1,341
Retail trade	281	2,054,969	177,011	6,940	110	259,178	27,420	1,108
Information	24	N	16,398	749	17	N	4,873	178
Real estate and rental/leasing	50	118,567	25,583	467	69	D	D	N
Professional, scientific, and technical services	132	103,753	39,039	1,096	213	138,224	55,408	1,095
Administrative and support and waste management and remediation services	59	122,032	62,633	2,929	69	98,747	49,551	2,309
Educational services	5	10,335	4,193	81	28	7,760	3,391	288
Health care and social assistance	57	77,548	28,512	923	133	71,207	24,498	834
Arts, entertainment, and recreation	12	22,961	5,416	417	11	11,732	2,191	160
Accommodation and food services	87	102,050	26,109	2,557	99	59,937	15,595	1,268
Other services (except public administration)	59	64,342	21,427	740	81	50,229	12,457	637
Notes: NAICS = North American Industry Classification System D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals N: Not available or not comparable								

Source: U.S. Census Bureau, 2002, U.S. Economic Census.

Environmental Consequences

Construction Impacts

No-Build Alternative

The No-Build Alternative would not require construction; therefore, temporary construction impacts would not occur.

Build Alternative

Construction activities would result in temporary, localized, site-specific disruptions for local community facilities and services in the project area. These would be related primarily to trucks and equipment; partial and/or complete street and lane closures, as well as detours; increased noise and vibration; light and glare; and increased amounts of fugitive dust. Schools in the vicinity of the project site were contacted to identify any additional concerns. However, no additional construction impacts were identified.³ Because construction activities would be temporary—and the effects would not be substantially different from the same types of nuisance-like effects associated with typical construction activities throughout Southern California—no adverse effects would occur.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not change existing conditions pertaining to community facilities or public services in the vicinity of the project site.

Build Alternative

There are no sensitive uses, such as residences, schools, hospitals, libraries, places of worship, nursing homes, transient lodging, performance venues, or playgrounds, in the immediate project area. The nearest residences are located more than 1,500 feet northeast of the project site. The Build Alternative would introduce a new, permanent freeway on-ramp structure. However, the Build Alternative would not result in the division of an existing community.

The proposed project would result in long-term beneficial impacts due to construction of a new on-ramp, which would reduce congestion and possibly reduce emergency response times.

The Build Alternative proposes improvements to existing transportation uses. These infrastructure improvements would be compatible with existing land use plans. The project proposes improvements to an existing interchange; it does not propose a new road where none currently exists, but it does propose a new ramp where none exists. However, there would be no changes to land use patterns. The existing land uses adjacent to the project site, in addition to vacant land, are either proposed for biological restoration or commercial/industrial uses.

³ Per communication with Principal Pat Savage at Armstrong Elementary School and Rosie Granados, director, La Petite Academy.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA. However, the general avoidance and minimization measures listed below appear warranted given the potential effects/impacts described above.

- Develop and implement a community outreach and public involvement program to inform the community about project construction activities.
- Develop and implement a construction management program that maintains access to and from the project area through signage, detours, flagmen, etc.
- Coordinate with emergency services providers to ensure that alternative response routes to and from the project area are in place during construction of the proposed project.
- Provide access to all fire hydrants along all access routes, and provide and maintain fire department vehicle access roads to the project site.
- Even though the project site is not located along a corridor that is normally walked by schoolchildren, consult with local school officials to identify safe vehicular routes for students traveling to and from schools in the project area during construction of the proposed project.
- Coordinate with utility providers regarding relocation of utility lines, and inform utility users in advance about the date and timing of service disruptions.

2.1.3.2 Relocations and Real Property Acquisition

Regulatory Setting

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

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.). Please see Appendix C for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

As described in the community impact assessment memorandum prepared for the project, the project site is located mainly within a Caltrans right-of-way on the border of the City of Industry and the City of Diamond Bar and surrounded by a variety of land uses (ICF Jones & Stokes 2009a). The SR-60/SR-57 confluence is located south of the project site. Commercial and industrial land uses are planned for the northwest and northeast quadrants of the project site. Land along Diamond Bar Creek within these quadrants will undergo ecological restoration. The existing commercial center within the northwest quadrant is under the jurisdiction of the City of Diamond Bar. The center is home to a Burger King fast food restaurant and a vacant auto dealership. A golf course is located south of the SR-60/SR-57 confluence in the southwest and

southeast quadrants of the interchange, and shopping centers are found along Golden Springs Drive. There are no residential land uses in immediate proximity to the project site. The nearest residential area is located more than 1,500 feet northeast of the project site and topographically separated by hills.

Environmental Consequences

Construction Impacts

No-Build Alternative

The No-Build Alternative would not involve any construction requiring acquisitions or relocations.

Build Alternative

During construction, the Build Alternative would result in temporary, localized, site-specific disruptions for local businesses in the area. These would be related primarily to trucks and equipment; partial and/or complete street and lane closures, as well as detours; increased noise and vibration; lights and glare; and increased amounts of fugitive dust. Because project construction activities would be temporary and the effects would not be substantially different from the same types of nuisance-like effects associated with typical construction activities throughout Southern California, no substantial adverse effects would occur.

Operational Impacts

No-Build Alternative

Under the No-Build Alternative, there would be no change to existing conditions, and thus, there would be no effect related to relocations or acquisitions from project operations.

Build Alternative

The Build Alternative would not result in the temporary or full acquisition of any residential parcels. Furthermore, there are no sensitive residential or community land uses in the project area. No residential acquisitions or displacements would occur as a result of the proposed project. However, an existing driveway from Grand Avenue to one non-residential property, a fast food restaurant (Burger King), would be closed as a result of the Build Alternative. The fast food restaurant serves mostly commuters and other travelers on SR-60, SR-57, and Grand Avenue. Access to Burger King from Grand Avenue would be reconfigured as a result of the Build Alternative. No relocation or displacement of businesses would occur. Closure of the Burger King driveway from Grand Avenue would be required to comply with guidelines from Caltrans' *Highway Design Manual*. If it is determined that the remaining access points would be inadequate per emergency fire code standards, additional access would be provided from Old Brea Canyon Road, and a mountable curb for emergency vehicle access from Grand Avenue could be constructed. The parcel to the south of the Burger King property would be acquired to construct the on-ramp. This parcel is

currently vacant. While a sliver take would be required at the Burger King property, no parking areas or buildings would be affected. Table 2-4 lists additional information on each of the parcels adjacent to the proposed on-ramp.

While no relocation is expected to occur as a result of the proposed project, in accordance with the Uniform Act, relocation assistance would be provided to eligible recipients. The Uniform Act provides for the fair and equitable treatment of persons whose property is acquired as a result of federally funded projects. The programs and assistance provided under the Uniform Act shall be available to all eligible recipients without discrimination.

The proposed project would not result in acquisitions or displace residents. It is at least 1,500 feet away from the nearest residential neighborhood. No substantial change in either the pattern or rate of land use and development is expected in the study area as a result of this project. If the removal of access from Grand Avenue to the existing Burger King property would result in adverse impacts, additional access would be provided off of Old Brea Canyon Road. With implementation of these measures, potential economic impacts would be minimized, and no substantial adverse effects would occur.

According to the county assessor's information in Table 2-4, the Burger King parcel is approximately 1.08 acres.⁴ The Build Alternative would require only 0.004 acre from the Burger King parcel and therefore would not substantially affect the majority of the usable space on the parcel. In addition, existing access from Old Brea Canyon Road would remain open. The only parcel to be acquired is vacant and undeveloped; therefore, no adverse effect on property values would occur through its acquisition.

Because proximity to a highway corridor and associated structures has been an existing condition for affected businesses in the study area, new impacts on property values are not likely to be significant. Furthermore, the Build Alternative could increase property values due to reduced congestion with construction of the on-ramp improvements. Furthermore, if the NFL stadium project is constructed, property values could increase in conjunction with the expected growth in commercial development.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA. However, the mitigation measure below appears warranted given the potential effects/impacts described above.

REL-1 After closure of the driveway from Grand Avenue, if it is determined that the remaining access points would be inadequate per emergency fire code standards, additional access would be provided from Old Brea Canyon Road, and a mountable curb for emergency vehicle access from Grand Avenue could be constructed.

⁴ Los Angeles County Office of the Assessor. 2009. *Property Assessment Information System, Parcel Viewer*.

Table 2-4. Parcels Zoned for Commercial Use Adjacent to the Proposed On-Ramp

Assessor's Parcel Number (APN)	Location/Address	Current Use	Size	Project Impact
8719-020-001	Location: South of Grand Avenue/Old Brea Canyon Road intersection Address: 525 Grand Avenue, Diamond Bar	Currently vacant; former Diamond Bar Honda auto dealership	Approx. 2.34 acres	No Impact
8719-020-006	Location: South of APN 8719-020-001 Address: 527 Grand Avenue, Diamond Bar	Burger King fast food restaurant	Approx. 1.08 acres	Closure of existing access driveway off Grand Avenue, including acquisition of approx. 0.004 acre adjacent to this driveway
8719-020-007	Location: South of APN 8719-020-006 and to the north; adjacent to SR-60 between Old Brea Canyon Road and Grand Avenue Address: No address available	Vacant land	Approx. 1.14 acres	Acquisition of this parcel to construct on-ramp from Grand Avenue to westbound SR-60

Sources: Los Angeles County Office of the Assessor, 2009; City of Industry General Plan Land Use Map, 1971; ICF Jones & Stokes, 2009a.

2.1.3.3 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Clinton on February 11, 1994. This executive order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The definition of "low income" is based on Department of Health and Human Services poverty guidelines. For 1999, a family of four with an annual income of \$17,029 or less was in the low-income category.

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

Affected Environment

After a review of U.S. census data, it was concluded that no minority or low-income population is present in the project area. Data from the 2000 census show a total population of 777 for the City of Industry. In the City of Industry, the majority of the population is white (54.6 percent), and the median household income is \$49,423, which is substantially above the low-income level. The nearest residential areas or population groups are located more than 1,500 feet northeast of the project site within the City of Diamond Bar. According to the 2000 census, Diamond Bar's total population is 56,287. Of that population, 41 percent is white and 42.8 percent is Asian. Diamond Bar has a median household income of \$68,871, which is very high in comparison to low-income levels.

The project site is not located in an area that has been defined as a neighborhood, nor does the surrounding area exhibit characteristics such as residences, schools, or pedestrian activity. In addition, the golf course in the southwest quadrant and the fast food restaurant in the northwest quadrant of the Grand Avenue/SR-60 interchange serve the regional population and commuters on Grand Avenue, SR-60, and SR-57. No neighborhoods would be directly affected by the proposed project. Therefore, this project is not subject to the provisions of Executive Order 12898.

Environmental Consequences

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction and would not change existing conditions in the vicinity of the project site.

Build-Alternative

There are no sensitive residential or community land uses in the project area. Furthermore, the proposed project is expected to improve local traffic congestion and circulation. No potentially adverse effects related to air quality, traffic, noise, visual resources, or any other resource areas are anticipated. In accordance with Title IV of the Civil Rights Act, efforts will be made to involve communities in the surrounding area in the environmental review process. As such, there would be minimal potential for disproportionate adverse effects and environmental justice impacts.

Avoidance, Minimization, and/or Mitigation Measures

Given the discussion and analysis above, the proposed Build Alternative would not cause disproportionately high or adverse effects under NEPA or significant impacts under CEQA on any minority or low-income population, as per Executive Order 12898.

2.1.4 Utilities/Emergency Services

2.1.4.1 Affected Environment

Utilities

Public utilities in the vicinity of the project site for the proposed westbound Grand Avenue on-ramp provide sewer and water, electrical, natural gas, telephone, and communication services. The Los Angeles County Sanitation District (LACSanD) operates and maintains the sewer lines. The Walnut Valley Water District (WVWD), as a member agency of Metropolitan Water District of Southern California (MWD), provides potable water to the project area. Electricity is provided by Southern California Edison (SCE), and natural gas services are provided by the Southern California Gas Company (The Gas Company). Cable and telephone services in the project area are provided by several companies.

An existing 10-inch City of Industry sewer line is located beneath Old Brea Canyon Road, and an existing SCE power line easement is found immediately north of Old Brea Canyon Road. An 18-inch WVWD water main and a 20-inch gas line are located beneath Grand Avenue. A 4-inch Southern California Gas Company line is located under Brea Canyon Road.

Emergency Services

The project area is served by LACSD. In addition, the California Highway Patrol (CHP) serves the state highway system, including SR-60 and SR-57, in the project vicinity. The sheriff's primary responding unit to the project area would be from the City of Industry station, located approximately 7.75 miles west of the project site at 150 North Hudson Avenue. The station has a staff of 200 sworn deputies and 50 professional personnel. The Walnut/Diamond Bar station would be the secondary responding unit to the project area, located approximately 1.5 miles north of the project site at 21695 Valley Boulevard. This station has a staff of 111 sworn deputies and 40 professional personnel. Both the Industry and the Walnut/Diamond Bar stations deploy dedicated patrol units to the east side of the City of Industry, which includes the project site. Response time to the project site and its vicinity is typically several minutes but well within established, acceptable response times, which are as follows:

- Emergency Response: 10 minutes,
- Priority Response: 20 minutes, and
- Routine Response: 30 minutes.

In addition, a new satellite sheriff's station has been proposed as part of the future NFL stadium, which would be located less than 1 mile north of the project site.⁵

The project area is also served by the Los Angeles County Fire Department (LACFD). The closest station to the project area is Station 120, located approximately 1 mile southeast of the project site at 1051 S. Grand Avenue. This would be the first responding station. Station 120 is in Battalion 19 and is LACFD headquarters for the Diamond Bar, Walnut, and Pomona area. The station houses one engine, one patrol unit, one water tender, and one vehicle for the

⁵ Lieutenant J. Wolak, Los Angeles County Sheriff's Department.

battalion chief. A total of 15 firefighters work at the station over three separate shifts.⁶ The average response time for Station 120 is approximately 5 minutes, which is in accordance with national guidelines for the first responding unit for fire and emergency medical services (EMS) responses; 8 minutes is the standard for advanced life support (paramedic) units in urban areas.⁷ Depending upon availability and severity of the emergency, the secondary responding unit to the project area would be Station 121, located approximately 2.5 miles northeast of the project site at 346 Armitos Place.⁸ There are also plans to build a new LACFD station approximately 1.2 miles north of the project site at Garcia Lane and Grand Avenue. These plans are contingent upon continued LACFD negotiations with the City of Industry.

Hospital services in the City of Industry are generally provided by Whittier Hospital, at 9080 Colima Road in the City of Whittier, which is approximately 4.4 miles from the project site. The closest hospitals to the project site in case of emergency are San Dimas Community Hospital, located approximately 6 miles north of the project site at 1350 W. Covina Boulevard in the City of San Dimas, and Pomona Valley Hospital Medical Center, located approximately 6 miles northeast of the project site at 1798 N. Garey Avenue in the City of Pomona.

2.1.4.2 Environmental Consequences

Construction Impacts

No-Build Alternative

Under the No-Build Alternative, no changes would be made to the existing conditions in the area. Therefore, there would be no adverse effects related to utilities or police, fire, or emergency medical services. However, future increases in traffic and increasing congestion at the existing interchange could adversely affect emergency vehicle response time under the No-Build Alternative.

Build Alternative

Utilities

There are electrical, sewer, water, and natural gas lines within and/or immediately adjacent to the project's limits of disturbance. Table 2-5 lists the utilities that may be affected during construction of the Build Alternative. The potential for interruption of these services will be considered during the design phase and coordinated with the utility agencies.

Construction of the Build Alternative would not generate excess soil material. However, construction of the Build Alternative would generate construction debris that would require disposal. This temporary impact is not expected to adversely affect the capacity of local landfills, and the Build Alternative would comply with all applicable federal, state, and local statutes related to solid waste disposal. Therefore, the Build Alternative would not result in adverse impacts related to solid waste.

⁶ Engineer Bob Ladjovic, Battalion 19, Station No. 120. Telephone interview conducted August 2009.

⁷ Frank Vidales, Acting Chief, Forestry Division, Prevention Services Bureau, Los Angeles County Fire Department. Response to questionnaire dated October 22, 2009.

⁸ Ibid.

Table 2-5. Utility Impacts

Utility Provider	Type of Utility	Potential Impacts
Los Angeles County Sewer	Sanitary sewer line	An existing 10-inch sewer line is located beneath Old Brea Canyon Road. Realignment of Old Brea Canyon Road would require a portion of the sewer line to be relocated.
Southern California Edison	Overhead electric lines	There is an existing aerial line within the northern portion of the project site. Construction of the westbound Grand Avenue on-ramp would require six poles to be relocated. A utility easement may be required. Electrical service may be affected during construction. Interruption of these services will be considered during the design phase and coordinated with the utility agencies.
Walnut Valley Water District	Potable water transmission lines	An existing 18-inch water main is located beneath Grand Avenue. Protection in place may be required in areas where excavation may occur during project construction.
Southern California Gas Company	Natural gas lines	An existing 20-inch gas line is located beneath Grand Avenue. Protection in place may be required in areas where excavation may occur during project construction.
Southern California Gas Company	Natural gas	An existing 4-inch gas line is located beneath Brea Canyon Road, terminating in the cul-de-sac. Construction of the westbound Grand Avenue on-ramp would require the gas line to be relocated. Gas service may be affected during construction. Interruption of these services will be considered during the design phase and coordinated with the utility agencies.

Utility Provider	Type of Utility	Potential Impacts
Southern California Edison	Telephone	An existing telecommunication line is located on the power poles, and parallels the electrical line underground. The communication line would need to be relocated.
Verizon	Telephone	Existing telecommunication lines are located under Grand Avenue. Construction of the westbound Grand Avenue on-ramp may require the lines to be lowered. No disruption to service is anticipated.

Source: Sage Environmental and WKE, Inc, 2009.

Emergency Services

Police Protection. Sherriff's patrol cars responding to service calls in the project vicinity may experience delays on southbound Grand Avenue due to construction work in the right lane. Police vehicles would experience delays on northbound Grand Avenue and at the SR-60 eastbound on-ramp, which is where a second left-turn lane would be constructed. However, traffic delays would occur only during construction and only during certain construction activities. Emergency vehicle access to SR-60 would not be affected during construction, and no lane closures or detours are anticipated. The desired response time in the area for police services is, in general, met or exceeded by the emergency service providers;⁹ therefore, a modest increase in emergency response times resulting from construction activities along Grand Avenue would not increase response times to unacceptable levels. A less-than-significant impact on police protection services would occur.

Fire Protection. Although no road closures are anticipated, Grand Avenue and adjacent on- and off-ramps may experience temporary delays during construction. Construction work on Grand Avenue could increase traffic congestion and delay emergency vehicles, which would temporarily increase response times for fire services. According to local fire personnel, it is common for traffic to queue on both the eastbound and westbound SR-60 on-ramp. Construction activities would have the potential to increase peak-hour delays; however, in the event that traffic congestion or queues do increase at either on-ramp, emergency fire personnel would use emergency vehicle lanes to access SR-60.¹⁰ Major construction on southbound Grand Avenue would not affect emergency fire service because Station 120 typically uses northbound Grand Avenue to access SR-60. Since construction-related impacts would be temporary, impacts to emergency fire services would not be adverse.

⁹ Lieutenant J. Wolak, Los Angeles County Sherriff's Department.

¹⁰ Engineer Bob Ladjevic, Battalion 19, Station No. 120, Los Angeles County Fire Department.

Operational Impacts

The Build Alternative does not include new residential, commercial, or industrial uses that would require additional utilities or emergency services or the expansion of water and wastewater facilities. The Build Alternative would improve traffic operations on Grand Avenue at the SR-60 interchange. The Build Alternative would add a more direct on-ramp to westbound SR-60, thereby aiding future traffic flow by reducing and managing congestion. To the extent that the Build Alternative achieves this objective, operational impacts on utilities as well as response times for emergency service providers in the project area would be beneficial. Therefore, no permanent operational impacts on utilities or emergency services would occur as a result of the project.

2.1.4.3 Avoidance, Minimization, and/or Mitigation Measures

Though impacts to utility services are not expected to be adverse, the following minimization measure is nonetheless recommended for construction near a major utility line:

- Should construction need to occur at or near a major utility line, the utility line shall be protected with shoring to ensure that any disruption impacts would be minimized.

2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.1.5.1 Regulatory Setting

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered by 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 that is available to the general public is provided to persons with disabilities.

2.1.5.2 Affected Environment

The key sources of data used in the preparation of this section are the *Traffic Study Report for the Grand Avenue at SR-60/SR-57 Westbound Slip Ramp Project* (May 2010) and the *Project Study Report for the SR-60/SR-57 Confluence Project at Grand Avenue* (March 2009). The following scenarios were analyzed:

- Existing (2009) traffic conditions,
- 2013 with- and without-project conditions (Ambient Growth to 2013),
- 2016 with- and without-project conditions (Partial Buildout of Land Use), and
- 2035 with- and without-project conditions (Planning Horizon).

The traffic study report evaluated two alternatives: the No-Build Alternative, which makes no changes to the existing configuration, and the Build Alternative, which includes a new on-ramp to SR-60.

The traffic study evaluated existing traffic conditions at two intersections, which are listed below and shown in Figure 2-3:

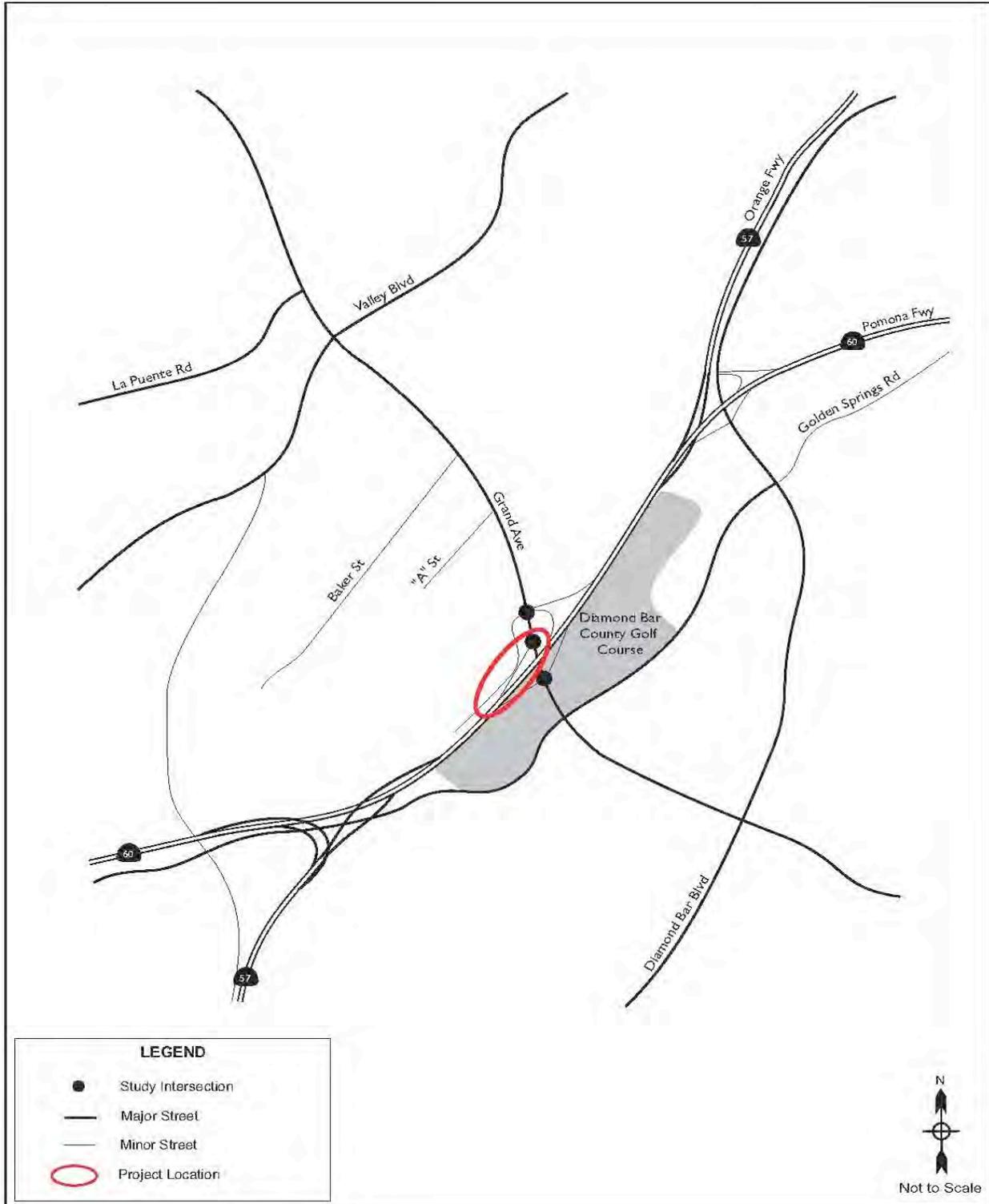
- Grand Avenue at the SR-60 westbound ramps, and
- Grand Avenue at the SR-60 eastbound ramps.

Existing Street System

State Route 60

SR-60, also known as the Pomona Freeway, is included in the National Highway System (NHS) and has been recognized as an essential link in a multi-modal transportation network. SR-60 is an interregional freeway, which originates at Interstate 5 in Los Angeles County and extends approximately 68 miles to Interstate 10 in Riverside County.

Figure 2-3. Traffic Study Intersections within the Project Vicinity



Source: KOA Corporation, 2010.

Grand Avenue

Grand Avenue is a major north/south arterial road, providing service to the City of Industry, Diamond Bar, Walnut, and West Covina. The existing Grand Avenue interchange is a diamond configuration on the south side of SR-60; a cloverleaf configuration is used in the northeast quadrant. Grand Avenue is a four- to six-lane arterial street that provides a full interchange at SR-60. It provides four lanes north of the interchange and six lanes south of the interchange. Grand Avenue is currently striped as a four-lane roadway with left-turn lanes on the freeway overcrossing.

North of the freeway ramps, Grand Avenue widens to 84 feet curb to curb and provides additional travel lanes. Land along both sides of Grand Avenue in this area is largely vacant north of SR-60. Grand Avenue crosses two railroad tracks, intersects Valley Boulevard, then continues northward to the City of West Covina and beyond. To the south, Grand Avenue is a major arterial in the City of Diamond Bar, with intersections at Golden Springs Road and Diamond Bar Boulevard. Grand Avenue continues southward to Chino Hills Parkway and SR-71 in Chino.

South of the interchange, Grand Avenue provides six lanes to Diamond Bar Boulevard but becomes four lanes southeast of the boulevard. Both legs of Grand Avenue are strategically located to serve relatively long trips. It is one of the few arterials that pass through Industry Hills to the north and Chino Hills to the south and east. In particular, it carries significant traffic volumes to the City of Chino Hills as an alternate route to SR-60.

Methodology

Traffic conditions for the traffic study report were analyzed using the principles or the specific analysis methods contained in the *Highway Capacity Manual*, 2000 edition, a publication of the Transportation Research Board, a research agency associated with the federal government. These methods of analysis are based primarily on the concept of traffic LOS. LOS is a qualitative measure used to describe traffic flow conditions, ranging from excellent (LOS A) to overloaded (LOS F) conditions.

Chapter 9 of the HCM is devoted to analysis of signalized intersections. The methodology in this chapter is based on measurements or forecasts of delay for traffic using all approaches to an intersection. Table 2-6 provides descriptions of LOS conditions and shows the relationship between LOS and the performance measures for signalized and unsignalized intersections.

All LOS analyses in the traffic study report were performed by evaluating peak-hour conditions at the identified intersections in the project area. LOS calculations for signalized intersections were performed using the “operational analysis” procedure, as defined in the HCM. This technique uses 1,900 passenger cars per hour of green per lane (pcphgpl) as the maximum saturation flow of a single lane at an intersection, with a 2-second loss time per phase.

Table 2-6. Level of Service

Levels of Service	Description	Signalized Intersection Delay (seconds per vehicle)	Unsignalized Intersection Delay (seconds per vehicle)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	< 10	< 10
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	> 10 and < 20	> 10 and < 15
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	> 20 and < 35	> 15 and < 25
D	Fair operation. Vehicles are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues.	> 35 and < 55	> 25 and < 35
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	> 55 and < 80	> 35 and < 50
F	Forced flow. Represents jammed conditions. Backups form locations downstream or on cross streets that may restrict or prevent the movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go traffic flow.	> 80	> 50

Source: Transportation Research Board. 2000. *Highway Capacity Manual*. Special Report 209. Washington, D.C.

This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition (i.e., the percentage of trucks), and shared lane movements (e.g., through and right-turn movements from the same lane). LOS for signalized intersections is based on the average time (seconds) that vehicles on intersection approaches are stopped, slowed, or delayed.

Significant Impact Criteria

For intersections within Caltrans jurisdiction, deficient conditions are identified as intersections operating at LOS E or F, as indicated by an average delay of more than 55 seconds. A project will be deemed to create a significant impact if the project alone causes an intersection at LOS D or better to move to LOS E or F. If the location is already at LOS E or F and the project causes average delay to increase, the project's impact may also be significant.

Existing Traffic Operations

Traffic operations and impact analyses for the study intersections were conducted using intersection LOS and average delay as evaluation criteria. The morning and evening peak-hour LOS analyses at the two study intersections were based on the existing traffic volume counts and the methodologies described previously. All signalized intersection LOS calculations for this study were performed using the Synchro intersection analysis software tool. This program is very similar to the HCM methodology, but Synchro considers the effect of nearby signalized intersections in a manner that is slightly different from the HCM methodology.

The freeway interchange at Grand Avenue is currently approaching capacity. The 2006 average daily traffic (ADT) volume for Grand Avenue is shown in Table 2-7.

Existing Level of Service

LOS calculations were based on existing peak-hour turning movement volumes. Queue lengths for off-ramps were also evaluated for this analysis (see Table 2-8). Intersection LOS calculation worksheets for existing traffic conditions are provided in Appendix C of the traffic study report. Results of the analysis are presented in Table 2-8. An examination of the data in this table indicates that both of the study area intersections are currently operating acceptably at LOS D or better in the AM peak hour and LOS C or better in the PM peak hour.

Table 2-7. Existing 2006 Average Daily Traffic Volumes, Grand Avenue

	Average Daily Traffic	AM Peak Hour	PM Peak Hour
Grand Avenue, north of SR-60 westbound ramps	26,450	2,645	2,342

Source: WKE Inc., March 2009.

Table 2-8. Project Study Intersections—2009 Existing Conditions

Study Intersections	2009 Existing Conditions					
	AM Peak Hour			PM Peak Hour		
	Queue Length ¹	Delay ²	LOS	Queue Length	Delay (sec)	LOS
SR-60/Grand Avenue WB ramps	338 ft (WB off-ramp) 307 ft (NB Grand)	46	D	148 ft (WB off-ramp) 487 ft (SB Grand)	29.7	C
SR-60/Grand Avenue EB ramps	145 ft (EB off-ramp)	23.2	C	123 ft (EB off-ramp)	14.6	B
Notes:						
¹ 95 th percentile queue lengths for critical approaches are given as indicated.						
² Delay in seconds/vehicle average.						
NB = northbound; SB = southbound; WB = westbound; EB = eastbound.						

Source: KOA Corporation, May 2010.

Existing Vehicle Miles Traveled

In addition to LOS, the traffic study report provides existing conditions data pertaining to vehicle miles traveled (VMT). Table 2-9 presents VMT and speed data for the interchange under existing conditions. The AM peak-hour volume, PM peak-hour volume, and speed data are reported for all traffic movements potentially affected by the proposed improvements. Reported speed data are derived from Synchro's Measures of Effectiveness.

Table 2-9. Vehicle Miles Traveled, 2009 Existing Conditions

Street and Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,069	668	11
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,023	1,264	43
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,267	236	22
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	1,783	333	11
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,208	275	9
Grand Ave NB	Golden Springs to SR-60 EB	0.23	1,542	350	23
SR-60 WB Loop	Grand Ave to SR-60	0.43	699	301	25
SR-60 WB Slip	Grand Ave to SR-60	N/A	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,173	293	16
SR-60 EB Off	SR-60 to Grand Ave	0.23	802	184	14
SR-60 EB On	Grand Ave to SR-60	0.21	658	138	24
Total Vehicle Miles Traveled				4,043	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,663	1,039	10
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	1,198	749	44
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,428	266	26
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	1,173	219	18
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,399	318	8
Grand Ave NB	Golden Springs to SR-60 EB	0.23	1,170	266	26
SR-60 WB Loop	Grand Ave to SR-60	0.43	866	372	30
SR-60 WB Slip	Grand Ave to SR-60	N/A	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	647	162	20
SR-60 EB Off	SR-60 to Grand Ave	0.23	390	90	18
SR-60 EB On	Grand Ave to SR-60	0.21	773	162	23
Total Vehicle Miles Traveled				3,643	

Source: KOA Corporation, May 2010.

Analysis of the data presented in the table indicates that southbound Grand Avenue tends to be more congested and move at slower speeds than either northbound Grand Avenue or the SR-60 on- and off-ramps.

Existing Transit Service

Foothill Transit and the Orange County Transportation Authority (OCTA) provide public transit services near the project area. The following transit lines are located within 0.5 mile of the study area:¹¹

- Foothill Transit – Line 482 is an east/west route that travels from the City of El Monte to the City of Pomona. Its stops are primarily along Golden Springs Drive, including the intersection with Grand Avenue, approximately 0.2 mile south of the project site;
- Foothill Transit – Line 493 provides service between the City of Los Angeles and Phillips Ranch, just east of the City of Diamond Bar. This line also includes stops along Golden Springs Drive, including the Grand Avenue intersection;
- Foothill Transit – Lines 853 and 854 are east/west lines that travel from Copley Drive to Diamond Bar Ranch High School. Both lines use Golden Springs Drive and have stops at the Grand Avenue intersection;
- Foothill Transit – Line 497 is an east/west route that travels from the City of Los Angeles to the Chino Transit Center. This line uses SR-60 for the majority of its travel but does not include stops near the study area; and
- OCTA – Route 757 is a north/south route that travels from Orange County to the Diamond Bar park and ride, located approximately 1.5 miles north of the project site. This line uses SR-57 for the majority of its travel but does not include stops within the study area.

Safety

As reported in the *Project Study Report for the SR-57/SR-60 Confluence Project at Grand Avenue* (March 2009), accident data were obtained from Caltrans' TASAS for the Grand Avenue on- and off-ramps to SR-60 between the SR-57/SR-60 west junction and the SR-57/SR-60 east junction for a 36-month period between October 1, 2004, and September 30, 2007. The actual accident rates were compared with average accident rates for similar highway facilities throughout the state. These are presented in Table 2-10.

Data for this period indicate that the overall accident rate within this segment of Grand Avenue is lower than what would be expected based on a statewide average. However, the total average accident rate for the eastbound Grand Avenue on- and off-ramps was higher than the statewide average for similar transportation facilities. There were 57 reported accidents; no fatalities occurred. The predominant type of accident was a rear-end accident for the eastbound and westbound Grand Avenue on-ramps.

¹¹ Foothill Transit. n.d. *System Map*. Available: <<http://foothilltransit.org/SystemMap/>>. Accessed: July 2010.

Table 2-10. Accident Rates, June 1, 2006, through March 31, 2009

Location ¹	Post Mile	Statistical Data		Actual Accident Rates (MVM) ²			Average Accident Rates (MVM)		
		Total Number of Accidents	Fatal	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
WB Grand Avenue off-ramp	R24.712	12	0	0.000	0.29	1.17	0.004	0.42	1.20
WB Grand Avenue on-ramp	R24.551	7	0	0.000	0.15	0.51	0.002	0.26	0.75
EB Grand Avenue off-ramp	R24.277	35	0	0.000	0.46	2.68	0.004	0.42	1.20
EB Grand Avenue on-ramp	R24.552	21	0	0.000	0.34	1.81	0.002	0.26	0.75

¹ Grand Avenue (Bridge No. 53-1864) between the westbound and eastbound ramps is included in the ramp data.
² MVM = million vehicle miles.

Source: Grand Avenue at SR-60/SR-57 Westbound Slip Ramp Draft Project Report, August 2010.

Rear-end accidents are associated with a sudden attempt to stop when a roadway has exceeded capacity and typically occur in chokepoint areas; rear-end accidents are more likely to occur during peak hours because of the amount of congestion.

Pedestrian and Bicycle Facilities

Currently, the City of Diamond Bar General Plan’s Mobility Element indicates that one designated bicycle route is located within 0.5 mile of the project site along Golden Springs Drive.¹² This bicycle route is designated as a Class II Bikeway, which requires separate striped lanes and signs for bicyclists along the roadway. The bikeway provides restricted one-way travel for bicycles.

2.1.5.3 Environmental Consequences

Construction Impacts

No-Build Alternative

Under the No-Build Alternative, existing traffic and transportation conditions would not change. Therefore, no construction impacts related to traffic and transportation would occur.

¹² City of Diamond Bar General Plan, Mobility Element. Adopted: July 25, 1995.

Build Alternative

Construction of the proposed Build Alternative could require temporary and intermittent lane or ramp closures, which could increase congestion and diminish access to the SR-60/SR-57 junction and the surrounding area. However, because no road closures are anticipated during peak periods and because the impacts would be temporary and limited to the construction period, the effects would not be considered significant or adverse. Nonetheless, these temporary road closures would be accounted for and coordinated as needed in the project's Traffic Management Plan for the construction phase.

Detours

During construction, access to SR-60 on- and off-ramps would be maintained. Partial lane closures on southbound Grand Avenue are expected; however, this would not require detours or other alternative means of access. When feasible, work would take place during off-peak hours to minimize impacts from partial lane closures and construction.

Operational Impacts

No-Build Alternative

Under the No-Build Alternative, existing traffic and transportation conditions would not change. Deficiencies in operational capacities would continue to occur, and no improvements would be made to correct these existing conditions. AM and PM peak-hour analyses were performed to assess LOS conditions and VMT for each of the proposed project's milestone years (2013, 2016, and 2035). The analyses were performed by examining peak-hour LOS at the identified intersections in the project area. Future traffic volumes for 2013 are based on ambient growth above existing conditions. Future volumes for 2016 were derived from previous studies completed for the IBC. Future traffic volumes for 2035 are based on the SCAG RTP 2008 model.

No-Build Intersection Analysis

Intersection LOS, delay, and queue lengths for project-site intersections are summarized below in Table 2-11. An examination of the 2013 data in Table 2-11 indicates that the westbound SR-60/Grand Avenue on-ramp intersection would operate at an unacceptable LOS of F in the AM peak hour. During the PM peak hour, the eastbound SR-60/Grand Avenue on-ramp intersection would also operate at LOS F, and the same trend would continue in 2016. Additionally, by 2035, both intersections would operate at an unacceptable LOS during both the AM and PM peak hours. Therefore, without the proposed improvements, both study intersections would operate at an unacceptable LOS in the future, resulting in increased delays and congestion on surrounding roadways.

No-Build Alternative VMT Analysis

Tables 2-12, 2-13, and 2-14 present the results of VMT projections for 2013, 2016, and 2035 without-project conditions. The tables include data for number of vehicles, distance, VMT, and speed.

Table 2-11. 2013, 2016, and 2035 Intersection Traffic Conditions without the Project

No-Build Alternative	AM Peak Hour			PM Peak Hour		
	Queue Length ¹	Delay ²	Level of Service	Queue Length ¹	Delay ²	Level of Service
Future Year 2013						
WB SR-60/Grand Avenue off-ramp intersection	747 ft (WB off-ramp) 1,024 ft (NB Grand Ave)	114.3	F	279 ft (WB off-ramp) 646 ft (SB Grand Ave)	43.9	D
EB SR-60/Grand Avenue off-ramp intersection	613 ft (EB off-ramp)	45.3	D	340 ft (EB off-ramp)	137.4	F
Future Year 2016						
WB SR-60/Grand Avenue off-ramp intersection	742 ft (WB off-ramp) 1,057 ft (NB Grand Ave)	127.8	F	290 ft (WB off-ramp) 714 ft (SB Grand Ave)	45.2	D
EB SR-60/Grand Avenue off-ramp intersection	617 ft (EB off-ramp)	51.8	D	345 ft (EB off-ramp)	143.3	F
Future Year 2035						
WB SR-60/Grand Avenue off-ramp intersection	941 ft (WB off-ramp) 1,046 ft (NB Grand Ave)	273.1	F	535 ft (WB off-ramp) 1,515 ft (SB Grand Ave)	359.3	F
EB SR-60/Grand Avenue off-ramp intersection	838 ft (EB off-ramp)	121.4	F	561 ft (EB off-ramp)	96.4	F
Notes:						
¹ 95 th percentile queue lengths for critical approaches are given as indicated.						
² Delay in seconds/vehicle average.						

Source: KOA Corporation, May 2010.

Table 2-12. Vehicle Miles Traveled, without the Project (No-Build Alternative), 2013

Street, Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (Miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,274	796	6
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,704	1,690	31
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,338	250	15
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	2,251	420	4
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,303	296	7
Grand Ave NB	Golden Springs to SR-60 EB	0.23	1,759	400	2
SR-60 WB Loop	Grand Ave to SR-60	0.43	811	349	22
SR-60 WB Slip	Grand Ave to SR-60	N/A	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,489	372	9
SR-60 EB Off	SR-60 to Grand Ave	0.23	1,102	253	8
SR-60 EB On	Grand Ave to SR-60	0.21	715	150	22
Total Vehicle Miles Traveled				4,976	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	2,338	1,461	4
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	1,528	955	19
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,999	373	5
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	1,435	268	13
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,427	324	7
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,447	556	3
SR-60 WB Loop	Grand Ave to SR-60	0.43	1,104	475	26
SR-60 WB Slip	Grand Ave to SR-60	N/A	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	775	194	16
SR-60 EB Off	SR-60 to Grand Ave	0.23	470	108	4
SR-60 EB On	Grand Ave to SR-60	0.21	2,048	430	21
Total Vehicle Miles Traveled				5,144	

Source: KOA Corporation, May 2010.

Table 2-13. Vehicle Miles Traveled, without the Project (No-Build Alternative), 2016

Street, Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (Miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,300	813	5
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,758	1,724	20
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,416	264	15
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	2,276	425	4
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,329	302	7
Grand Ave NB	Golden Springs to SR-60 EB	0.23	1,794	408	2
SR-60 WB Loop	Grand Ave to SR-60	0.43	828	356	21
SR-60 WB Slip	Grand Ave to SR-60	0.27	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,519	380	9
SR-60 EB Off	SR-60 to Grand Ave	0.23	1,124	259	8
SR-60 EB On	Grand Ave to SR-60	0.21	729	153	22
Total Vehicle Miles Traveled				5,082	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	2,386	1,491	4
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	1,559	974	19
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	2,040	381	5
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	1,464	273	13
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,456	331	7
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,497	568	3
SR-60 WB Loop	Grand Ave to SR-60	0.43	1,126	484	26
SR-60 WB Slip	Grand Ave to SR-60	0.27	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	791	198	16
SR-60 EB Off	SR-60 to Grand Ave	0.23	479	110	4
SR-60 EB On	Grand Ave to SR-60	0.21	2,090	439	21
Total Vehicle Miles Traveled				5,249	

Source: KOA Corporation, May 2010.

Table 2-14. Vehicle Miles Traveled, without the Project (No-Build Alternative), 2035

Street, Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (Miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,639	1,024	3
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	3,677	2,298	19
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,865	348	10
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	3,026	565	2
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,751	398	3
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,258	513	3
SR-60 WB Loop	Grand Ave to SR-60	0.43	843	362	21
SR-60 WB Slip	Grand Ave to SR-60	N/A	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,888	472	5
SR-60 EB Off	SR-60 to Grand Ave	0.23	1,427	328	4
SR-60 EB On	Grand Ave to SR-60	0.21	773	162	19
Total Vehicle Miles Traveled				6,471	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	3,725	2,328	2
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,597	1,623	21
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	2,761	515	3
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	2,342	437	2
Grand Ave SB	SR-60 EB to Golden Springs	0.23	2,204	501	3
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,169	493	4
SR-60 WB Loop	Grand Ave to SR-60	0.43	1,926	828	25
SR-60 WB Slip	Grand Ave to SR-60	N/A	N/A	N/A	N/A
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,157	289	4
SR-60 EB Off	SR-60 to Grand Ave	0.23	843	194	4
SR-60 EB On	Grand Ave to SR-60	0.21	1,227	258	20
Total Vehicle Miles Traveled				7,466	

Source: KOA Corporation, May 2010.

There are a number of geometric and operational deficiencies at the westbound and eastbound SR-60/Grand Avenue ramp intersections. According to the LOS analyses in the traffic study report, the No-Build Alternative would result in severe congestion at the interchange in the near future unless improvements are made. Both ramp intersections would operate at a poor LOS by 2013, and that condition that would continue through 2016. Conditions would worsen to LOS F by 2035. Without improvements to the interchange, traffic at both Grand Avenue off-ramps would be subject to severe backup in the future.

Build Alternative

Under the Build Alternative, the existing SR-60 westbound loop ramp at Grand Avenue would be augmented by a westbound slip ramp. The westbound slip ramp would be used by southbound vehicles on Grand Avenue instead of the westbound loop ramp, which is currently accessed after making a left turn at the signalized intersection of Grand Avenue and the SR-60 westbound ramps. Upon completion of the westbound slip ramp, the westbound loop ramp would be used by traffic traveling from northbound Grand Avenue to westbound SR-60.

The project would also include construction of a second southbound left-turn lane from Grand Avenue to eastbound SR-60. The resulting dual left-turn pocket would replace the existing single left-turn pocket.

The Build Alternative would improve traffic operations on Grand Avenue from Baker Parkway to the interchange at SR-60, increase capacity at the Grand Avenue interchange, reduce mainline traffic weaving between Grand Avenue and the SR-57/SR-60 interchange, and improve overall safety along Grand Avenue.

Build Alternative Future-Year Traffic Analysis

Intersection LOS, delay, and queue lengths for the study intersections in 2013, 2016, and 2035 are summarized below in Table 2-15. LOS calculations were based on peak-hour turning movement volumes for each of the Grand Avenue ramps with the proposed project improvements included. Calculations of 2035 traffic conditions also include future planned improvements.

An examination of the data in Table 2-15 indicates that the two study intersections are expected to operate acceptably in both the AM and PM peak hours through 2013 with completion of the proposed project. This can be considered an improvement over existing conditions; projected LOS without the project would be between D and F by 2013. Conditions would be improved in 2016 with the project when compared with LOS without the project. By 2035, the westbound ramp is projected to operate at LOS F with construction of the proposed improvements alone; however, delay with the proposed project would be substantially reduced. Furthermore, if future planned improvements to the intersection are considered (pending approval of the SR-57/SR-60 Confluence at Grand Avenue Project [see Table 2-1, Approved and Pending Cumulative Projects]), the westbound ramp's LOS is expected to improve to D or better. Similarly, the eastbound ramp is projected to operate at LOS F in 2035 with construction of the proposed improvements alone but would improve to LOS B with construction of other future planned improvements.

Table 2-15. 2013, 2016, and 2035 Intersection Traffic Conditions with the Project

Build Alternative	AM Peak Hour			PM Peak Hour		
	Queue Length ¹	Delay ²	Level of Service	Queue Length ¹	Delay ²	Level of Service
Future Year 2013						
WB SR-60/Grand Avenue off-ramp intersection	580 ft (WB off-ramp)	40.5	D	292 ft (WB off-ramp)	22	C
	763 ft (NB Grand Ave)			129 ft (SB Grand Ave)		
EB SR-60/Grand Avenue off-ramp intersection	377 ft (EB off-ramp)	20.6	C	181 ft (EB off-ramp)	24.4	C
Future Year 2016						
WB SR-60/Grand Avenue off-ramp intersection	515 ft (WB off-ramp)	41.1	D	280 ft (WB off-ramp)	23.4	C
	741 ft (NB Grand Ave)			507 ft (SB Grand Ave)		
EB SR-60/Grand Avenue off-ramp intersection	444 ft (EB off-ramp)	26.6	C	204 ft (EB off-ramp)	71.5	E
Future Year 2035						
WB SR-60/Grand Avenue off-ramp intersection	864 ft (WB off-ramp)	123.2	F	498 ft (WB off-ramp)	316	F
	883 ft (NB Grand Ave)			1,023 ft (SB Grand Ave)		
EB SR-60/Grand Avenue off-ramp intersection	667 ft (EB off-ramp)	59.9	E	519 ft (EB off-ramp)	102.4	F
Notes:						
¹ 95 th percentile queue lengths for critical approaches are given as indicated.						
² Delay in seconds/vehicle average.						

Source: KOA Corporation, May 2010.

As illustrated by Tables 2-16, 2-17, and 2-18, the Build Alternative would improve peak-hour VMT, particularly during PM peak hours. In addition, VMT and speed are not expected to change on the freeway mainline as a result of the Build Alternative. However, mainline speeds are expected to improve significantly with construction of future interchange improvement projects, such as the SR-57/SR-60 Confluence at Grand Avenue Project, which shall be analyzed in future environmental analysis documents.

ADA. The Build Alternative would be constructed in compliance with all provisions of the ADA and would follow any applicable design requirements. Sidewalks would be constructed for pedestrian access, with curb ramps at the intersections designed in compliance with ADA requirements.

Public Transit Services. Construction and operation of the proposed project would not interfere with existing or future public transit service in the vicinity of the project site.

Safety. The proposed westbound ramp improvements would be expected to lessen traffic congestion within the project limits and therefore reduce the number of accidents associated with congestion. The proposed westbound slip ramp would connect to an auxiliary lane to SR-60, thereby reducing the number of lane changes. As such, the Build Alternative would be unlikely to create new safety hazards for pedestrians or motorists and would result in fewer traffic accidents because of reduced congestion at on-ramp intersections.

Non-motorized and Pedestrian Features. No pedestrian or bicycle facilities are expected to be affected by the proposed project. Grand Avenue is not designated as a bike route by the city. However, future developments in the surrounding area have the potential to increase non-motorized traffic along Grand Avenue. As discussed previously, sidewalks would be constructed for pedestrian access, with curb ramps at the intersections designed in compliance with ADA requirements.

2.1.5.4 Avoidance, Minimization, and/or Mitigation Measures

No adverse effects under NEPA or significant impacts under CEQA are anticipated during construction. Furthermore, the planned temporary road closures during off-peak hours would be accounted for and coordinated as needed in the project's Traffic Management Plan for the construction phase. No operational adverse effects under NEPA or significant impacts under CEQA are anticipated; therefore, no avoidance, minimization, or mitigation measures are required.

Table 2-16. Vehicle Miles Traveled, with the Project (Build Alternative), 2013

Street, Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (Miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,274	796	22
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,704	1,690	31
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,338	250	12
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	2,251	420	4
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,303	296	10
Grand Ave NB	Golden Springs to SR-60 EB	0.23	1,759	400	14
SR-60 WB Loop	Grand Ave to SR-60	0.43	388	167	23
SR-60 WB Slip	Grand Ave to SR-60	0.27	423	114	31
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,489	372	16
SR-60 EB Off	SR-60 to Grand Ave	0.23	1,102	253	15
SR-60 EB On	Grand Ave to SR-60	0.21	715	150	22
Total Vehicle Miles Traveled				4,909	
VMT Total Difference, Proposed Project – No Project				-67	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	2,338	1,461	22
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	1,528	955	20
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,999	373	13
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	1,435	268	18
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,427	324	7
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,447	556	15
SR-60 WB Loop	Grand Ave to SR-60	0.43	465	200	28
SR-60 WB Slip	Grand Ave to SR-60	0.27	639	173	33
SR-60 WB Off	SR-60 to Grand Ave	0.25	775	194	12
SR-60 EB Off	SR-60 to Grand Ave	0.23	470	108	10
SR-60 EB On	Grand Ave to SR-60	0.21	2,048	430	21
Total Vehicle Miles Traveled				5,042	
VMT Total Difference, Proposed Project – No Project				-102	

Source: KOA Corporation, May 2010.

Table 2-17. Vehicle Miles Traveled, with the Project (Build Alternative), 2016

Street, Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (Miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,300	813	22
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,758	1,724	24
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,416	264	12
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	2,276	425	4
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,329	302	9
Grand Ave NB	Golden Springs to SR-60 EB	0.23	1,794	408	13
SR-60 WB Loop	Grand Ave to SR-60	0.43	396	170	21
SR-60 WB Slip	Grand Ave to SR-60	0.27	432	117	29
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,519	380	15
SR-60 EB Off	SR-60 to Grand Ave	0.23	1,124	259	15
SR-60 EB On	Grand Ave to SR-60	0.21	729	153	22
Total Vehicle Miles Traveled				5,013	
VMT Total Difference, Proposed Project – No Project				-69	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	2,386	1,491	21
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	1,559	974	24
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	2,040	381	13
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	1,464	273	18
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,456	331	7
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,497	568	13
SR-60 WB Loop	Grand Ave to SR-60	0.43	474	204	26
SR-60 WB Slip	Grand Ave to SR-60	0.27	652	176	32
SR-60 WB Off	SR-60 to Grand Ave	0.25	791	198	12
SR-60 EB Off	SR-60 to Grand Ave	0.23	479	110	10
SR-60 EB On	Grand Ave to SR-60	0.21	2,090	439	21
Total Vehicle Miles Traveled				5,144	
VMT Total Difference, Proposed Project – No Project				-105	

Source: KOA Corporation, May 2010.

Table 2-18. Vehicle Miles Traveled, with the Project (Build Alternative), 2035

Street, Direction	Street Segment	Distance/Vehicle Miles Traveled/Speed			
		Distance (Miles)	Vehicles	Vehicle Miles Traveled	Speed (mph)
AM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	1,639	1,024	21
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	3,677	2,298	22
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	1,865	348	13
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	3,026	565	2
Grand Ave SB	SR-60 EB to Golden Springs	0.23	1,751	398	3
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,258	513	7
SR-60 WB Loop	Grand Ave to SR-60	0.43	431	185	20
SR-60 WB Slip	Grand Ave to SR-60	0.27	412	111	29
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,888	472	5
SR-60 EB Off	SR-60 to Grand Ave	0.23	1,427	328	5
SR-60 EB On	Grand Ave to SR-60	0.21	773	162	19
Total Vehicle Miles Traveled				6,405	
Total Difference, Proposed Project – No Project				-66	
PM Peak Hour					
Grand Ave SB	Baker Pkwy to SR-60 WB	0.63	3,725	2,328	2
Grand Ave NB	SR-60 WB to Baker Pkwy	0.63	2,597	1,623	22
Grand Ave SB	SR-60 WB to SR-60 EB	0.19	2,761	515	6
Grand Ave NB	SR-60 EB to SR-60 WB	0.19	2,342	437	2
Grand Ave SB	SR-60 EB to Golden Springs	0.23	2,204	501	4
Grand Ave NB	Golden Springs to SR-60 EB	0.23	2,169	493	2
SR-60 WB Loop	Grand Ave to SR-60	0.43	360	155	25
SR-60 WB Slip	Grand Ave to SR-60	0.27	1,566	423	31
SR-60 WB Off	SR-60 to Grand Ave	0.25	1,157	289	3
SR-60 EB Off	SR-60 to Grand Ave	0.23	843	194	4
SR-60 EB On	Grand Ave to SR-60	0.21	1,227	258	20
Total Vehicle Miles Traveled				7,216	
Total Difference, Proposed Project – No Project				-250	

Source: KOA Corporation, May 2010.

2.1.6 Visual/Aesthetics

2.1.6.1 Regulatory Setting

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

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

The proposed project has limited potential to affect visual resources because proposed construction (e.g., for retaining walls, lighting, and utility relocation) would occur within existing developed areas, at elevations that would be generally consistent with or lower than the elevation of the existing Grand Avenue overpass. Given the project features, the setting, and the viewers, a detailed visual impact assessment is not required.

2.1.6.2 Affected Environment

The visual study area refers to the proposed project's ultimate right-of-way and areas outside the right-of-way from where observers might see the project during and after construction.

The existing visual environment was characterized using field surveys of the project site and the immediately surrounding area. The field surveys were photo documented to record the existing visual conditions. Land uses and topography were studied to help characterize the physical environment and establish the project viewsheds. A viewshed is the surface area that is visible from a variety of viewpoints. It extends to all areas that have a view of and from a project site and identifies potential views that a proposed project could affect.

The existing visual setting of the study area is characterized by transportation facilities (SR-60, SR-57, Grand Avenue, Old Brea Canyon Road) and vacant land.

The areas surrounding the study area are characterized by vacant land to the north and Diamond Bar Golf Course to the south. Moderate- and high-density commercial and industrial uses, low- and medium-density residential uses, infrastructure, and urban landscaping are present in the surrounding area. The overall existing visual character of the study area is urban to semi-urban. The surrounding development patterns can be seen in Figure 2-4 as well as the photographs depicting the viewsheds to the west and south in Figures 2-5 through 2-7.

Figure 2-4. Key View Locations

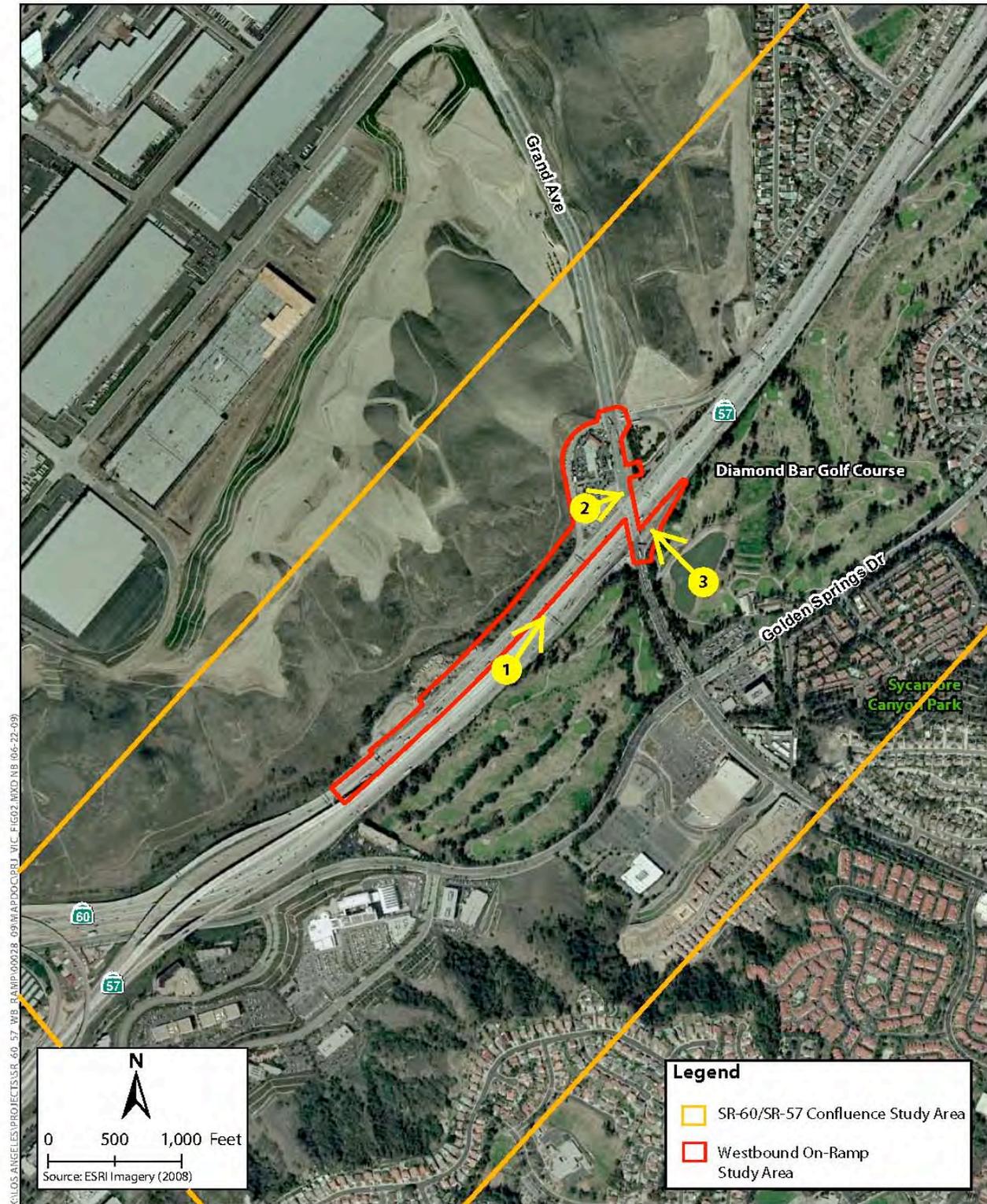


Figure 2-5. Key View 1



Photo 1. Key View 1 - This photo shows the existing condition commuter view from the travel lanes of the eastbound SR-60 approximately 1,000 feet from the Grand Avenue overcrossing.

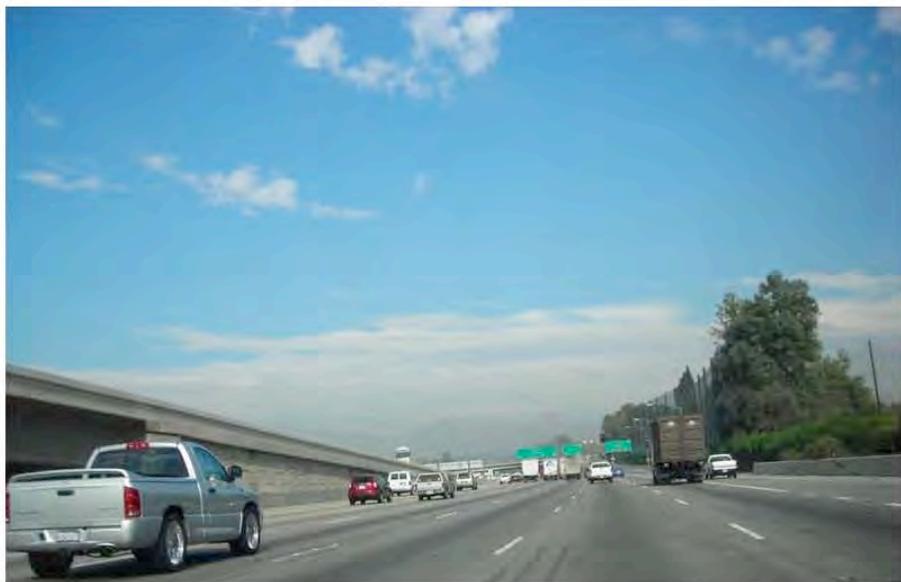


Photo 2. Key View 1 - This photo shows the existing condition commuter view from the travel lanes of the eastbound SR-60 approximately 500 feet from the Grand Avenue overcrossing.

Figure 2-6. Key View 2



Photo 3. Key View 2 - This photo shows the existing condition view from the businesses along the west side of the Grand Avenue overcrossing. The trucks in the foreground are parked in a vacant lot that is the future WB on-ramp location.



Photo 4. Key View 2 - This photo shows the existing condition view from the businesses along the west side of the Grand Avenue overcrossing. The trucks in the foreground are parked in a vacant lot that is the future WB on-ramp location.

Figure 2-7. Key View 3



Photo 5. Key View 3 - This photo shows the existing condition view at the Grand Avenue eastbound SR-60 turn lane. An additional turn lane is proposed at this location. A 5 foot high retaining wall may be constructed along the roadway shoulder within the existing ROW to support the additional lane.



Photo 6. Key View 3 - This photo shows the existing condition view from the golf course. Landscape screening along the golf course boundary obscure the Grand Avenue eastbound SR-60 on-ramp from view.

The project vicinity is regionally referred to as the eastern margin of the San Gabriel Valley. It is an area that consists of valleys and gently rolling hills, which are considered to be part of the Puente Hills. Vegetation in the study area is predominantly a mix of nonnative ruderal landscaping, associated with the right-of-way, and riparian vegetation, associated with Diamond Bar Creek.

Viewer Groups

Viewers range from those who use the roads and the commercial areas within the project limits to those who see the project site from the golf course and the commercial areas outside the project limits. Pedestrians along Grand Avenue and on the Grand Avenue overpass are also considered viewers. A viewer group is a group of persons who might be affected by the introduction of a project into a viewshed because of location, activity, or length of exposure to a view. Viewers can respond differently to the same visual changes because of their visual preferences. Viewer response to physical changes in the visual environment affects the perceived level of change or visual impact. The viewer groups in the project area are

- **Commuters:** SR-60/SR-57 is a major east/west transportation facility that connects eastern Los Angeles County to Riverside County, Arizona, and points beyond. The project study area is visible to people who travel on SR-60/SR-57, including local and regional commuters and travelers. Sensitivity to visual change is low because their exposure to any specific view is brief in duration;
- **Commercial Uses:** The businesses along the west side of Grand Avenue in the study area are generally accessed by automobile rather than by foot or bicycle. These viewer groups would have a moderate sensitivity to visual change; and
- **Golf Course and Commercial Uses Outside the Project Limits:** The proposed eastbound SR-60 turn lane may be visible from the golf course. A 5-foot-high retaining wall may be constructed within the existing right-of-way to support the additional lane. Commercial uses located along the gently rolling Puente Hills south of the project site currently view the existing interchange and proposed improvement areas. These viewer groups would have moderate sensitivity to visual changes.

There are no long-term viewers, such as residents, who would have high sensitivity to changes in views.

2.1.6.3 Environmental Consequences

The proposed project would have a permanent adverse visual impact if it

- blocks scenic views (e.g., mountains, ocean, rivers, or notable manmade structures);
- alters the appearance of designated scenic resources along or near a state- or County-designated scenic highway or vista point;
- creates a substantial level of new light, glare, shade, or shadow in any surrounding area;
- changes the visual quality and character of the existing landscape setting in an area so that a less appealing setting results; or
- is inconsistent with applicable local guidelines or regulations relating to visual resources.

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

- **Vividness:** Vividness is 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); and
- **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).

Visual impacts under the Build Alternative were analyzed for three key views. A key view is a photographic representation of a typical existing viewshed within the study area that incorporates the best range of visual resources as seen by viewer groups. Because it is not feasible to analyze every view in the project study area, three key views were selected that most clearly display the anticipated visual effects of the Build Alternative. The key views represent the primary viewer groups (commuters, commercial within and study area and golf course adjacent to the study area) that would be affected by the project. The key views represent the visual quality of typical existing viewsheds. The locations and directions of the key views are shown in Figure 2-4. Existing key views 1, 2, and 3 are shown in Figures 2-5 through 2-7, respectively.

Construction Impacts

Temporary visual impacts during construction, such as impacts from construction activity, staging sites, truck hauling, excavation activity, k-rail, and detour signage, are anticipated. Construction staging areas would be located within the project limits; temporary construction easements (TCEs) would be located within the City of Industry and the City of Diamond Bar.

Operational Impacts

Key View 1

Key View 1 is from the point of view of commuters traveling east on SR-60/SR-57, approximately 500 feet west of Grand Avenue, as depicted in Figure 2-5, Photo 1. The Build Alternative's new westbound on-ramp from Grand Avenue and associated retaining wall and light poles would be seen from Key View 1. The retaining wall would be approximately 700 linear feet long and up to 20 feet high along the north side of the proposed westbound on-ramp. Three new light poles are proposed for the gore point of the on-ramp. The lights would be hooded/shielded and low-voltage to limit light spillover into adjacent areas. The overall visual quality, character, and experience for commuters would not change substantially under the Build Alternative because the Build Alternative involves changes to an existing transportation facility. The main physical change that would occur in this viewshed would be the addition of the on-ramp. Therefore, adverse visual impacts on this viewshed are not anticipated under the Build Alternative.

Key View 2

Key View 2 is from the point of view of the commercial uses located along the west side of Grand Avenue within the study area, as depicted in Figure 2-6. The Build Alternative's westbound Grand Avenue on-ramp retaining wall would be seen from Key View 2. The retaining wall would be approximately 700 linear feet long and up to 20 feet high along the north side of the proposed westbound on-ramp, effectively screening existing SR-60/SR-57 traffic and the new on-ramp from view. Therefore, the overall visual quality, character, and experience for businesses along the west side of Grand Avenue would improve under the Build Alternative at Key View 2.

Key View 3

Key View 3 is from the point of view of the existing golf course and from the south side of the eastbound on-ramp at Grand Avenue, as depicted in Figure 2-7. Views of this area from the golf course are currently screened by existing golf course landscaping. The overall visual quality, character, and experience for the existing golf course and other commercial uses would not change under the Build Alternative. Therefore, adverse visual impacts on this viewshed are not anticipated under the Build Alternative.

Important Visual Resources

There are no important visual resources in the project area, and the project is not on a designated scenic highway or a highway that is eligible for designation. The San Gabriel Mountains are occasionally visible in the distance from the project site, which is located in a valley, and Key Views 1, 2, and 3. The Build Alternative would not change these views. In addition, the project site is not located near a designated scenic highway. The nearest designated scenic highway is a stretch of SR-91 in Orange County, approximately 11 miles southwest of the project site.

Light and Glare

The project site and surrounding area are semi-urban to urban in nature, with abundant existing ambient light coming from several sources. Ambient light originates from SR-60/SR-57 and local roads, streetlights, and commercial uses in the project vicinity. The Build Alternative would add three new light poles along the gore point of the westbound on-ramp. New lighting would be shielded and focused within the project right-of-way. All light fixtures would be directed away from the commercial areas adjacent to the project site. There are no residential land uses in the vicinity of the project site. Therefore, implementation of the Build Alternative would not result in adverse impacts related to light, and mitigation would not be required.

Shade and Shadow

The Build Alternative would not add tall structures or buildings that could create adverse shade or shadow effects on sensitive land uses or existing buildings. Furthermore, there are no shade-/shadow-sensitive users in the vicinity of the project site. Therefore, implementation of the Build Alternative would not result in adverse impacts related to shade or shadow, and mitigation would not be required.

Compatibility with Visual Resource Policies

The proposed Build Alternative is consistent with the planning policy documents for the Cities of Industry and Diamond Bar. The City of Industry General Plan (May 1971) does not contain specific scenic resource policies. According to the Resource Management Element of the City of Diamond Bar General Plan (July 25, 1995), the city does not have designated scenic resources in the project study area, and the project site does not have hillsides or open space areas that are slated for recreational purposes. Therefore, the proposed Build Alternative would not result in adverse visual impacts related to planning policies, and mitigation would not be required.

2.1.6.4 Avoidance, Minimization, and/or Mitigation Measures

No operational adverse effects under NEPA or significant impacts under CEQA are anticipated; therefore, no avoidance, minimization, or mitigation measures are required.

2.1.7 Cultural Resources

2.1.7.1 Regulatory Setting

The term “cultural resources,” as used in this document, refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include the National Historic Preservation Act of 1966 (NHPA), as amended, which sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and allow the Advisory Council on Historic Preservation an opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council on Historic Preservation, FHWA, State Historic Preservation Officer (SHPO), and the Department went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 773) (July 1, 2007).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties. See Appendix B for specific information regarding Section 4(f).

Historical resources are considered under CEQA as well as California PRC Section 5024.1, which established the California Register of Historical Resources (CRHR). PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet NRHP listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

2.1.7.2 Affected Environment

A historic property survey report (HPSR) and an archaeological survey report were completed in September 2009 for the proposed project (ICF Jones & Stokes 2009b; 2009c). These reports were based in part on a records search conducted at the South Central Coastal Information Center at California State University, Fullerton. One prehistoric archaeological site was identified during the record search as being directly adjacent to the project area of potential effect (APE), in the vicinity of Diamond Bar Creek.

The APE was established as the Caltrans right-of-way for SR-60, all TCEs, and all staging areas. Construction activities would include widening the existing westbound lanes, resurfacing the roadway within the entire widened area, and restriping Grand Avenue at both the westbound and eastbound SR-60 intersections. The APE would extend 250 feet beyond the north side of the SR-60 right-of-way to capture any potential indirect visual effects. A pedestrian field survey of the APE was conducted by professionally qualified staff (PQS) members in May 2009. No cultural resources were observed within the APE at the time of the field survey.

2.1.7.3 Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no modifications to existing structures or the land would occur, therefore, no impacts on historical or archaeological cultural resources would result.

Build Alternative

During operation of the proposed project, no modifications to existing structures or the land would occur; however, Native American correspondence revealed that archaeological remains may exist within the APE, and a monitor is requested to be on site during any construction activities.

After considering the cultural resources evaluations conducted for the proposed project, the HPSR concluded that no properties are present within the project's APE that require evaluation. Cultural studies have determined that a Finding of No Adverse Effect with Standard Conditions is appropriate for the proposed project.

2.1.7.4 Avoidance, Minimization, and/or Mitigation Measures

No cultural resources were observed on the project site during the surveys. However, because of an ambiguous site boundary and local Native American concerns about excavation near the project area, archaeological monitoring shall occur during all initial grading activities. Should cultural resources be uncovered during construction, the measures below would ensure that any effects/impacts would be minimized.

- CUL-1** If buried cultural resources, such as flaked or ground stone, historic debris, building foundations, or non-human bone, are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. If required, recovery of significant archaeological deposits shall occur using standard archaeological techniques, including manual or mechanical excavations, monitoring, soils testing, photography, mapping, or drawing to adequately recover the scientifically consequential information from and about the archaeological resource. If, during cultural resources monitoring, the qualified archaeologist determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist shall specify that monitoring be reduced or eliminated.

CUL-2 Although no formal cemeteries or other places of human internment are known to exist within the project area, if human remains are exposed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Construction must halt in the area of the discovery of human remains, the area must be protected, and consultation and treatment must occur as prescribed by law. If the coroner determines the remains to be Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours. If Native American human remains are discovered during project construction, it will be necessary to comply with state laws relating to the disposition of Native American burials, which are under the jurisdiction of the NAHC (PRC Section 5097.98). For remains of Native American origin, no further excavation or disturbance shall take place until the most likely descendant of the deceased Native American(s) has made a recommendation to the landowner or the person responsible for the excavation work regarding means of treating or disposing of the human remains and any associated grave goods, with appropriate dignity, as provided in the PRC Section 5097.98, or the NAHC is unable to identify a most likely descendant or the descendant fails to make a recommendation within 48 hours after being notified by the commission. In consultation with the most likely descendant, the project archaeologist and the project proponent will determine a course of action regarding preservation or excavation of Native American human remains, and this recommendation will be implemented expeditiously. If a most likely descendant cannot be located or does not make a recommendation, the project archaeologist and the project proponent will determine a course of action regarding preservation or excavation of Native American human remains, which will be submitted to the NAHC for review prior to implementation.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

2.2.1.1 Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless there are no other practicable alternatives. FHWA requirements for compliance are outlined in 23 CFR 650, Subpart A.

In order to comply with the executive order, 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, and
- measures to minimize floodplain impacts and 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 1 percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

A Stormwater Pollution Prevention Plan (SWPPP) will be required for the construction phase of the project. The general permit requires all stormwater discharges associated with construction activities that result in soil disturbance of at least 1 acre of total land area to comply with the provisions specified in Caltrans’ permit, including development and implementation of an effective SWPPP. A notice of intent (NOI) will be submitted to the RWQCB for the project.

Location Hydraulic Study

The location hydraulic study, as required by Caltrans, has been completed and approved by Caltrans. The results of the location hydraulic study demonstrate that the project site is not located in a flood zone. Nonetheless, best management practices (BMPs), as required, shall be incorporated to ensure that the project does not result in adverse impacts from flooding.

2.2.1.2 Affected Environment

According to the Flood Insurance Rate Map (FIRM) for the area (see Figure 2-8), the project site is located in Zone X, or outside the 100-year floodplain, which is defined as an area with a 1 percent annual chance of flooding in 100 years (Federal Emergency Management Agency 2009). There are areas downstream of the project near the Brea Canyon crossing of Diamond Bar Creek that are designated as Zone AO and Zone A. Zone AO refers to river or stream flood hazard areas and areas with a 1 percent or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26 percent chance of flooding over a 30-year period. Average flood depth

derived from detailed analyses is identified as 1 foot. Zone A represents areas with a 1 percent annual chance of flooding and a 26 percent chance of flooding over a 30-year period. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown.

Topography in the area consists of slight to rolling hills and grasslands, including gentle to moderately steep sloped terrain with relatively steep undeveloped hills northwest of the freeway.

Soil information from the preliminary soils report indicates that the site is located in the northern part of the Puente Hills, a northwesterly trending range of low-elevation rounded hills between the Los Angeles Basin to the west and the Upper Santa Ana River Valley to the east. These hills are underlain primarily by Miocene-age (+/- 10–15 million years old) marine sedimentary rocks that have been uplifted within approximately the last million years by geologic forces. They are primarily light-colored, well-bedded, mudstone, shales, and sandstones.

Grand Avenue extends northerly across a narrow valley at the north end of the Puente Hills. The hills on the north side of the valley are Miocene-age marine sedimentary rocks of the Yorba Member of the Puente Formation, composed primarily of thin-bedded siltstone (shale) and sandstone. The hills of the south side of the valley are underlain by the Soquel and La Vida members of the Puente Formation. The valley is filled with loose, unconsolidated, young sands and gravels. These are underlain by medium-dense silts and sands. Bedrock of the Puente Formation occurs at a depth of 45 to 50 feet. Groundwater is relatively shallow in the alluvium of the valley.

The project is located in the San Gabriel River Watershed Groundwater Basin (Department of Water Resources [DWR] Basin Number 4-13). The groundwater basin has a surface area of 154,000 acres, or 225 square miles. Recharge of the basin is mainly from direct percolation of precipitation or percolation of streamflow. Streamflow is a combination of runoff from the surrounding mountains, imported water conveyed in the San Gabriel River channel to spreading grounds in the Central subbasin of the Coastal Plain of the Los Angeles Groundwater Basin, and treated sewage effluent (DWR 1966). Subsurface flow enters from the Raymond Basin, from the Chino subbasin, and from fracture systems along the San Gabriel Mountains (DWR 1966; DWR 1971; DWR 2004).

2.2.1.3 Environmental Consequences

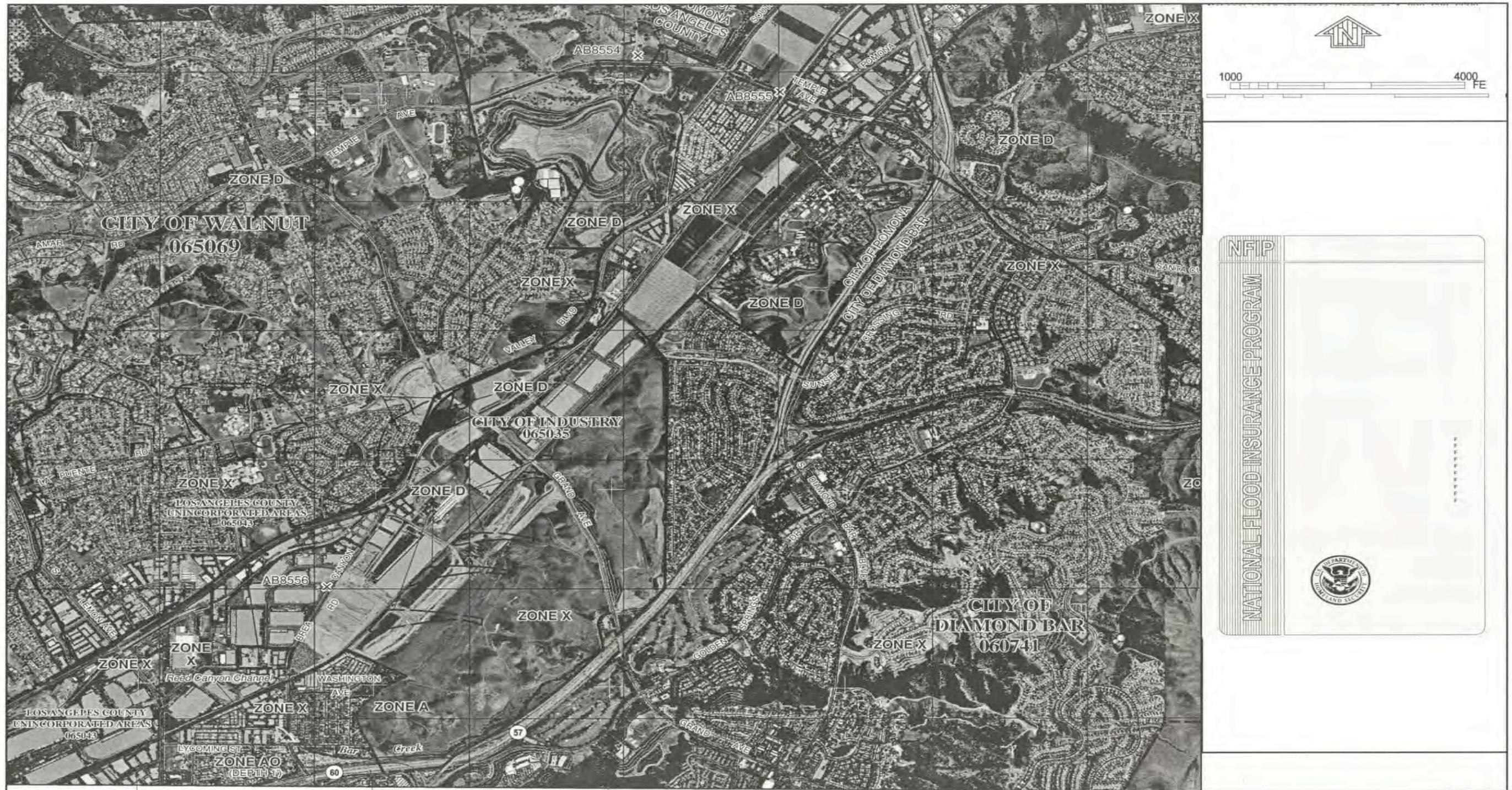
Groundwater

Construction Impacts

No-Build Alternative

The No-Build Alternative would not result in construction, and thus would not result in construction impacts to groundwater resources.

Figure 2-8. Base 100-year Floodplain in the Vicinity of the Project Site



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Build Alternative

Contact with groundwater during construction is expected to be minimal; therefore, impacts on groundwater hydrology would be less than significant and not substantially adverse.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not change existing groundwater conditions and therefore would have no operational impacts.

Build Alternative

The Build Alternative would increase impervious surfaces by 1.38 acres. In those areas, surface water would not be able to infiltrate the ground. However, the project includes BMPs, including biofiltration swales, which would allow for groundwater infiltration. Therefore, the project would not have a significant impact on groundwater hydrology.

2.2.1.4 Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures would be implemented to ensure that the aforementioned effects/impacts would be less than significant and not substantially adverse. The measures listed below are from Caltrans' Stormwater Data Report (SWDR). Additional BMPs to protect hydrology may be required when the location hydraulic study is complete.

Maintenance BMPs (Drain Inlet Stenciling¹³)

- HYD-1** Stenciling shall be used for proposed inlets in both the City of Industry and the City of Diamond Bar, as recommended by city standards. Specific locations and stencil details shall be provided at the plans, specifications, and estimates phase.

Proposed Permanent Treatment BMPs to Be Used on the Project

- HYD-2** A biofiltration swale is proposed along the new on-ramp. The approximate total area, total water quality flow to be treated, the tributary areas, and the design storm flows and water quality flows shall be finalized at the plans, specifications, and estimates phase.

¹³ Drain inlet stenciling involves labeling storm drain inlets with plaques, tiles, or painted or pre-cast messages warning citizens not to dump pollutants into the drain. The messages are generally a simple phrase or graphic to remind those passing by that the storm drains connect to local water bodies and that dumping will pollute those waters.

2.2.2 Water Quality and Stormwater Runoff

2.2.2.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, the Federal Water Pollution Control Act was amended, making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Federal Water Pollution Control Act was subsequently amended in 1977 and renamed the Clean Water Act (CWA). The CWA, as amended in 1987, directed that stormwater discharges are point source discharges. The 1987 CWA amendment established a framework for regulating municipal and industrial stormwater discharges under the NPDES program. Important CWA sections are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines;
- Section 401 requires an applicant for any federal project that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act;
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) into waters of the United States. RWQCBs administer this permitting program in California. Section 402(p) addresses stormwater and non-stormwater discharges; and
- Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is administered by USACE.

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters.”

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

California’s Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives) required by the CWA, and regulating discharges to ensure that the objectives are met. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are state listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and

the standards cannot be met through point source controls, the CWA requires establishing total maximum daily loads (TMDLs). TMDLs establish allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

NPDES Program

The SWRCB adopted Caltrans' Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the State. NPDES permits establish a 5-year permitting time frame. NPDES permit requirements remain active until a new permit has been adopted.

In compliance with the permit, Caltrans developed the Statewide Stormwater Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed Project will be programmed to follow the guidelines and procedures outlined in the 2003 SWMP to address stormwater runoff or any subsequent SWMP version draft and approved.

Municipal Separate Storm Sewer System Program

EPA defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over stormwater, that are designed or used for collecting or conveying stormwater. As part of the NPDES program, EPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for stormwater discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or more. Phase II expanded the program to municipalities with populations less than 100,000.

Construction Activity Permitting

Section H.2, Construction Program Management, of Caltrans' NPDES permit states that the "Construction Management Program shall be in compliance with requirement of the NPDES General Permit for Construction Activities (Construction General Permit)." Construction General Permit Order No. 2009-009-DWQ, adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates stormwater discharges from construction sites that result in a disturbed surface area of 1 acre or greater, and/or are part of a common plan of development.

By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit.

The newly adopted permit separates projects into Risk Levels 1 through 3. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring. Risk levels are determined during the design phase and are based on potential erosion and transport to receiving waters. Applicants are required to develop and implement an effective SWPPP.

Caltrans' Statewide NPDES Permit requires Caltrans to submit a notice of construction (NOC) to the RWCB to obtain coverage under the Construction General Permit. Upon project completion, a notice of completion of construction (NOCC) is required to suspend coverage. This process will continue to apply to Caltrans projects until a new Caltrans Statewide NPDES Permit is adopted by the SWRCB. An NOC or equivalent form will be submitted to the RWQCB at least 30 days prior to construction if the associated disturbed surface area is 1 acre or more. In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is used for projects with disturbed surface area less than 1 acre.

During the construction phase, compliance with the permit and Caltrans' Standard Special Conditions requires appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve the performance standards of the best available technology economically achievable/best conventional pollutant control technology to reduce or eliminate stormwater pollution.

Treatment Best Management Practices

Treatment BMPs are permanent measures to improve stormwater quality after construction is completed. The treatment BMPs listed below have been approved for statewide use and are to be considered for all projects per guidance in Caltrans' *Stormwater Quality Handbook – Project Planning and Design Guide*, July 2010 edition.

- Biofiltration systems
- Infiltration devices
- Detention devices
- Traction sand traps
- Dry-weather flow diversion
- Gross solids removal devices
- Media filters
- Multi-chamber treatment train
- Wet basins

2.2.2.2 Affected Environment

This section is based on information from the following reports, respectively:

- State Route 60 Westbound On-ramp at Grand Avenue Interchange Project Water Quality Assessment. Completed August 2009; and
- Caltrans' Stormwater Data Report, 07-LA-60 Ramp Improvement. Completed July 2009.

The proposed project is located 25 miles inland. The project site lies within the San Gabriel River Watershed and drains to Diamond Bar Creek, which flows into San Jose Creek approximately 2.7 miles downstream. The creek flows into the San Gabriel River approximately 10.2 miles from Diamond Bar Creek. The San Gabriel River flows through engineered channel and natural channel, the San Gabriel Estuary, San Pedro Bay, and the Los Angeles/Long Beach Harbor, finally emptying into the Pacific Ocean and draining approximately 682 square miles of eastern Los Angeles County. The headwaters of the San Gabriel River are in the San Gabriel Mountains where it travels through a series of reservoirs including the Cogswell, San Gabriel, and Morris Reservoirs. Once released from the Morris Reservoir, the water flows approximately 37 miles through a highly urbanized watershed and two additional reservoirs (Santa Fe and Whittier Narrows) prior to reaching the Pacific Ocean. Figure 2-9 shows the project location within the watershed. The project site has an estimated tributary drainage area (increase in impervious surfaces) of 1.38 acres, which is less than 0.1 percent of the San Gabriel River Watershed (409,600 acres).

Portions of the San Gabriel River Watershed are on the 2006 Clean Water Act Section 303(d) list of impaired water bodies being addressed by a TMDL. Table 2-19 lists the water bodies to which the project drains, the 303(d) list constituents, and the TMDL constituents. Note that the project drains directly to Diamond Bar Creek, which is not 303(d) listed, nor have any TMDLs been developed. The downstream water bodies from Diamond Bar Creek to the Pacific Ocean are 303(d) listed, and the San Gabriel River has a TMDL for metals.

The San Gabriel River and impaired tributaries metals and selenium TMDL is expected to become effective in the near future. Caltrans will be working with groups of responsible agencies to comply with the TMDL. The targeted pollutants are copper, lead, zinc, and selenium. The project engineer shall consider treatment controls for the project and consult with the district NPDES stormwater coordinator (California Department of Transportation 2007a). In April 2009, the RWQCB released its revised 2008 draft 303(d) list in which several of the water bodies and constituents listed in Table 2-19 were removed because data indicate that water quality standards are being met or new constituents were added.

A site investigation was conducted on November 19, 2009, to determine the limits and severity of potential aerially deposited lead contamination. Soil tested outside the Caltrans right-of-way was determined to be non-hazardous. Only soil within the Caltrans right-of-way, as tested by the HOV project, showed high levels of lead. The contaminated soil would be excavated and reused following the Lead Contaminated Soil Variance from the California Department of Toxic Substance Control.

Figure 2-9. San Gabriel River Watershed Map

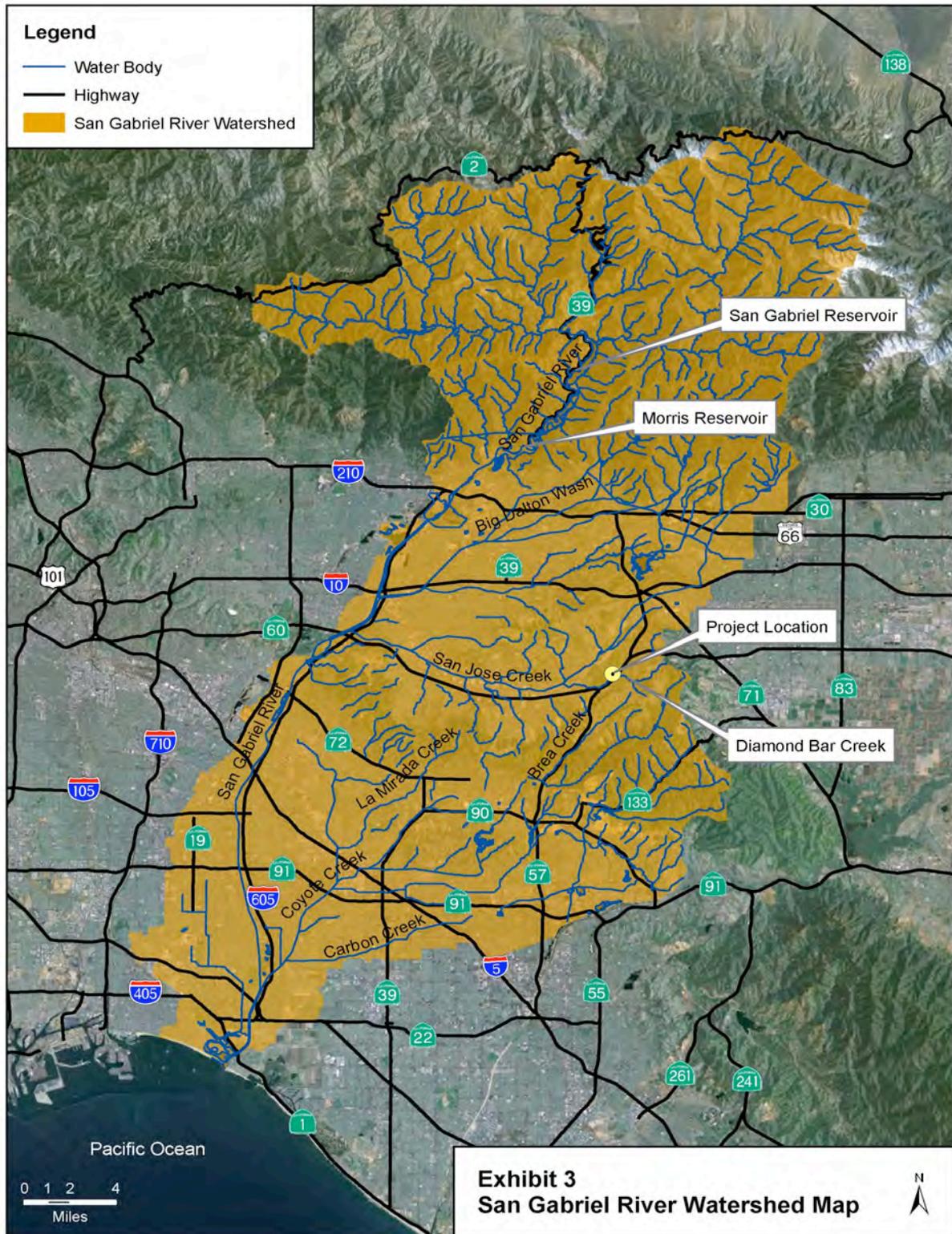


Table 2-19. Summary of Impaired Water Bodies

Water Body Name	303(d) List Constituents	TMDL Constituents
San Jose Creek Reach 1	Coliform bacteria Selenium Toxicity	None
San Gabriel River Reach 2	Coliform bacteria Lead	Metals
San Gabriel River Reach 1	Coliform bacteria pH	Metals
San Gabriel Estuary	Copper	Metals
San Pedro Near-/Offshore Zones	Chlordane Chromium (sediment) Copper (sediment) DDT(Dichlorodiphenyltrichloroethane) PAHs (polycyclic aromatic hydrocarbons) PCBs (polychlorinated biphenyls) Sediment toxicity Zinc (sediment)	None
Los Angeles/Long Beach Outer Harbor	DDT(Dichlorodiphenyltrichloroethane) PCBs (polychlorinated biphenyls) Sediment toxicity	None

Source: Los Angeles RWQCB 2007.

The climate in the project area is typical of Southern California, with hot dry summers and cool wet winters. Winter rainstorms typically begin light, then become persistent , with moderate intensity. Annual rainfall is approximately 19.6 inches. The rainy season is defined by the RWQCB and Caltrans' *Construction Site BMP Manual* (California Department of Transportation 2007b) as October 1 through May 1.

The majority of the area north of the freeway is currently open space, but the area is being developed for industrial and/or commercial uses. The area adjacent to the interchange includes a golf course, commercial uses, and open space. Diamond Bar Creek flows through the golf course south of the freeway, then crosses the freeway, flowing westerly. Dry-weather flows are present in the creek; however, because this water course drains a large area upstream of the project, it is believed that the flows are not generated from within the Caltrans right-of-way.

Groundwater Quality

Water within the basin is primarily calcium bicarbonate in character. In the north, west, and central regions of the basin, total dissolved solids (TDS) range from 90 to 4,288 milligrams per liter (mg/l) and average around 367 mg/l (DWR unpublished data). In the southern portion of the basin, TDS average around 1,222 mg/l (Puente Basin Watermaster [PBWM] 1999).

TDS content ranges from 500 to 1,500 mg/l in the eastern part of the basin (Smith 2000) and from 200 to 500 mg/l in the northeast part (James M. Montgomery Consulting Engineers Inc. 1985). Data from 259 public supply wells show an average TDS content of 318 mg/l and a range of 172 to 914 mg/l (DWR 2004).

Four areas of the San Gabriel Valley Groundwater Basin are Superfund sites. Trichloroethylene, perchloroethylene, and carbon tetrachloride contaminate the Whittier Narrows, Puente Basin, Baldwin Park, and El Monte areas (DWR 1998). The Puente Basin has numerous sites where clean-up operations are in effect. Within the "Six Basins" area, there exists high levels of nitrates in the northeastern part of the Pomona Basin, and a plume of volatile organic compounds occupies the southern portion of the Pomona Basin (Six Basins Watermaster, 2000). An EPA-assigned Superfund site, the Puente Valley Operable Unit, is cleaning up plumes of trichloroethylene and perchloroethylene (EPA 1998).

2.2.2.3 Environmental Consequences

Coordination with the respective agencies is ongoing to obtain the necessary permits for the project. The project will be required to obtain Section 401 and 404 permits and will also be required to comply with permit conditions during all phases of the project.

Surface Water

The potential and anticipated pollutants from a roadway project such as the proposed project may include the following:

- particulate and dissolved metals,
- total suspended solids,
- litter, and
- biochemical oxygen demand.

Construction Impacts

No-Build Alternative

The No-Build Alternative would not include construction and thus, would not have any construction impacts on surface water resources.

Build Alternative

During construction, sediment and construction pollutants can be transported into the stormwater system and waterways. The Build Alternative includes 4.9 acres of disturbed soil area and the following elements:

- roadway configuration,
- retaining walls,
- drainage structures, and
- permanent water quality treatment control BMPs.

Because of the amount of soil to be disturbed, a SWPPP would be required under the NPDES general construction permit. The SWPPP, which would be developed and implemented prior to construction, would include erosion and sediment control BMPs, and designed and developed to meet the requirements of Caltrans' SWMP. The pollutants of concern during construction typically include the following:

- sediment,
- litter,
- 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. Given the amount of disturbed soil, erosion and sediment could result from the proposed construction, and sediment could travel into the stormwater system or into the waterways, thereby affecting water quality. Therefore, the Build Alternative could result in significant impacts under CEQA and substantial adverse effects under NEPA.

Diamond Bar Creek

Diamond Bar Creek is adjacent the project site. Short-term indirect impacts associated with construction of the proposed project may result from fuel or lubricant spills from equipment or vehicles; activities occurring outside of designated construction areas involving equipment, vehicles, or personnel; increased erosion, siltation, or runoff; increased localized noise and vibration; and increased dust accumulation on plant leaves. Temporary impacts would include those associated with installation of a non-grouted energy dissipater at the terminus of the culvert as well as maneuvering equipment during construction. Construction equipment would access the site from the east end of the creek, at the existing structure, to limit impacts on the preserved downstream area. These potential construction impacts would be substantially adverse effects under NEPA and significant under CEQA. Mitigation measures BIO-4 through

BIO-9, described in detail in Section 2.3.2.4, would be implemented to help minimize potential construction-period impacts on Diamond Bar Creek.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not change existing surface water conditions and thus no new operational impacts would result from the No-Build Alternative.

Build Alternative

Because the proposed project would consist of new roadway and on-ramp areas, it would result in a permanent increase in the amount of impervious surfaces (1.38 acres); therefore, a permanent increase in runoff and pollutant loading would result. This increase could result in a significant impact under CEQA and a substantial adverse effect under NEPA with regards to surface water. Operation of the project is subject to the requirements of Caltrans' permit. As part of these requirements, the design of the project must:

- consider approved structural treatment-control and non-structural source-control BMPs for the project site, and
- construct structural treatment-control BMPs where feasible.

Diamond Bar Creek

Current engineering design plans indicate an extension of approximately 300 linear feet to the existing Old Brea Canyon Road box culvert over Diamond Bar Creek west of Grand Avenue. Construction of the Build Alternative would result in 0.15 acre of permanent impacts on USACE waters of the United States (Diamond Bar Creek), including 0.0006 acre of wetlands. The Build Alternative would also permanently affect 0.15 acre of CDFG jurisdictional streambeds, including 0.0006 acre of wetlands, and 0.16 acre of CDFG jurisdictional riparian habitat. Therefore, the Build Alternative would result in substantially adverse effects under NEPA and significant impacts under CEQA. Mitigation measures BIO-4 through BIO-9, described in detail in Section 2.3.2.4, would be implemented to help minimize these potential impacts on Diamond Bar Creek.

Groundwater

Construction Impacts

No-Build Alternative

The No-Build Alternative would not result in construction activities and thus, would have no construction impacts on groundwater.

Build Alternative

Groundwater may be encountered during excavation associated with construction projects. Non-stormwater dewatering activities are subject to the requirements of the Dewatering Permit (Order Number R4-2008-0032). It is expected that the Build Alternative would require little dewatering; and any that does occur will be covered under the Statewide General Construction Permit. Compliance with this permit would avoid substantial adverse effects under NEPA and significant impacts under CEQA on water quality from dewatering.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not change existing groundwater conditions in the vicinity of the project site and thus, no operational impacts would result from the No-Build Alternative.

Build Alternative

The Build Alternative would not be in contact with groundwater during its operational phase. Furthermore, the incorporation of design and treatment BMPs, including biofiltration swales, to protect surface water quality would lessen any potential impacts by removing pollutants before they reach groundwater.

2.2.2.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA with regards to groundwater, but it could result in substantial adverse effects under NEPA and significant impacts under CEQA with regards to surface water. However, the following measures would be implemented to ensure that the aforementioned effects/impacts would be less than significant. In addition, potential impacts on Diamond Bar Creek would be minimized with implementation of mitigation measures BIO-4 through BIO-9, as described in detail in Section 2.3.2.4.

- WAT-1** To ensure that pollutants do not affect water quality, the proposed project shall include the appropriate design, implementation, and maintenance BMPs, as defined in the *Stormwater Quality Handbook – Project Planning and Design Guide*. Incorporation of these BMPs would ensure that the project would avoid adverse impacts on surface water quality, especially Diamond Bar Creek.
- WAT-2** Currently, stormwater runoff from within the project limits is untreated. As part of the proposed project, structural treatment-control BMPs shall be implemented to target the anticipated constituents (particulate and dissolved metals, total suspended solids, litter, and biochemical oxygen-demanding substances) of stormwater. Non-stormwater source-control BMPs shall also be incorporated into the project. The structural treatment-control and non-structural source-control BMPs shall be implemented to maximize pollutant treatment where feasible, especially at Diamond Bar Creek.

With implementation of these BMPs, operation of the Build Alternative would result in a beneficial impact on water quality and stormwater runoff.

2.2.3 Geology/Soils/Seismicity/Topography

2.2.3.1 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 CEQA.

This section 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.

Additional Regulatory Information

National Natural Landmarks Program

The National Natural Landmarks Program was established in 1962 under authority of the Historic Sites Act of 1935. Administered by the National Park Service, the National Natural Landmarks Program lists sites that represent the nation’s “best” examples of various types of biological communities or geologic features (meaning that they are in good condition and effectively illustrate the specific character of a certain type of resource) in the National Registry of Natural Landmarks. At present, the registry includes 587 sites.

The goals of the National Natural Landmarks Program are

- to encourage the preservation of sites that illustrate the nation’s geological and ecological character,
- to enhance the scientific and educational value of the sites preserved, and
- to strengthen public appreciation of natural history and foster increased concern for the conservation of the nation’s natural heritage.

Alquist-Priolo Earthquake Fault Zoning Act

California’s Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (referred to as earthquake fault zones). It defines criteria for identifying active faults, giving legal weight to terms such as active, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. It also encourages and regulates seismic retrofits of some types of structures.

Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) is intended to avoid or reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction,¹⁴ and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Earthquake Fault Zoning Act (i.e., the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones).

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

Surface Mining and Reclamation Act of 1975

The principal piece of legislation addressing mineral resources in California is the Surface Mining and Reclamation Act of 1975 (Public Resources Code Sections 2710–2719), which was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of this act is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that adverse environmental effects of mining are prevented or minimized, that mined lands are reclaimed and residual hazards to public health and safety are eliminated, and that consideration is given to recreation, watershed, wildlife, aesthetics, and other related values. The Surface Mining and Reclamation Act of 1975 provides for the evaluation of an area's mineral resources using a system of mineral resource zone classifications that reflect the known or inferred presence and significance of a given mineral resource.

2.2.3.2 Affected Environment

A geotechnical assessment was prepared for the IBC environmental impact report (EIR) in May 2003 (Leighton Consulting, 2003). The geotechnical assessment and the EIR (The Planning Center 2004) analyzed the proposed site for the IBC as well as the surrounding area. A Structure Preliminary Geotechnical Report for the Proposed Mechanically Stabilized Earth Retaining Wall for the proposed Interchange Improvements project (Earth Mechanics 2010) was recently completed for the project site. These reports are incorporated by reference into this section.

¹⁴ *Liquefaction* is a phenomenon in which the strength and stiffness of the soil are reduced by earthquake shaking or other rapidly applied loading. Liquefaction and related types of ground failure are of greatest concern in areas where well-sorted, sandy unconsolidated sediments are present in the subsurface and the water table is comparatively shallow.

The project site is situated near the boundary of the Peninsular Ranges and Transverse Ranges geomorphic provinces of Southern California. It is located within the Puente Hills and possesses structural characteristics of both provinces. The area has northwest-trending structures, such as the Whittier-Elsinore fault, and an east/west striking fold and thrust belt related to the uplift of the Transverse Ranges. The bedrock unit underlying the area is characteristic of sediments that were deposited at the margin of the Los Angeles structural basin when this depositional basin was under the sea. Marine deposition of the basin began about 15 million years ago and continued until about four million years ago. The older marine sediments generally overlie, and in places are interbedded with, volcanic deposits that date back to about 15 million years ago. The basin has also undergone a complex process of folding and faulting associated with the collision between the Pacific and North American tectonic plates.

The project site is located along the eastern margin of the San Gabriel River Valley in the Puente Hills, adjacent to the San Jose Creek alluvial valley. San Jose Creek emanates from the upper Santa Ana Valley and flows southwest and west before draining into the San Gabriel River. The alluvial valley of San Jose Creek separates the San Jose Hills from the Puente Hills to the south. The drainage course of the creek has been improved and straightened; it flows through the project site as Diamond Bar Creek. The hills that make up the project site are underlain by a succession of Miocene¹⁵-age sedimentary rocks that are assigned to the Puente formation (English, 1926; Woodford, et al., 1944; Durham and Yerkes, 1964). Large debris aprons or alluvial fans have developed at the base of these hills, and thick deposits of colluvium have accumulated in drainage swales and at the toes of natural slopes. Shallow landslides are abundant on the low hills northwest of the IBC site, along the floodplain of San Jose Creek. The adjacent valley is underlain by alluvial and flood plain sediments that have eroded from the nearby hills and been deposited by San Jose Creek. Artificial fill is also present, primarily as fill embankments along Grand Avenue.

Regional tectonic activity has uplifted the San Jose and Puente Hills area, resulting in tilting, faulting, and folding of the sedimentary layers in the underlying bedrock. The uplift and folding of the Puente Hills is related to the folding and thrusting of southwest-verging thrust faults along the Elysian Park trend, a system of northwest-trending hills, including the Puente Hills, Montebello Hills, and Elysian Park Hills (Shaw and Suppe, 1996). This episode of faulting has been followed by a late Quaternary¹⁶ to recent stage of faulting on east-west trending, north-dipping thrust faults, which are currently shortening the Los Angeles and San Gabriel Valleys (Shaw and Suppe 1996; Shaw et al. 2002; Fuis et al. 2001). Strike-slip faults also contribute to the overall deformation in the region, accommodating right-lateral strike-slip motion along the San Andreas fault. The Whittier-Elsinore fault is a northwest-striking right-lateral strike-slip fault in the vicinity of the project site. The Chino fault is considered to be a strike reverse fault. The Chino reverse-separation fault separates from the Elsinore fault south of Corona, then extends northward through the Chino Hills, terminating in the Los Serranos suburb of the City of Chino Hills.¹⁷ The absence of thickness

¹⁵ *Miocene* is the fourth epoch of the Cenozoic. It started approximately 23 million years before the present and lasted eighteen million years.

¹⁶ *Quaternary* is the second period of the Cenozoic era. It spans from approximately 1.8 million years ago to the present. It contains two epochs, the Pleistocene and the Holocene.

¹⁷ U.S. Geological Survey. n.d. *The Chino Fault and Its Relation to Slip on the Elsinore and Whittier Faults and Blind Thrusts in the Puente Hills*. Final Technical Report. Grant 02HQGR0046. Principal Investigator, Robert S. Yeats, Oregon State University. Available: <<http://earthquake.usgs.gov/research/external/reports/02HQGR0046.pdf>>. Accessed: April 7, 2010.

variations within the Miocene Puente Formation indicates that the Chino fault is post-Miocene.¹⁸ The San Jose and Walnut Creek faults are northeast-striking left-lateral faults that are considerably shorter than the Chino and Whittier-Elsinore faults and probably contributing to the shortening of the San Gabriel Valley. The San Jose and Puente Hills consist of a suite of folded Tertiary sandstone and siltstone layers along northeast-trending fold axes. The Amar syncline¹⁹ underlies the alluvium of San Jose Creek and is separated from the San Jose and Buzzard Peak anticlines²⁰ of the San Jose Hills by the San Jose fault. The folding continues through the project site within the Puente Hills.

Regional Faulting and Seismicity

Southern California is a geographically complex area that includes several types of faults, including strike-slip,²¹ oblique thrust,²² and blind thrust²³ faults. Any specific area is subject to seismic hazards of varying degree, depending on the proximity and earthquake potential of nearby active faults, and to the local geologic and topographic conditions, which can either amplify or attenuate the seismic waves. Seismic hazards include primary hazards from surface rupturing of rock and soil materials along active fault traces and secondary hazards resulting from strong ground shaking.

Surface Rupture

To protect structures from the hazard of surface ground rupture along a fault line, the California Geological Survey (CGS), under the state-mandated Alquist-Priolo Act of 1972, has delineated "Earthquake Fault Zones" along active or potentially active faults (Hart and Bryant, 1997). A fault is considered active if there is evidence of movement along one or more of its segments in the last 11,000 years that is either directly observable or inferred. A well-defined fault is one in which "its trace can be clearly detected by a trained geologist as a physical feature at or just below the ground surface." A well-defined fault may be identified by either direct or indirect methods. If a site is located within an Earthquake Fault Zone, a detailed fault investigation is required prior to construction.

The project site is not located within an Earthquake Fault Zone. No faults are known to exist at the site, and no faults are mapped as crossing the site.

¹⁸ Ibid.

¹⁹ On a geologic map, synclines are recognized by a sequence of rock layers that grow progressively younger, followed by the youngest layer at the fold's center or *hinge*, and by a reverse sequence of the same rock layers on the opposite side of the hinge.

²⁰ On a geologic map, anticlines are usually recognized by a sequence of rock layers that are progressively older toward the center of the fold because the uplifted core of the fold is preferentially eroded to a deeper stratigraphic level relative to the topographically lower flanks. The strata dip away from the center, or *crest*, of the fold.

²¹ *Strike-slip fault* is a fault in which surfaces on opposite sides of the fault plane have moved horizontally and parallel to the strike of the fault.

²² *Oblique-thrust fault* is a fault which features movement in both directions as strike-slip and dip-slip faults.

²³ *Blind thrust fault* is a thrust fault that does not rupture all the way up to the surface so there is no evidence of it on the ground. It is "buried" under the uppermost layers of rock in the crust.

Seismic Shaking

The probability that the project site will be subject to strong seismic shaking from a moderate to large earthquake on a major active fault in the Los Angeles region is high. The intensity of ground shaking at a given location depends primarily upon the earthquake magnitude, faulting mechanism, distance from the source (epicenter), and the site response characteristics. The intensity of the shaking is generally amplified in areas underlain by deep deposits of loose, unconsolidated soils. Ground shaking is also known to be enhanced by topographic highs, but this phenomenon is poorly understood at this time. The most common effects of strong seismic shaking include liquefaction and its related ground deformations, dynamic settlement, and landslides.

Numerous faults have been mapped within the Southern California region, several of which are within 62 miles, or 100 kilometers, of the site (CGS requires those faults within 100 kilometers that could affect the site or the proposed project to be identified). The major active and potentially active fault systems that could produce significant ground shaking at the site include the San Andreas, San Jose, Whittier, Chino, Puente Hills blind-thrust, and Sierra Madre-Cucamonga faults. These faults and their distances to the site are shown in Table 2-20.

Table 2-20. Earthquake Faults

Fault Name	Distance from Project Site (miles)
San Jose	2.4
Chino	4.3
Whittier	4.5
Puente Hills Thrust	5.7
Sierra Madre	10.4
Cucamonga	10.9
Raymond	15.3
Elsinore – Glen Ivy	15.5
Upper Elysian Park	16.2
Clamshell – Sawpit	16.9
Verdugo	20.3
Newport-Inglewood	23.5
San Joaquin Hills	23.8
San Jacinto	24.5
San Andreas	24.5
Cleghorn	26.2
Palos Verdes	26.2
San Gabriel	26.7

Source: Leighton, 2003; Earth Mechanics 2010.

Further information on the potential effects of these faults on the project site is included in the impacts discussion below. No active faults are known to be present on the project site. Minor, localized faulting was mapped during previous grading work on Grand Avenue.

Subsidence

In California, subsidence related to man's activities has been attributed to the withdrawal of subsurface fluids such as oil and groundwater, oxidation of subsurface organic material such as peat and coal, and hydroconsolidation (from excessive irrigation) of loose, dry soils in a semi-arid climate. Withdrawal of groundwater has occurred in the project area for agricultural purposes; however, this practice has been greatly reduced in recent years because of the change in predominant land uses, which have transitioned from growing crops to raising cattle. As a result, groundwater elevations in the vicinity of the site have risen. With respect to oxidation of organic soils, the numerous borings drilled on site in the past (up to about 50 feet deep in the alluvial area) have not encountered highly organic soils such as peat. Furthermore, borings indicate that soils are moist almost up to the ground surface. Consequently, the future occurrence of subsidence resulting from man's activities is judged to be remote.

Slope Stability

Several landslides and suspected landslides have been mapped within the project site. One of these landslides was encountered during the previous grading of Grand Avenue. To stabilize the roadway, a gravity buttress was placed on the south side of the road. "Gravity buttress" means that fill was placed on top of the toe of the slide to hold it in place by the weight of the fill (the buttress construction did not remove the slide plane). The gravity buttress is located at the intersection of Grand Avenue and Ferrero Parkway. In addition, a landslide shear key was constructed on the north side of Grand Avenue. A shear key is a large trench-like excavation that cuts through the landslide, thereby removing a portion of the slide plane and replacing it with compacted fill. Aerial photographic analysis and initial site reconnaissance indicate that there are two landslides on the west-facing slopes and two on the east-facing slopes along Diamond Bar Creek, south of Grand Avenue.

Groundwater

Borings drilled by Leighton in 2002 for the IBC project site south of Grand Avenue indicate that perched groundwater is at an elevation of approximately 600 feet above mean sea level in bedrock layers. However, locally, the depth is variable because of perched water in landslide deposits. The water level in the alluvium along the western site boundary near Diamond Bar Creek ranges from 20 to 25 feet below the ground surface. According to the log of test borings for the existing Grand Avenue overcrossing, groundwater was encountered at approximately 5 to 20 feet below the existing grades; therefore relatively shallow groundwater is expected along the proposed retaining wall.

Soil Engineering Characteristics

Laboratory testing on samples from drilled borings within the IBC project site demonstrate that the expansion index within the alluvium is typically in the low to moderate range. Puente Formation bedrock, which consists predominantly of siltstone and clayey siltstone, is usually

within the medium expansion range but can extend into the high range. The sandstone layers of the Puente Formation should not be expansive. Colluvium, being partially a product of weathering, is typically clayey and in the moderate to high expansion range, but no structures would be built on highly expansive soils.

Moisture may need to be added to near-surface soils, the moisture content of which tends to be less than the optimum moisture content needed for compaction. Conversely, deeper alluvial soils (within 10 feet) are frequently wetter than optimum and, therefore, may need to be dried or mixed with drier materials to achieve compaction.

The erosion characteristics of the bedrock and surficial soils on site vary considerably. Erosion is most prevalent in unconsolidated deposits such as alluvium and colluviums, which are prone to rills, sheet wash, slumping, and bank failures during and after heavy rainstorms. Unweathered siltstone and cemented sandstone will have low susceptibility to erosion. Fill slopes constructed with on-site soils will most likely be moderately susceptible to erosion.

Mineral Resources

Oil exploration and production has occurred in the San Jose and Puente Hills. The Brea-Olinda and Puente oil fields are south and southeast of the project site, and the Walnut field is north and northwest of the project site (Woodford et al. 1944; Olmstead 1950; Durham and Yerkes 1964). However, oil production is not known to have occurred on the project site.

Sand and gravel are important mineral resources in Southern California. Most of the sand and gravel is mined from active river channels and alluvial fans emanating from the San Gabriel and San Bernardino Mountains. These deposits are the easiest to access, have the highest quality, and are periodically replenished by storms. The sandstone unit of the Tertiary Puente Formation is considered an acceptable crushed-rock alternative for aggregate. Although the project area is underlain by the Puente Formation, it has not been identified as a resource for sand and gravel (Miller 1987).

2.2.3.3 Environmental Consequences

Fault-Induced Ground Rupture

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

No Alquist-Priolo Earthquake Fault Zones have been designated in the site vicinity. The nearest active or potentially active fault is the San Jose fault, located approximately 2.8 miles to the north. Several faults have been mapped in the Puente Formation during

previous grading of the Grand Avenue extension through the Puente Hills, but none of these faults was designated as active. Therefore, the possibility of ground rupture along a fault line at the site is judged to be very low. Therefore, potential impacts would be considered less than significant and not substantially adverse.

Seismic Ground Shaking

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

The San Jose fault is capable of producing the most intense ground accelerations at the project site given that it is located approximately 3.5 miles from the project site. An estimated maximum moment magnitude for an earthquake on the San Jose fault is 6.5. An earthquake of this size could produce seismic shaking with peak horizontal ground accelerations estimated at about 0.58g (g is the acceleration of gravity, equal to 32 feet per second squared). Smaller events on the San Jose fault, as well as earthquakes on other faults farther away from the site, could be expected to produce peak horizontal ground accelerations at the site of up to 0.52g. The Puente Hills blind-thrust fault is an active fault that lies roughly 6 miles below and west of the project site and has the potential to rupture in earthquake event larger than moment magnitude 7 (Dolan et al. 2003; Christofferson et al. 2001). The level of hazard posed by seismic shaking in the area is considered high because of the proximity of known active faults; therefore, impacts related to seismic shaking would be considered to be potentially significant and an adverse effect.

Secondary Effects of Seismic Shaking

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

Liquefaction occurs when loose, cohesionless, water-saturated soils (generally fine-grained sand and silt) are subjected to strong seismic ground motion of significant duration. The behavior of these soils is similar to that of liquids. Because they lose bearing strength, structures built on these soils may tilt or sink when the soils liquefy. Liquefaction more often occurs in earthquake-prone areas underlain by young alluvium where the groundwater table is

within 50 feet of the ground surface. CGS has identified the Puente Valley as a potential liquefaction area (California Department of Conservation 1998). The area within the project site is underlain by alluvium and could have high groundwater levels because of the proximity of this area to the Diamond Bar Creek riverbed. These factors suggest that, within the project site, impacts due to liquefaction would be potentially significant and adverse.

Lateral spreading is a phenomenon where large blocks of intact, nonliquefied soil move downslope on a liquefied substrate of large areal extent (Yeats et al. 1997; Tinsley et al. 1985). The mass moves toward an unconfined area, such as a descending slope or stream-cut bluff, on slope gradients as gentle as 1 degree. In areas within the project site covered by soils that are underlain with liquefiable alluvium, along the Diamond Bar Creek, for example, hazards due to lateral spreading would be potentially significant and adverse.

Strong ground shaking can cause settlement by allowing sediment particles to become more tightly packed, thereby reducing pore space. Unconsolidated, loosely packed granular alluvial deposits are especially susceptible to this phenomenon. Poorly compacted artificial fills may also experience seismically induced settlement. Because unconsolidated soils and uncompacted fill are present in the area, impacts related to seismically induced settlement would be significant.

Marginally stable slopes (including existing landslides) may be subject to landslides caused by seismic shaking. The seismically induced landslide hazard depends on many factors, including existing slope stability, shaking potential, and presence of existing landslides. The project site is characterized by low hills and moderately steep slopes with previous landslides. Therefore, impacts related to landslides would be potentially significant and adverse.

Subsidence

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

As described above in the affected environment discussion, conditions conducive to future ground subsidence are not present at the project site; therefore, no significant impacts or adverse effects related to subsidence are expected.

Slope Stability

Construction Impacts

No-Build Alternative

The No-Build Alternative would not involve construction activities to affect existing slope stability on the project site. Therefore, no impact or adverse effect would occur.

Build Alternative

Slope or sidewall failure in temporary excavations for underground utilities could occur in unconsolidated surficial soils, particularly if the cut face exposes seepage from shallow or perched groundwater. Consequently, impacts related to temporary slope instability and landslides would be potentially significant and adverse.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not implement long-term operational changes to existing slope stability conditions on the project site. Therefore, no impact or adverse effect would occur.

Build Alternative

Marginally stable slopes (including those with existing landslides) may be subject to landslides during or shortly after prolonged, heavy rainfall or strong seismic shaking. In most cases, these are limited to relatively shallow soil failures on the steeper natural slopes. As discussed above in the affected environment discussion, several landslides and suspected landslides have been mapped within the project site. Therefore, impacts related to soil instability and landslides on slopes would be significant.

Groundwater

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

According to the log of test borings for the existing Grand Avenue overcrossing, groundwater was encountered at approximately 5 to 20 feet below the existing grades; therefore, relatively shallow groundwater is expected along the proposed retaining wall. Impacts related to groundwater at the site would be potentially significant and adverse.

Soil Engineering Characteristics

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

Most native soils on site, as well as fill slopes constructed with native soils, will have moderate susceptibility to erosion. These materials would be particularly prone to erosion during the grading phase, especially during heavy rains. Therefore, impacts related to erosion at the site would be potentially significant and adverse.

Mineral Resources

Construction and Operational Impacts

No-Build Alternative

The No-Build Alternative would not involve construction or implementation of long-term operational changes to existing conditions. Therefore, no impact or adverse effect would occur.

Build Alternative

Mineral resources in the region of the project include 1) petroleum, which is withdrawn from several oil fields on the south flank of the Puente Hills, and 2) sand and gravel, which are mined from larger river channels and along the base of the San Gabriel and San Bernardino Mountains. The Puente Valley has never been developed as a petroleum resource, and the sediments deposited by the San Jose and Diamond Bar Creeks contain concentrations of fine-grained soils (silts and clays) that are too high to make the alluvium a viable source of sand and gravel. Therefore, impacts related to the loss of mineral resources because of development of the site would be less than significant and not adverse.

The proposed project would not result in a noticeable change that would affect natural landmarks and landforms.

2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

Seismic Ground Shaking

There is no realistic way to avoid hazards related to seismic shaking totally; however, risks related to exposure to future ground shaking would be no greater than the risks at other sites in the vicinity. Furthermore, it should be recognized that it is not considered feasible to build structures that are completely resistant to seismic shaking (they are, however, required to be collapse-proof).

Any effects/impacts on structures would be reduced through conformance with the following minimization measure:

- GEO-1** The project shall comply with local and state building codes, such as Caltrans' Seismic Design Criteria, to ensure that damage in a large earthquake event is minimized.

Secondary Effects of Ground Shaking

Depending on the degree of risk associated with possible liquefaction, dynamic settlement, and seismically induced landslides, minimization measures during design and construction of the project may be needed.

The measures below would be implemented to ensure that the aforementioned effects/impacts would be less than significant.

- GEO-2** Ground improvement methods, such as soil densification and/or dewatering, shall be implemented as needed to reduce liquefaction and settlement impacts.
- GEO-3** Stabilizing measures, such as constructing sediment diversion or collection devices, shall be implemented as needed to reduce landslide impacts.

Slope Stability

The measures below would be implemented to ensure that the aforementioned effects/impacts would be less than significant.

- GEO-4** To reduce the potential for localized slope failures during construction, the locations of excavations in native soils shall be evaluated by the project geologist and geotechnical engineer prior to and during construction.
- GEO-5** Areas where excavation into the water-bearing zone is required shall be temporarily dewatered.
- GEO-6** Excavation walls shall be flattened to safe gradients.
- GEO-7** In areas where bedding is adversely oriented, the walls of the excavation shall be shored, with shoring that has been designed to withstand additional loads, or the walls of the excavation shall be flattened to a gradient that is slightly flatter than the dip of the bedding.
- GEO-8** Excavation spoils shall not be placed immediately adjacent to the excavation walls unless the excavation is shored to support the added load.
- GEO-9** Excavations shall be cut and backfilled in sections to reduce the potential for slope failure.
- GEO-10** Temporary excavations shall not be left open for long periods of time.

Groundwater

The potential for groundwater impacts can be reduced by the following minimization measure:

- GEO-11** The groundwater elevation shall be confirmed by the site-specific geotechnical field investigation, which would be conducted during the plans, specifications, and estimates stage of the project.

Soil Engineering Characteristics

The potential for erosion can be reduced by a variety of techniques, including those listed below.

- GEO-12** Slopes shall be landscaped or terraced to minimize the velocity attained by runoff.
- GEO-13** Berms or v-ditches shall be placed at the tops of slopes.
- GEO-14** Adequate storm drain systems shall be installed.
- GEO-15** Graded slopes shall be sprayed with polymers, or other temporary measures may be taken, to protect them until landscaping is established.
- GEO-16** Temporary erosion-control measures shall be provided during the grading phase as required by current grading codes, which typically include temporary catchment basins and/or sandbagging to control runoff and contain sediment transport within the project site.

Implementation of these erosion-control measures would reduce effects/impacts to less-than-significant levels and would render the impacts not adverse.

2.2.4 Paleontology

2.2.4.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plant and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects (e.g., Antiquities Act of 1906 [16 USC 431–433], Federal-Aid Highway Act of 1935 [20 USC 78]). Under California law, paleontological resources are protected by CEQA; the California Code of Regulations, Title 14, Division 3, Chapter 1, Sections 4307 and 4309; and Public Resources Code Section 5097.5.

2.2.4.2 Affected Environment

A paleontological records search was conducted at the Vertebrate Paleontology Section of the Los Angeles County Natural History Museum (LACM). Results of the record search indicate that the project area consists of younger soil deposits, which generally do not yield fossil remains. No fossil remains have been reported within the project area (McLeod 2009).

2.2.4.3 Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no modifications to the land would occur, therefore, no impacts on paleontological resources would result.

Build Alternative

Surface grading or shallow excavation is unlikely to encounter any significant vertebrate fossils. However, deeper excavations or excavations into bedrock may uncover significant fossil vertebrate remains. Disturbance of significant fossil remains would be a substantial adverse effect under NEPA and significant impact under CEQA.

2.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

If paleontological resources are uncovered during construction, the measure below would ensure that any effects/impacts would be avoided or minimized.

- PAL-1** If paleontological resources are discovered during ground-disturbing activities, work shall stop within 50 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures may include further monitoring by a qualified paleontologist during the remaining construction-related ground-disturbing activities. The qualified paleontological monitor shall retain the option of reducing monitoring if, in his or her professional opinion, the sediments being monitored were previously disturbed. Monitoring may also be reduced if the potentially fossiliferous units, previously described, are not present or, if present, are determined by qualified paleontological personnel to have a low potential to contain fossil resources. The monitor shall be equipped to salvage fossils and samples of sediments as they are unearthed to avoid construction delays and empowered to temporarily halt or divert equipment to allow removal of abundant

or large specimens. Recovered specimens shall be prepared to a point of identification and permanent preservation, including the washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, shall be prepared, which will signify completion of the program to mitigate impacts on paleontological resources.

2.2.5 Hazardous Waste/Materials

2.2.5.1 Regulatory Setting

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

The primary federal laws regulating hazardous waste and 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 the Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include the following:

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

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

Hazardous waste in California is regulated primarily under the authority of RCRA and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

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

2.2.5.2 Affected Environment

Between 1954 and 1968, the Valley Land Development Company operated a landfill within the currently vacant hillside just north of the existing westbound SR-60 on- and off-ramps, east of Grand Avenue. The landfill site is currently owned by the City of Industry and referenced as site No. 19-AA-5560 in the California Integrated Waste Management Board’s (CIWMB’s) Solid Waste Information System (SWIS) database. It is also designated as Site No. 42.160-622 on

the July, 1973 Major Waste Systems Map, which is part of the Los Angeles County General Plan. A recent site characterization of the landfill estimated that it contained approximately 565,000 cubic yards of solid waste (SCS Engineers 2006). However, the landfill is not listed in any hazardous materials database.

An initial site assessment (ISA) for the project was conducted; a report was issued on January 12, 2009.

Potential hazardous wastes in the project area that may affect the proposed project are as follows:

- aerially deposited lead (ADL),
- existing yellow traffic stripes and pavement markings,
- pole-mounted transformers and electrical boxes, and
- groundwater contamination.

These potential hazardous wastes are considered low to medium risk issues.

Prior to construction, a site investigation was prepared for the HOV Direct Connector Project on Routes 60 and 57. The area surveyed included unpaved soil within the Caltrans right-of-way adjacent to the freeway mainline. The report identified ADL exceeding allowable limits within the top 3 feet of soil. The report indicated the soil could be reused following the attainment of a Lead Contaminated Soil Variance from the California Department of Toxic Substance Control.

A site investigation was conducted on November 19, 2009, to determine the limits and severity of potential ADL contamination. The Site Investigation included the unpaved areas within both the private property and City of Industry property. Based on the soil sampling, the laboratory test results, and the analysis in the Aerially Deposited Lead Content Testing Report (Earth Mechanics 2010), the soils within the project area are classified as non-hazardous waste in terms of ADL content.

According to the ISA, on-site pole-mounted electrical transformers located over bare soil, are highly likely to have resulted in a past release of polychlorinated biphenyls (PCBs), therefore resulting in a recognized environmental condition with regards to the presence of PCBs.

The ISA also mentioned that the off-site regulatory properties 206 South Diamond Bar Boulevard, 301 South Diamond Bar Boulevard, 22628 East Golden Springs Drive, 23525 East Palomino Drive (dry cleaner facility), and 525 Grand Avenue have likely resulted in groundwater contamination underlying the subject site. Thus, these off-site regulatory properties have resulted in a recognized environmental condition.

2.2.5.3 Environmental Consequences

Construction Impacts

No-Build Alternative

Since no construction activities are proposed under the No-Build Alternative, no adverse effects under NEPA or significant impacts under CEQA would occur with respect to hazardous waste and materials.

Build Alternative

Activities related to hazardous materials handling during construction of the project include refueling and servicing construction equipment on site and the removal and export of potentially contaminated soils from the site. Construction of the Build Alternative would not affect the former land fill site north of the existing westbound SR-60 on and off-ramps. Based on the ADL content results in the ADL Content Testing Report, the on-site soils do not require any special handling during construction.

All refuse, trash, and miscellaneous debris scattered across the project site would require collection and proper disposal. Nonetheless, should accidental leaks or spills occur or if hazardous materials are encountered during construction, the Build Alternative could result in adverse effects under NEPA or significant impacts under CEQA. However, compliance with state and federal laws regarding waste disposal would ensure that the proposed project would not result in substantial adverse effects or significant impacts during the construction phase.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not result in any changes to existing operational conditions. Therefore, the No-Build Alternative would not result in any adverse effects under NEPA or significant impacts under CEQA due to hazards and hazardous materials.

Build Alternative

Following construction of the Build Alternative, operations are not expected to result in the creation of health hazards or expose people to potential health hazards because the Build Alternative consists of roadway improvements only, and the storage of toxic materials or chemicals is not a proposed component of the proposed project. The project is not located in the immediate vicinity of a residential neighborhood or any schools. The hazards associated with vehicular transport of hazardous waste are regulated under existing programs and would not be affected by the Build Alternative. Thus, there would be no operational adverse effects under NEPA or significant impacts under CEQA.

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA. However, the avoidance and minimization measures listed below appear warranted given the potential effects/impacts described above.

- Contractors excavating, transporting, or stockpiling soil shall prepare a Lead Compliance Plan in accordance with Caltrans' Code of Safety Practices, California Code of Regulations and Cal/OSHA standards addressing the presence of ADL in the soils within the project area.
- Lead testing results contained in the ADL Content Testing Report shall be provided to contractors handling on-site soils during construction.
- Should construction activities result in the removal of yellow paint or thermoplastic traffic stripes, the age of the traffic striping shall be determined. If lead and/or chromium are present in the materials at or above hazardous waste levels, the materials shall be disposed at a permitted Class I disposal facility in California.
- In addition, a project-specific Lead Compliance Plan (LCP) shall be developed to prevent or minimize worker exposure to lead while handling materials containing lead. Attention shall be directed to California Code of Regulations, Title 8, Section 1532.1, Lead, for specific California Occupational Safety and Health Administration (Cal/OSHA) requirements when working with lead.
- Transformer and/or high-voltage power box relocation during site construction/demolition shall be under the purview of the local utility purveyor to identify proper handling procedures regarding PCBs.
- Should an on-site transformer (one that may be required to be relocated as part of the project) be located over bare soil, the underlying soil shall be sampled by a qualified hazardous materials specialist during the construction phase, both prior to and during any excavation and ground-disturbing activities.
- Should construction require dewatering, resulting in groundwater being encountered on site, a qualified hazardous materials consultant with Phase II and Phase III experience shall review all available files for the addresses listed in Subsection 2.2.5.2, Affected Environment, prior to beginning construction.

2.2.6 Air Quality

2.2.6.1 Regulatory Setting

Federal Standards

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 (California CAA). 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; the criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), lead (Pb), sulfur dioxide (SO₂), and particulate matter.

Under the 1990 CAA amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the State Implementation Plan (SIP) for achieving the goals of the CAA. Conformity with the CAA takes place on two levels: 1) at the regional level and 2) at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for CO, NO₂, O₃, and particulate matter. California is in attainment status for the other criteria pollutants. At the regional level, RTPs are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Using the projects included in the RTP, an air quality model determines whether 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 SCAG for Los Angeles County, and the appropriate federal agencies, such as 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 the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for the purposes of project-level analysis.

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

State Standards

Responsibility for achieving the California Ambient Air Quality Standards (CAAQS) (Table 2-21), which, for certain pollutants and averaging periods, are more stringent than the federal standards, is placed on the California Air Resources Board (ARB) and local air pollution control districts. State standards are achieved through district-level air quality management plans that are incorporated into the SIP for which ARB is the lead agency. The California CAA substantially added to the authority and responsibilities of air districts. The California CAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures.

The California CAA focuses on attainment of the state ambient air quality standards and requires designation of attainment and nonattainment areas with respect to those standards. The act also requires local and regional air districts to adopt and prepare an air quality attainment plan (Clean Air Plan) if the district violates state air quality standards for O₃, CO, SO₂, or NO₂. These plans are specifically designed to attain state standards. They must achieve an annual 5 percent reduction in district-wide emissions for each nonattainment pollutant or its precursors. No locally prepared attainment plans are required for areas that violate the state standards for particulate matter smaller than or equal to 10 microns in diameter (PM₁₀); ARB is responsible for developing plans and projects that achieve compliance with the state PM₁₀ standards.

2.2.6.2 Affected Environment

The following technical reports were reviewed in preparation of this document:

- *SR-57/SR-60 Westbound Slip Ramp Air Quality Study Report* (ICF International 2011),
- *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas* (Federal Highway Administration and U.S. Environmental Protection Agency 2006),
- *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* (Federal Highway Administration 2009a),
- *Transportation Project-level Carbon Monoxide Protocol* (Garza et al. 1997),
- *Entrained Paved Road Dust, Paved Road Travel* (Section 7.9) (California Air Resources Board 1997), and
- *Technology Transfer Network Clearinghouse for Inventories and Emissions Factors*, AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources. Section 13.2.1, Paved Roads (U.S. Environmental Protection Agency 2006a).

The *SR-57/SR-60 Westbound Slip Ramp Air Quality Study Report* (ICF International 2011) contains a comprehensive description of the affected environment and includes information regarding the physical setting, regulatory setting, attainment status, relevant pollutants, and sensitive receptors in the project area. A summary of this information is provided below.

Table 2-21. Ambient Air Quality Standards Applicable in California and the Attainment Status of the South Coast Air Basin

Pollutant	Symbol	Average Time	Standard (parts per million [ppm])		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of South Coast Air Basin	
			California	National	California	National	California	National	California	National
Ozone	O ₃	1 hour	0.09	NA	180	NA	If exceeded	NA	Extreme nonattainment	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth-highest 8-hour concentration in a year, averaged over 3 years, is greater than the standard	Nonattainment	Extreme nonattainment
Carbon monoxide (Lake Tahoe only)	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year	Attainment	Attainment/maintenance
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year	Attainment	Attainment/maintenance
		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA	Attainment	NA

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

Pollutant	Symbol	Average Time	Standard (parts per million [ppm])		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of South Coast Air Basin	
			California	National	California	National	California	National	California	National
Nitrogen dioxide	NO ₂	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year	Nonattainment ^a	Attainment/maintenance
		1 hour	0.18	0.100	339	NA	If exceeded	If the 3-year average of the 98 th percentile of the daily maximum 1-hour average at each monitor within an area is exceeded	Nonattainment ^a	NA
Sulfur dioxide	SO ₂	Annual arithmetic mean	NA	NA ^b	NA	80	NA	NA	NA	NA ^b
		24 hours	0.04	NA ^b	105	365	If exceeded	NA	Attainment	NA ^b
		1 hour	0.25	0.075 ^b	655	NA	If exceeded	If the 3-year average of the annual 99 th percentile of 1-hour daily maximum concentrations is exceeded.	Attainment	Attainment/unclassified

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

Pollutant	Symbol	Average Time	Standard (parts per million [ppm])		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of South Coast Air Basin	
			California	National	California	National	California	National	California	National
Hydrogen sulfide	H ₂ S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA	Unclassified	NA
Vinyl chloride	C ₂ H ₃ Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA	No information available	NA
Sulfate particles	SO ₄	24 hours	NA	NA	25	NA	If equaled or exceeded	NA	Attainment	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded more than 1 day per year	Nonattainment in Los Angeles County	Nonattainment in Los Angeles County
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA	Nonattainment in Los Angeles County	Nonattainment in Los Angeles County
		Rolling 3-month average	NA	NA	NA	0.15	NA	Averaged over a rolling 3-month period	Nonattainment in Los Angeles County	Nonattainment in Los Angeles County

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

Pollutant	Symbol	Average Time	Standard (parts per million [ppm])		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of South Coast Air Basin	
			California	National	California	National	California	National	California	National
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	NA	If exceeded	NA	Nonattainment	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year	Nonattainment	Serious nonattainment
	PM2.5	Annual arithmetic mean	NA	NA	12	15.0	If exceeded	If 3-year average of the weighted annual mean from single or multiple community-oriented monitors exceeds the standard	Nonattainment	Nonattainment
		24 hours	NA	NA	NA	35	NA	If less than 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard	NA	Nonattainment

Notes:

NA = not applicable; PM10 = particulate matter smaller than or equal to 10 microns in diameter; PM2.5 = particulate matter smaller than or equal to 2.5 microns in diameter. National standards shown are the primary (public health) standards. All equivalent units are based on a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^a The California Air Resources Board is currently considering the redesignation of the South Coast Air Basin to a nonattainment area for NO₂.

^b On June 2, 2010, the U.S. EPA established a new 1-hour SO₂ standard, effective August 23, 2010. The EPA also revoked both the existing 24-hour SO₂ standard of 0.14 ppm and the annual primary SO₂ standard of 0.030 ppm, effective August 23, 2010.

Sources: California Air Resources Board 2010a; California Air Resources Board 2010b; U.S. Environmental Protection Agency 2010a; U.S. Environmental Protection Agency 2010b.

Climate and Topography

The project site is located within the South Coast Air Basin (Basin), an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties as well as the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The most significant air pollution effects in the Basin occur from June to September because of large amounts of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thereby causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. Ozone concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert (ICF International 2011).

The average project area summer (July) high and low temperatures are 89°F and 59°F, respectively. The average project area winter (December) high and low temperatures are 68°F and 41°F, respectively. Annual average rainfall for the project area is 14.1 inches (Weather Channel 2009). Wind patterns in the project area display a unidirectional flow, with winds arising primarily from the west at an average speed of 4 miles per hour. Calm wind conditions are present 17.48 percent of the time (Servin 2003).

Existing Air Quality Conditions

Existing air quality conditions in the project area can be characterized according to the ambient air quality standards that the federal and state governments have established for various pollutants (see Table 2-21) and the monitoring data collected in the region. Concentrations in monitoring data are typically expressed in terms of ppm (parts per million) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The nearest air quality monitoring station in the vicinity is the Pomona monitoring station, located at 924 North Garey Avenue, which is approximately 6 miles from the project site. The Pomona station monitors O_3 , CO, and NO_2 . The closest station to the project area that monitors PM10 and particulate matter smaller than or equal to 2.5 microns in diameter (PM2.5) is the Azusa monitoring station, located at 803 North Loren Avenue in Azusa, which is approximately 11 miles away from the project area. The Azusa monitoring station monitors O_3 , CO, NO_2 , PM10, and PM2.5. Through consultation with the South Coast Air Quality Management District (SCAQMD), it was found that the most important factors when choosing a representative monitoring station for a particular project area are topography and meteorology. Of all the monitoring stations in the Basin, the Pomona and Azusa monitoring stations are most representative of the project area because they reside in the same unique geographic location as the proposed project (i.e., north of the Chino Hills). This area experiences warmer and drier weather conditions than areas south of the Chino Hills (California Air Resources Board 2008a). Air quality monitoring data from the Pomona and Azusa monitoring stations is summarized in Table 2-22. Monitoring values for O_3 and CO were obtained from the Pomona monitoring station, and monitoring values for PM2.5 and PM10 were obtained from the Azusa monitoring station. These values represent air quality monitoring data for the last three years (2007–2009) from which a complete record of data is available.

Table 2-22. Ambient Air Quality Monitoring Data Measured at the Pomona and Azusa Monitoring Stations

Pollutant Standards	2007	2008	2009
1-Hour Ozone			
Maximum 1-hour concentration (ppm)	0.153	0.141	0.138
1-hour California designation value	0.15	0.15	0.14
1-hour expected peak-day concentration	0.145	0.145	0.137
Number of days standard exceeded ^a			
CAAQS, 1-hour standard (> 0.09 ppm)	19	32	25
8-Hour Ozone			
National maximum 8-hour concentration (ppm)	0.109	0.110	0.099
National second-highest 8-hour concentration (ppm)	0.103	0.104	0.098
State maximum 8-hour concentration (ppm)	0.109	0.110	0.100
State second-highest 8-hour concentration (ppm)	0.103	0.104	0.099
8-hour national designation value	0.102	0.103	0.099
8-hour California designation value	0.113	0.120	0.110
8-hour expected peak-day concentration	0.119	0.122	0.115
Number of days standard exceeded ^a			
NAAQS, 8-hour standard (> 0.075 ppm)	19	35	21
CAAQS, 8-hour standard (> 0.070 ppm)	26	47	37
Carbon Monoxide (CO)			
National ^b maximum 8-hour concentration (ppm)	1.97	1.81	1.83
National ^b second-highest 8-hour concentration (ppm)	1.96	1.79	1.80
California ^c maximum 8-hour concentration (ppm)	1.97	1.98	2.21
California ^c second-highest 8-hour concentration (ppm)	1.96	1.81	1.80
Maximum 1-hour concentration (ppm)	3.3	2.6	—
Second-highest 1-hour concentration (ppm)	3.1	2.6	—
Number of days standard exceeded ^a			
NAAQS, 8-hour standard (\geq 9 ppm)	0	0	0
CAAQS, 8-hour standard (\geq 9.0 ppm)	0	0	0
NAAQS, 1-hour standard (\geq 35 ppm)	0	0	—
CAAQS, 1-hour standard (\geq 20 ppm)	0	0	—

Pollutant Standards	2007	2008	2009
Particulate Matter (PM10)^d			
National ^b maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	165.0	98.0	43.0
National ^b second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	83.0	75.0	25.0
State ^c maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	161.0	96.0	44.0
State ^c second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	81.0	74.0	26.0
State annual average concentration ($\mu\text{g}/\text{m}^3$) ^e	—	—	—
Number of days standard exceeded ^a			
NAAQS, 24-hour standard ($> 150 \mu\text{g}/\text{m}^3$) ^f	1	0	0
CAAQS, 24-hour standard ($> 50 \mu\text{g}/\text{m}^3$) ^f	11	12	0
Particulate Matter (PM2.5)			
National ^b maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	63.8	53.0	46.9
National ^b second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	57.9	48.1	46.9
State ^c maximum 24-hour concentration ($\mu\text{g}/\text{m}^3$)	63.8	53.0	46.9
State ^c second-highest 24-hour concentration ($\mu\text{g}/\text{m}^3$)	57.9	48.1	46.9
National annual designation value ($\mu\text{g}/\text{m}^3$)	16.0	15.1	—
National annual average concentration ($\mu\text{g}/\text{m}^3$)	15.7	14.0	—
State annual designation value ($\mu\text{g}/\text{m}^3$)	—	—	—
State annual average concentration ($\mu\text{g}/\text{m}^3$) ^e	—	—	—
Number of days standard exceeded ^a			
NAAQS, 24-hour standard ($> 35 \mu\text{g}/\text{m}^3$)	19	5	4
Notes: CAAQS = California Ambient Air Quality Standards. NAAQS = National Ambient Air Quality Standards. — = insufficient data available to determine the value. ^a An exceedance is not necessarily a violation. ^b National statistics are based on standard conditions data. In addition, national statistics are based on samplers, using federal reference or equivalent methods. ^c State statistics are based on local conditions data, except in the Basin where statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers. ^d Measurements usually are collected every 6 days. ^e State criteria for ensuring that the data are complete to calculate valid annual averages are more stringent than the national criteria. ^f Mathematical estimate of how many days the concentrations would have been measured as higher than the level of the standard had each day been monitored.			

Sources: California Air Resources Board 2010c; U.S. Environmental Protection Agency 2010c.

Table 2-22 indicates that the Pomona monitoring station has recorded 76 violations of the state 1-hour O₃ standard, 75 violations of the federal 8-hour O₃ standard, 110 violations of the state 8-hour O₃ standard, and no violations of the federal and state CO standards during the 3-year monitoring period. The Azusa monitoring station has experienced one violation of the national PM10 standard, 23 violations of the state PM10 standard, and 28 violations of the national PM2.5 standard during the 3-year monitoring period.

Attainment Status

EPA has classified the Basin as an extreme nonattainment area for the federal 8-hour O₃ standard. For the federal CO standard, EPA has classified the Basin as an attainment/maintenance area. EPA has classified the Basin as a serious nonattainment area for the federal PM10 standard and a nonattainment area for the federal PM2.5 standard (see Table 2-21) (U.S. Environmental Protection Agency 2010b). ARB has classified the Basin as an extreme nonattainment area for the state's 1-hour O₃ standard and as a nonattainment area for the state's 8-hour O₃ standard. For the state's CO standard, ARB has classified the Basin as an attainment area. ARB has classified the Basin as a nonattainment area for the state's PM2.5 and PM10 standards (see Table 2-21) (California Air Resources Board 2010b).

Sensitive Receptors

Caltrans defines sensitive receptors (aka: sensitive land uses) as schools, medical centers and similar health care facilities, child care facilities, parks, and playgrounds (California Department of Transportation 2008). SCAQMD defines a sensitive receptor as a person in the population who is particularly susceptible to health problems resulting from exposure to air pollutants (South Coast Air Quality Management District 2005). The area surrounding the project site consists primarily of open space to the north, northwest, and northeast; recreational uses (golf course) to the south, southwest, and east; and business uses to the northwest. These land uses are not considered sensitive receptors by Caltrans or SCAQMD. The closest sensitive receptors, according to SCAQMD standards, would be the residents located approximately 0.5 mile northeast and east of the project area.

2.2.6.3 Methodology and Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, there would be no changes to the existing conditions at the project site.

Build Alternative

The Build Alternative would generate construction-related and operational emissions. The methods used to evaluate construction and operational effects are described below. See the air quality study report for more detailed methodology information (ICF International 2010).

Regional Conformity

The proposed project is located in an extreme nonattainment area with respect to the federal 8-hour O₃ standard (Table 2-21). A determination of compliance with regional transportation conformity requirements was made by evaluating the inclusion of the proposed project in the most recent RTP and FTIP. Please refer to the air quality study report (ICF International 2010) for an expanded discussion of this process.

No-Build Alternative

Under the No-Build Alternative, there would be no changes to existing conditions at the project site; therefore, a regional conformity analysis is not required.

Build Alternative

Conformity with the Regional Transportation Plan. The proposed project is fully funded and included in the *2008 Regional Transportation Plan: Making the Connections, Amendment #3* (2008 RTP Amendment #3) (project ID# LA0D393). In April 2010, SCAG found the project to be in conformity with the 2008 RTP Amendment #3 (Southern California Association of Governments 2010); FHWA adopted the air quality conformity finding on May 6, 2010 (U.S. Department of Transportation 2010). The project is also included in the SCAG financially constrained 2011 FTIP (project ID# LA0D393). SCAG's 2011 FTIP was approved by the FHWA on December 14, 2010. The design concept and scope of the proposed project are consistent with the project description in 2008 RTP Amendment #3, the 2011 FTIP, and the assumptions in SCAG's regional emissions analysis. Refer to the air quality appendix (Appendix G) for documentation from the RTP Amendment #3 and the 2011 FTIP.

The regional emissions analysis found that regional emissions would not exceed the SIP's emission budgets for mobile sources in 1) the build year, 2) a horizon year of at least 20 years from when the conformity analysis began, or 3) additional years meeting the conformity regulation requirements for periodic analysis. The regional emissions analysis was based on the latest population and employment projections for Los Angeles County adopted by SCAG at the time the conformity analysis began. These assumptions are less than 5 years old. The modeling was conducted using current and future population, employment, traffic, and congestion estimates. The traffic data, including fleet mix data, were based on the latest vehicle registration data included in the EMFAC2007 model. Because 1) this project conforms to the most recent adopted RTP and FTIP, 2) the project has not significantly changed in design concept and scope, 3) there have been fewer than 3 years since the most recent step to advance the project, and 4) a supplemental environmental document for air quality purposes has not been initiated, a new conformity determination is not required. Consequently, no adverse effect is anticipated.

Project-level Conformity—Carbon Monoxide

The proposed project is located in an attainment/maintenance area with respect to the federal CO standard (Table 2-21). Consequently, the effects of localized CO hot-spot emissions were evaluated using the *Transportation Project-level Carbon Monoxide Protocol* (CO Protocol) developed for Caltrans by the Institute of Transportation Studies at the University of California, Davis (Garza et al. 1997). The CO Protocol details a qualitative step-by-step procedure for

determining whether project-related CO concentrations have the potential to generate new air quality violations, worsen existing violations, or delay attainment of the NAAQS for CO. Please refer to the air quality study report (ICF International 2011) for additional information.

No-Build Alternative

Under the No-Build Alternative, there would be no changes to existing conditions at the project site; therefore, a project-level conformity analysis is not required.

Build Alternative

Potential Violations of Carbon Monoxide NAAQS or CAAQS. The CO Protocol was used to evaluate the project's contribution to CO hot spots (Garza et al. 1997). Given the qualitative evaluation of the proposed project using the CO Protocol questions, the project would have no measurable effect on the percentage of vehicles operating in cold-start mode, would not increase traffic volumes, and would not worsen LOS. The project would actually improve LOS. Consequently, no violations of the CO NAAQS or CAAQS are anticipated with implementation of the proposed project. The air quality study report (ICF International 2011) provides further detail regarding the methodology used to reach this conclusion. There would be no adverse effect.

Project-level Conformity—Particulate Matter

The proposed project is located in a serious nonattainment area with respect to the federal PM10 standard and a nonattainment area with respect to the federal PM2.5 standard (Table 2-21). The effects of localized particulate matter were evaluated using the EPA and FHWA guidance manual, *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (Federal Highway Administration and U.S. Environmental Protection Agency 2006). This guidance details a qualitative screening procedure for identifying a project of air quality concern (POAQC). Please refer to the air quality study report (ICF International 2011) for an expanded discussion of this process.

No-Build Alternative

Under the No-Build Alternative, there would be no changes to existing conditions at the project site; therefore, a project-level conformity analysis is not required.

Build Alternative

Potential Violations of PM2.5 and PM10 NAAQS or CAAQS. EPA's transportation conformity rules stipulate that a transportation POAQC, or any other project identified by the PM2.5 SIP as a localized air quality concern, must undergo hot-spot analysis in PM2.5 nonattainment and maintenance areas. For areas without approved conformity SIPs, a PM10 hot-spot analysis is to be performed only for a POAQC. For areas with an approved conformity SIP, the 2006 particulate matter conformity final rule does not apply.

An analysis must be performed that meets the requirements in the approved PM10 SIP until the SIP is updated and subsequently approved by EPA. The Code of Federal Regulations indicates that a conformity SIP for particulate matter has not been approved for the Basin by EPA (40 CFR 52.223). Consequently, if the project is considered a POAQC, it must undergo PM10 (and PM2.5) hot-spot conformity determinations. Because the project area is located in a nonattainment area with respect to the PM2.5 standard and in a serious nonattainment area with respect to the PM10 standard (see Table 2-21), a hot-spot analysis must be performed for PM2.5 and PM10.

Table 2-23 below summarizes ADT for build and no-build scenarios. As shown in Table 2-23, ADT on SR-57/SR-60 would not exceed the FHWA and EPA's POAQC criterion of 125,000 vehicles; the project would have no meaningful effect on vehicle mix; and, there would be no increase in ADT between build and no-build conditions, only a redistribution of traffic between the existing westbound loop ramp and the new westbound slip ramp (KOA Corporation 2010). To add another layer of analysis, Tables 2-25 and 2-26, below, which summarize estimated operational emissions associated with the proposed project, show that emissions of PM2.5 and PM10 are anticipated to decrease with implementation of the Build Alternative. Consequently, the Build Alternative is not considered a POAQC for PM2.5 and PM10. Because the project is not considered a POAQC, the CAA and 40 CFR 93.116 requirements were met without a qualitative hot-spot analysis because the Build Alternative has been found not to be of air quality concern under 40 CFR 93.123(b)(1); therefore, implementation of the proposed project is not anticipated to contribute to additional exceedances of the NAAQS or CAAQS.

Table 2-23. Mainline and Grand Avenue ADT Volumes

Link	Existing	2013 No-Build	2013 Build	2035 No-Build	2035 Build
SR-60 EB between Grand Ave off- and on-ramps	112,496	111,859	111,859	108,360	108,360
SR-60 WB between SR-57 SB and Grand Ave on-ramp	107,936	109,576	109,576	118,596	118,596
Grand Ave SB north of SR-60 WB off- and on-ramps	16,630	23,380	23,380	37,320	37,320
Grand Ave SB between SR-60 WB off-ramp and WB on-ramp	14,280	19,990	23,380	26,900	42,610
Grand Ave SB between SR-60 WB on-ramp and EB ramps	14,280	19,990	19,990	26,900	26,900
Grand Ave SB between SR-60 EB ramps and Golden Springs Rd	13,990	14,270	14,270	16,010	16,010
Grand Ave NB north of SR-60 WB off- and on-ramps	11,980	15,280	15,280	28,610	28,610
Grand Ave NB between SR-60 EB and WB ramps	11,730	14,350	14,350	24,770	24,770
Grand Ave NB between Golden Springs Rd and SR-60 EB ramps	11,700	13,488	13,488	23,310	23,310

Source: KOA Corporation 2010.

In addition, the proposed project has undergone the required interagency consultation (IAC) process (40 CFR 93.105). On December 1, 2009, the IAC confirmed that the proposed project is not a POAQC. Documentation of the agency determination the proposed project is not a POAQC is included in the air quality appendix (Appendix G). There would be no adverse effect.

Naturally Occurring Asbestos

NOA is a fibrous material found in certain types of rock formations. It is the result of natural geologic processes and is commonly found near earthquake faults in California. Some rock types known to produce asbestos fibers are varieties of chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite.

Asbestos is harmless when it is left undisturbed under the soil, but if it becomes airborne, it can cause serious health problems. Human disturbance, or natural weathering, can break down asbestos into microscopic fibers that are easily inhaled. Inhalation of asbestos fibers can cause lung cancer, mesothelioma (a rare form of cancer found in the lining of internal organs), and asbestosis (a progressive, non-cancer disease of the lungs involving the buildup of scar tissue, which inhibits breathing) (U.S. Environmental Protection Agency 2008a, 2008b).

Both the EPA and the ARB have issued guidance for reducing exposure to NOA. The EPA's suggested measures include leaving NOA material undisturbed, covering or capping NOA material, limiting dust-generating activities, and excavating and disposing of NOA material (U.S. Environmental Protection Agency 2008c). The ARB has adopted Airborne Toxic Control Measures (ATCMs) that are required for road construction and maintenance projects, unless the project is found to be exempt. These ATCMs include stabilizing unpaved surfaces subject to vehicle traffic, reducing vehicle speeds, wetting or chemically stabilizing storage piles, and eliminating track-out material from equipment (California Air Resources Board 2008a).

Potential Release of Asbestos during Construction and Maintenance Activities. While NOA is common in certain counties of California, it is not likely to be found in Los Angeles County (California Department of Conservation 2000). Therefore, there would be no adverse effect.

Mobile-source Air Toxics Emissions

Mobile-source air toxics (MSAT) emissions were evaluated using ADT volumes provided by KOA Corporation (KOA Corporation 2010), FHWA's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* (Federal Highway Administration 2009a), and ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB Land Use Handbook) (Brady pers. comm.; California Air Resources Board 2005). The FHWA MSAT guidance outlines a tiered approach for analyzing MSAT emissions in environmental documents, and the ARB Land Use Handbook guidance relies on ADT volumes and the distance of the project from sensitive receptors. Please refer to the air quality study report (ICF International 2011) for additional detail.

No-Build Alternative

Under the No-Build Alternative, there would be no changes to existing conditions at the project site; therefore, there would be no project-related emissions of MSATs.

Build Alternative

Table 2-23 above summarizes ADT for both the mainline and Grand Avenue under existing (2008), open-to-traffic-year (2013), and design-year (2035) with- and without-project conditions. As indicated in Table 2-23, implementation of the proposed project would not increase overall ADT volumes relative to no-project conditions; it would just redistribute ADT. A portion of the traffic that would normally be bound for the existing westbound loop ramp is anticipated to use the more direct westbound slip ramp, which would relieve the traffic that backs up as it waits to enter the westbound loop ramp. Grand Avenue southbound between the SR-60 westbound on- and off-ramps experiences an increase in ADT with implementation of the Build Alternative, but ADT on the next segment (Grand Avenue southbound between the SR-60 westbound on-ramp and eastbound ramps) remains the same (Table 2-23). This is because traffic that would normally be restricted to turning left at the existing westbound loop ramp would be able to continue and turn right onto the new, more direct westbound slip ramp. This redistribution of traffic would not move traffic closer to any sensitive receptors by. In addition, implementation of the proposed project is anticipated to result in no effect on vehicle mix. Because the proposed project would have no meaningful effects on traffic volumes or vehicle mix and would not move traffic closer to any sensitive receptors, it is considered a project with no meaningful potential MSAT effects (Level 1 according to the FHWA guidance). Further explanation of why the project would be considered a project with no meaningful potential MSAT effects is provided below.

Potential Generation of Adverse Levels of MSAT Emissions. The purpose of the proposed project is to improve traffic operations on Grand Avenue from Baker Parkway to the interchange at SR-60, increase capacity at the Grand Avenue interchange, reduce mainline traffic weaving between Grand Avenue and the SR-57/SR-60 interchange, and improve safety along Grand Avenue by constructing a direct on-ramp to westbound SR-60 from southbound Grand Avenue, widening Grand Avenue to accommodate an additional right-turn lane to the westbound on-ramp, removing the raised concrete median to provide a second left-turn lane to the eastbound on-ramp, eliminating existing nonstandard designs, and adding an auxiliary lane at the SR-60/Grand Avenue interchange.

The proposed project has been determined to reduce emissions of CAA criteria pollutants and has not been linked with any special MSAT concerns. This is because average speeds would increase (Table 2-24) and VMT would decrease with implementation of the proposed project (Table 2-25). Emissions of criteria pollutants and MSATs from vehicles share a positive relationship with VMT; therefore, reductions in VMT lead to reductions in criteria pollutant and MSAT emissions, with all other variables held constant. Also, according to the FHWA's Interim MSAT Guidance, "Projects that result in increased travel speeds will reduce MSAT emissions per VMT basis" (Federal Highway Administration 2009a). As shown in Table 2-24, the percentage of vehicles operating at low, high-pollutant-emitting speeds would be reduced with implementation of the proposed project. Therefore, not only would the project reduce VMT, it would also increase travel speeds. In addition, the vehicle mix would not change with project implementation (KOA Corporation 2010). As such, the proposed project would not result in an increase in MSAT effects when compared with the No-Build Alternative, and it is likely that the project would result in a decrease in MSAT effects. Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades.

Table 2-24. Calculated VMT by 5 mph Speed Bin

Peak-period VMT											
Actual Speed Bins	Speed Bin Name	Existing (2009)		2013 No Project		2013 With Project		2035 No Project		2035 With Project	
		VMT	%	VMT	%	VMT	%	VMT	%	VMT	%
0.00 – 4.99	5	0	0.000%	3,075	9.693%	0	0.000%	21,775	49.428%	8,247	19.185%
5.00 – 9.99	10	1,839	7.591%	12,486	39.359%	1,961	6.289%	5,081	11.534%	4,704	10.943%
10.00 – 14.99	15	5,162	21.308%	3,697	11.654%	6,849	21.966%	0	0.000%	13,905	32.348%
15.00 – 19.99	20	4,164	17.188%	0	0.000%	3,075	9.862%	0	0.000%	0	0.000%
20.00 – 24.99	25	2,495	10.299%	4,544	14.324%	9,304	29.840%	17,198	39.038%	14,327	33.329%
25.00 – 29.99	30	4,028	16.627%	7,921	24.969%	9,074	29.102%	0	0.000%	0	0.000%
30.00 – 34.99	35	0	0.000%	0	0.000%	917	2.941%	0	0.000%	1,803	4.194%
35.00 – 39.99	40	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
40.00 – 44.99	45	6,538	26.988%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
45.00 – 49.99	50	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
50.00 – 54.99	55	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
55.00 – 59.99	60	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
60.00 – 64.99	65	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
65.00 – 69.99	70	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
70.00 – 74.99	> 70	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
Totals		24,226	100.000%	31,723	100.000%	31,180	100.000%	44,054	100.000%	42,986	100.000%

Off-peak-period VMT											
Actual Speed Bins	Speed Bin Name	Existing (2009)		2013 No Project		2013 With Project		2035 No Project		2035 With Project	
		VMT	%	VMT	%	VMT	%	VMT	%	VMT	%
0.00 – 4.99	5	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
5.00 – 9.99	10	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
10.00 – 14.99	15	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
15.00 – 19.99	20	0	0.000%	0	0.000%	0	0.000%	1,000	3.203%	0	0.000%
20.00 – 24.99	25	0	0.000%	2,428	12.059%	294	1.496%	4,370	13.999%	1,507	5.061%
25.00 – 29.99	30	359	2.785%	15,336	76.170%	846	4.304%	24,618	78.861%	0	0.000%
30.00 – 34.99	35	1,603	12.437%	0	0.000%	0	0.000%	0	0.000%	24,618	82.669%
35.00 – 39.99	40	10,247	79.502%	0	0.000%	15,336	78.026%	1,229	3.937%	2,425	8.143%
40.00 – 44.99	45	0	0.000%	2,370	11.771%	3,179	16.174%	0	0.000%	1,229	4.127%
45.00 – 49.99	50	680	5.276%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
50.00 – 54.99	55	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
55.00 – 59.99	60	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
60.00 – 64.99	65	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
65.00 – 69.99	70	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
70.00 – 74.99	> 70	0	0.000%	0	0.000%	0	0.000%	0	0.000%	0	0.000%
Totals		12,889	100.000%	20,134	100.000%	19,655	100.000%	31,217	100.000%	29,779	100.000%

Adapted from: KOA Corporation 2010.

Table 2-25. Summary of CT-EMFAC-modeled Operational Emissions (pounds per day)

Scenario	Daily VMT	Pounds per Day					
		ROG ^a	NO _x	CO	PM10	PM2.5	CO ₂ ^b
Existing (2009)	37,115	21.645	51.900	283.116	2.362	2.126	6,695.053
2013 No Project	51,857	31.847	60.026	335.023	4.569	4.235	11,624.706
2013 Proposed Project	50,835	20.403	51.531	280.631	3.032	2.803	8,705.085
2035 No Project	75,271	21.520	25.964	172.473	7.361	6.818	19,094.232
2035 Proposed Project	72,765	15.376	22.602	153.302	5.476	5.126	16,937.666
Alternative Differences							
2013 Proposed Project – 2013 No Project	-1,022	-11.444	-8.495	-54.392	-1.536	-1.432	-2,919.621
2035 Proposed Project – 2035 No Project	-2,506	-6.144	-3.361	-19.171	-1.885	-1.692	-2,156.566
2013 Proposed Project – 2009 (Existing)	13,720	-1.243	-0.369	-2.486	0.670	0.677	2,010.031
2035 Proposed Project – 2009 (Existing)	35,650	-6.269	-29.297	-129.815	3.114	3.000	10,242.613
<p>^a Emissions of ROG were calculated from CT-EMFAC-estimated total organic gasses (TOG) emissions by multiplying the TOG emissions by the percentage of ROG of TOG obtained from EMFAC 2007. The percentage of ROG of TOG was calculated by summing all the speed bin emission factors from EMFAC 2007 for ROG and TOG. Then, summed ROG emission factors were divided by summed TOG emission factors. Through this method, percentages of 83.49% for 2009, 82.02% for 2013, and 77.18% for 2035 were applied to TOG emissions output by CT-EMFAC to obtain ROG emissions.</p> <p>^b CO₂ presented in metric tons per year.</p>							

Sources: KOA Corporation 2010; South Coast Air Quality Management District 2009.

Given the regulations now in effect, an analysis of national trends with EPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSATs between 1999 and 2050, while VMT is projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

Compliance with 40 CFR 1502.22 (b). To comply with Council on Environmental Quality regulations (40 CFR 1502.22[b]) pertaining to incomplete or unavailable information, a discussion regarding air toxics analysis and a summary of current studies regarding the health effects of MSATs is provided below. The text is taken from the Federal Highway Administration's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* (Federal Highway Administration 2009a).

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (U.S. Environmental Protection Agency 2010d). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's *Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (Health Effects Institute 2010a) or in the future as vehicle emissions substantially decrease (Health Effects Institute 2010b).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because unsupported assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects

emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's EMFAC2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (U.S. Environmental Protection Agency 2010e), which documents poor model performance at ten sites across the country – three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Health Effects Institute 2010a). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA and the HEI have not established a basis for quantitative risk assessment of diesel PM in ambient settings (U.S. Environmental Protection Agency 2010f; Health Effects Institute 2010a).

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Construction Emissions

Construction of the proposed project is anticipated to last from October 2011 to October 2012, a duration of 1 year. Construction is a source of fugitive dust and exhaust emissions that can have substantial temporary effects on local air quality (i.e., exceed state air quality standards for PM_{2.5} and PM₁₀). Such emissions would result from earthmoving and the use of heavy equipment as well as land clearing, ground excavation, cut-and-fill operations, and the construction of roadways. Dust emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather.

A qualitative assessment of temporary construction emissions of ozone precursors (ROG and NO_x), CO, PM₁₀ and PM_{2.5} is provided below.

No-Build Alternative

Under the No-Build Alternative, there would be no changes to existing conditions at the project site; therefore, there would be no construction-related effects.

Build Alternative

Potential Generation of Adverse Construction-Related Emissions of Ozone Precursors, Carbon Monoxide, and Particulate Matter. Implementation of the proposed project would result in the construction of a new direct on-ramp to westbound SR-60, the widening of Grand Avenue to accommodate an additional right-turn lane, removing the raised concrete median, and adding an auxiliary lane at the SR-60/Grand Avenue interchange. As previously mentioned, construction is anticipated to last for one year, from October 2011 to October 2012. Temporary construction emissions of ROG, NO_x, CO, and particulate matter would result from grubbing/land clearing, grading/excavation, drainage/utility/subgrade construction, paving activities, and construction workers' commuting patterns. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and would include CO, nitrogen oxides (NO_x), ROG, directly-emitted particulate matter (PM₁₀ and PM_{2.5}), and toxic air contaminants (aka: MSATs) such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NO_x and ROG in the presence of sunlight and heat.

Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most projects would be greatest during the

site-preparation phase because most engine emissions are associated with the excavation, handling, and transport of soil to and from the site. If not properly controlled, these activities would temporarily generate PM_{2.5}, PM₁₀, and small amounts of CO, SO₂, NO_x, and ROG. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soil. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, the silt content of the soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, ROG, and some soot particulate (PM_{2.5} and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO₂ is generated by oxidation during combustion of the organic sulfur compounds contained in diesel fuel. Off-road diesel fuel meeting federal standards can contain up to 5,000 ppm of sulfur, whereas on-road diesel is restricted to less than 15 ppm of sulfur. However, under California law and ARB regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel. Therefore, SO₂-related issues due to diesel exhaust would be minimal.

Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of each paving site. Such odors would be quickly dispersed below detectable thresholds as distance from the site increases.

According to federal conformity guidance, construction activities lasting less than five years are not expected to result in any adverse effects on air quality. Since construction will last for only one year, construction of the proposed project would not result in an adverse effect. In addition, compliance with measures AQ-1 and AQ-2; Caltrans' Standard Specifications, Section 7-1.01F and Section 10 (California Department of Transportation 2006a); and SCAQMD's Rule 403, respectively, would further reduce any effects on air quality.

Operational Emissions

Long-term air quality effects are those associated with motor vehicles operating on the roadway network, predominantly those operating in the vicinity of a project. The primary operational emissions associated with the Build Alternative are CO, PM₁₀, PM_{2.5}, the ozone precursors (i.e., reactive organic gases [ROG] and oxides of nitrogen [NO_x]), and carbon dioxide (CO₂) emitted as vehicle exhaust. The effects of these pollutants were quantified by using Caltrans' CT-EMFAC emissions model (version 2.6) and calculating entrained dust in accordance with the emission factor equation found in EPA's *Compilation of Air Pollutant Emission Factors*, AP-42, Section 13.2.1, document (U.S. Environmental Protection Agency 2006b) and ARB's methodology to calculate county-specific emissions inventories, *Entrained Paved Road Dust*,

Paved Road Travel, Section 7.9 (California Air Resources Board 1997). This methodology estimates project-level emissions from operations using traffic data provided by the project traffic engineers, KOA Corporation (KOA Corporation 2010). Refer to Table 2-24 for calculated VMT by speed bin extrapolated from VMT data provided by KOA Corporation. Please refer to the air quality technical report for additional information on the methodology and assumptions used to calculate operational emissions (ICF International 2011).

No-Build Alternative

Under the No-Build Alternative, there would be no changes to existing conditions at the project site; therefore, there would be no changes in operational emissions attributable to the project.

Build Alternative

Potential Generation of Adverse Operational Emissions of Ozone Precursors, Carbon Monoxide, and Particulate Matter. To analyze potential effects of projects, NEPA requires comparison of a project's emissions to no-build conditions, whereas CEQA requires comparison of a project's emissions to existing conditions.

NEPA

As shown in Table 2-25, emissions of all criteria pollutants in 2013 and 2035 are expected to decrease with implementation of the proposed project, when compared to no-project conditions. This is due to the decrease in daily VMT, project-related improvements in operational deficiencies in the roadway network, and retirement of older, higher-emitting vehicles. In addition, a parabolic relationship is typically observed between emissions rates and vehicle speeds, where emission rates are greatest from zero to 25 mph and at speeds above 55 mph; the lowest rates are typically observed at 45 mph. As shown in Table 2-24, the percentage of vehicles operating at speeds below 25 mph decreases with implementation of the proposed project. Since emissions of criteria pollutants are expected to decrease with project implementation, new contributions to exceedances of the NAAQS or CAAQS are not anticipated to result from the proposed project.

As shown in Table 2-26, daily PM₁₀ entrained dust is estimated to decrease with implementation of the proposed project when compared to no-project conditions, and based on EPA AP-42 guidance, no PM_{2.5} entrained dust is anticipated to result from project implementation; therefore, the proposed project is not anticipated to contribute to new violations of the NAAQS or CAAQS. Consequently, the generation of operational emissions resulting from the proposed project would be a less-than-adverse effect.

CEQA

As shown in Table 2-25, when compared to existing (2009) conditions, the proposed project would result in decreases of ROG, NO_x, and CO emissions in 2013 and 2035. Since the percentage of vehicles operating at speeds below 25 mph increases with implementation of the proposed project when compared to existing conditions (Table 2-24), and VMT increases when compared to existing conditions (Table 2-25), the reductions in emissions of ROG, NO_x, and CO emissions in 2013 and 2035 are attributable to the retirement of older, higher-emitting vehicles.

Table 2-26. Entrained Paved Road Dust (pounds per day)

		Entrained Paved Road Dust (pounds per day)				
		Existing (2009)	2013 No Project	2013 With Project	2035 No Project	2035 With Project
Street, Direction	Street Segment	PM2.5 and PM10 ^a	PM2.5 and PM10 ^a	PM2.5 and PM10 ^a	PM2.5 and PM10 ^a	PM2.5 and PM10 ^a
Grand Ave SB	Baker Pkwy to SR-60 WB	5.582	8.120	8.120	12.937	12.937
Grand Ave NB	SR-60 WB to Baker Pkwy	4.430	5.307	5.307	9.020	9.020
Grand Ave SB	SR-60 WB to SR-60 EB	1.480	2.094	2.094	2.892	2.892
Grand Ave NB	SR-60 EB to SR-60 WB	1.288	1.503	1.503	2.453	2.453
Grand Ave SB	SR-60 EB to Golden Spr	1.751	1.809	1.809	2.794	2.794
Grand Ave NB	Golden Spr to SR-60 EB	1.528	3.103	3.103	2.750	2.750
SR-60 WB Loop	Grand Ave to SR-60	2.015	2.617	1.102	4.566	0.853
SR-60 WB Slip	Grand Ave to SR-60	0.000	0.000	0.952	0.000	2.331
SR-60 WB Off	SR-60 to Grand Ave	0.960	1.068	1.068	1.594	1.594
SR-60 EB Off	SR-60 to Grand Ave	0.544	0.596	0.596	1.069	1.069
SR-60 EB On	Grand Ave to SR-60	0.883	2.371	2.371	1.420	1.420
Totals		20.461	28.588	28.024	41.495	40.114
<p>Notes:</p> <p>Entrained paved road dust was calculated according to the emission factor equation found in EPA's <i>Compilation of Air Pollutant Emission Factors</i>, AP-42, Section 13.2.1, document and ARB's methodology to calculate county-specific emissions inventories, Entrained Paved Road Dust, Paved Road Travel, Section 7.9. The following formula was used: Road Emissions (pounds particulate matter/day) = Daily VMT * Emission Factor (E). EPA Emission Factor Formula: $E = k(sL/2)^{0.65}(W/3)^{1.5}-C$, where E = emission factor in units of pounds of particulate matter /VMT; k = particle size multiplier (pounds/VMT); sL = roadway silt loading in g/m²; W = average weight (in tons) of vehicles traveling the road; and C = 1980s emission factor for vehicle fleet exhaust, brake wear, and tire wear. Also, k for PM10 = 0.016, k for PM2.5 = 0.0024, C for PM10 = 0.00047 pound/VMT, and C for PM2.5 = 0.00036 pound/VMT.</p> <p>According to Table 3 of ARB's methodology, sL for major roads in Los Angeles County = 0.037 g/m², and W for the county = 2.7 tons (California Air Resources Board 1997).</p> <p>^a According to EPA's AP-42, Section 13.2.1, document, there may be situations where low silt loading and/or low average vehicle weight will yield calculated negative emissions from EPA's Emission Factor Formula equation above. If this occurs, the emissions calculated from the equation should be set to zero. Calculated PM2.5 emissions were negative; therefore, PM2.5 emissions were set to zero.</p>						

Sources: California Air Resources Board 1997; U.S. Environmental Protection Agency 2006a.

Emissions of exhaust PM10 and PM2.5 are anticipated to increase by 0.670 and 0.677 pounds per day in 2013, respectively, when compared to existing conditions. In 2035, when compared to existing conditions, emissions of exhaust PM10 and PM2.5 are anticipated to increase by 3.114 and 3.000, respectively.

As shown in Table 2-26, combined PM10 and PM2.5 entrained dust is anticipated to increase by 7.563 pounds per day in 2013, when compared to existing conditions, and; combined PM10 and PM2.5 entrained dust is anticipated to increase by 19.653 pounds per day in 2035, when compared to existing conditions. This is due to increases in VMT. These small contributions of PM10 and PM2.5 are not anticipated to contribute to new violations of the CAAQS or NAAQS. Consequently, the generation of operational emissions resulting from the proposed project would be a less-than-significant impact.

2.2.6.4 Avoidance, Minimization, and/or Mitigation Measures

Caltrans' Standard Specifications pertaining to dust control are required in all construction contracts and should effectively reduce and control emissions effects during construction. Furthermore, Caltrans' Standard Specifications, Section 14, Environmental Stewardship, require the contractor to comply with SCAQMD rules, ordinances, and regulations. Implementation of the measures listed below would minimize air quality effects from construction activities.

Measure AQ-1: Implement California Department of Transportation Standard Specifications, Sections 7-1.01F, 10, and 18

To control the generation of construction-related PM10 emissions, the project applicant will follow Caltrans' Standard Specifications, Sections 7-1.01F, 10, and 18. Section 7, Legal Relations and Responsibility, addresses the contractor's responsibility for many items of concern, such as air pollution; the protection of lakes, streams, reservoirs, and other water bodies; the use of pesticides; safety, sanitation, and convenience of the public; and damage or injury to any person or property as a result of any construction. Section 7-1.01F specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Section 10 defines dust control measures, provided below (if dust palliative materials other than water are to be used, material specifications are contained in Section 18) (California Department of Transportation 2006a).

- Water for use in the work shall, at the option of the contractor, be potable or nonpotable. Nonpotable water shall consist of reclaimed wastewater or nonpotable water developed from other sources.
- If the contractor uses reclaimed wastewater in the work, the sources and discharge of reclaimed wastewater shall meet the California Department of Health Services water reclamation criteria and the RWQCB requirements. The contractor shall obtain either a wastewater discharge permit or a waiver from the RWQCB. Copies of permits or waivers from the RWQCB shall be delivered to the engineer before using reclaimed wastewater in the work.

- Nonpotable water used in the mixing and curing of concrete shall conform to the provisions in Section 90-2.03, Water.
- Nonpotable water, if used, shall not be conveyed in tanks or drain pipes that will be used to convey potable water. There shall be no connection between nonpotable water supplies and potable water supplies. Nonpotable water supply, tanks, pipes, and any other conveyances of nonpotable water shall be labeled:

**NONPOTABLE WATER
DO NOT DRINK**

- Water shall be applied in the amounts, at the locations, and for the purposes designated in the special provisions and in these specifications and as ordered by the engineer.
- Water for compacting embankment, subbase, base, and surfacing material as well as laying dust shall be applied by means of pressure-type distributors or pipe lines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water.
- Equipment used for the application of water shall be equipped with a positive means of shut-off.
- Unless otherwise permitted by the engineer or unless all the water is applied by means of pipe lines, at least one mobile unit with a minimum capacity of 1,000 gallons shall be available for applying water on the project at all times.
- If the contractor elects to do so, chemical additives may be used in water for compaction. If chemical additives are used, furnishing and applying the additives shall be at the contractor's expense.
- The right is reserved by the engineer to prohibit the use of a particular type of additive, designate the locations where a particular type of additive may not be used, or limit the amount of a particular type of additive to be used at certain locations if the engineer has reasonable grounds for believing that such use will in any way be detrimental.

**Measure AQ-2: Comply with SCAQMD's Rule 403 Requirements to Control
Construction Emissions of Fugitive Dust**

To control the generation of construction-related fugitive dust emissions, construction contractors shall comply with SCAQMD's Rule 403 requirements, which are summarized in Table 2-27.

Table 2-27. South Coast Air Quality Management District's Best Available Control Measures

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling 01-2 Stabilize backfill material during handling 01-3 Stabilize soil at completion of activity	Mix backfill soil with water prior to moving Dedicate water truck or high-capacity hose to backfilling equipment Empty loader bucket slowly so that no dust plumes are generated Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing 02-2 Stabilize soil during clearing and grubbing activities 02-3 Stabilize soil immediately after clearing and grubbing activities	Maintain live perennial vegetation where possible Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms 03-2 Use sweeping and water spray to clear forms 03-3 Use vacuum system to clear forms	Use of high-pressure air to clear forms may cause an exceedance of rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment 04-2 Stabilize material after crushing	Follow permit conditions for crushing equipment Pre-water material prior to loading into crusher Monitor crusher emissions opacity Apply water to crushed material to prevent dust plumes
Cut and fill	05-1 Pre-water soils prior to cut-and-fill activities 05-2 Stabilize soil during and after cut-and-fill activities	For large sites, pre-water with sprinklers or water trucks and allow time for penetration Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts

Source Category	Control Measure	Guidance
Demolition – mechanical/manual	06-1 Stabilize wind-erodible surfaces to reduce dust 06-2 Stabilize surface soil where support equipment and vehicles will operate 06-3 Stabilize loose soil and demolition debris 06-4 Comply with air quality management district Rule 1403	Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site 07-2 Stabilize disturbed soil between structures	Limit vehicular traffic and disturbances on soils where possible If interior block walls are planned, install as early as possible Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earthmoving activities	08-1 Pre-apply water to depth of proposed cuts 08-2 Re-apply water as necessary to maintain soils in a damp condition and ensure that visible emissions do not exceed 100 feet in any direction 08-3 Stabilize soils once earthmoving activities are complete	Grade each project phase separately, timed to coincide with construction phase Upwind fencing can prevent material movement on site Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions 09-2 Maintain at least 6 inches of freeboard on haul vehicles 09-3 Stabilize material while transporting to reduce fugitive dust emissions 09-4 Stabilize material while unloading to reduce fugitive dust emissions 09-5 Comply with California Vehicle Code Section 23114	Use tarps or other suitable enclosures on haul trucks Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage Comply with track-out prevention/mitigation requirements Provide water while loading and unloading to reduce visible dust plumes

Source Category	Control Measure	Guidance
Landscaping	10-1 Stabilize soils, materials, slopes	Apply water to materials to stabilize Maintain materials in a crusted condition Maintain effective cover over materials Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes Hydroseed prior to rainy season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance	Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs
Screening	12-1 Pre-water material prior to screening 12-2 Limit fugitive dust emissions to opacity and plume-length standards 12-3 Stabilize material immediately after screening	Dedicate water truck or high-capacity hose to screening operation Drop material through the screen slowly and minimize drop height Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use 13-2 Stabilize staging area soils at project completion	Limit size of staging area Limit vehicle speeds to 15 miles per hour Limit number and size of staging area entrances/exits
Stockpiles/bulk material handling	14-1 Stabilize stockpiled materials 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 feet in height or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage	Add or remove material from the downwind portion of the storage pile Maintain storage piles to avoid steep sides or faces
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas 15-2 Stabilize all haul routes 15-3 Direct construction traffic over established haul routes	Apply gravel/paving to all haul routes as soon as possible Barriers can be used to ensure vehicles are used only on established parking areas/haul routes

Source Category	Control Measure	Guidance
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate 16-2 Stabilize soils at the completion of trenching activities	Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench, and resuming trenching Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading 17-2 Ensure that freeboard exceeds 6 inches (California Vehicle Code 23114)	Empty loader bucket such that no visible dust plumes are created Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume-length standards 18-2 Cover haul vehicles prior to exiting the site	Haul waste material immediately off site
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots	Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicles and/or off-road vehicles from trespassing, parking, and/or accessing by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures	

Source: South Coast Air Quality Management District 2005.

Climate Change

Climate change is analyzed in Section 2.5, Climate Change (CEQA), of this chapter. Neither EPA nor FHWA has promulgated explicit guidance or methodology for conducting project-level greenhouse gas analysis. As stated on FHWA's climate change web site, climate change considerations should be integrated throughout the transportation decision-making process, from planning through project development and delivery (Federal Highway Administration 2009b). Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision making and improve efficiency at the program level as well as inform the analysis and stewardship needs of project-level decision making. Climate change considerations can be easily integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life (Federal Highway Administration 2009b).

Because additional requirements have been set forth in both California legislation and executive orders regarding climate change, the issue is addressed in Section 2.5 of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies pertain to improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in the growing number of vehicle hours traveled.

2.2.7 Noise

2.2.7.1 Regulatory Setting

NEPA and 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 foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and Caltrans, as assigned) involvement, 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 potential noise impacts in areas of frequent human use to be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC), which 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 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). The following table lists the NAC for use in the NEPA/23 CFR 772 analysis.

Table 2-28. Noise Abatement Criteria

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

Figure 2-10 lists the noise levels of common activities so that readers can compare the actual and predicted highway noise levels discussed in this section with common activities.

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects* (2006b), a noise impact occurs when the future noise level with the project results in a substantial increase in the 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 the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' traffic noise 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 a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies' input, newly constructed development versus development prior to 1978, and the cost per benefited residence.

2.2.7.2 Affected Environment

The following discussion incorporates the findings in the noise memorandum (ICF Jones & Stokes 2009d) that was prepared for this project.

Traffic Noise Analysis Protocol Screening Procedure

Pursuant to guidance contained in the traffic noise protocol, all Type I projects²⁴ must be analyzed for noise impacts using a preliminary screening procedure. The screening procedure is summarized in the protocol; a detailed description of the screening procedure is contained in Caltrans' *Technical Noise Supplement* (California Department of Transportation 1998). Step one of the screening procedure involves determining whether any potentially affected receivers are in the vicinity of the project. If there are no potentially affected receivers, the project is considered to have passed the screening procedure, and no further analysis is required.

²⁴ A Type 1 project, as defined in 23 CFR 772, is a federal or federal-aid project for 1) construction of a highway at a new location, 2) physical alteration of the vertical or horizontal alignment of an existing highway, or 3) construction of additional through lanes.

Figure 2-10. Noise Levels of Common Activities

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

Screening Procedure Results and Conclusions

The area surrounding the project site consists primarily of open space to the northwest and northeast, recreational uses (golf course) to the southeast and southwest, and business uses to the west. Caltrans (District 7) has determined that exposure to noise on an adjacent golf course is short term in nature because of the transitory nature of the game (Iverson pers. comm.). As such, there would be no long-term effect on golfers. Therefore, the golf course is not considered a noise-sensitive land use.

The business uses to the west of the interchange consist of a fast-food restaurant, located south of Grand Avenue and approximately 270 feet from the near lanes of SR-60/SR-57, and an auto dealership that is no longer in business, located south of Grand Avenue and approximately 400 feet from the near lanes of SR-60/SR-57. The auto dealership has no outdoor noise-sensitive uses (such as lunch or break areas) with exposure to the interchange and, therefore, is not considered a noise-sensitive use. The fast-food restaurant has a former children's playground area that faces the freeway. The playground area has been closed for some time and will not be reopened, according to restaurant management (Aragues pers. comm.). The restaurant manager said during a site visit on June 2, 2009, and during a subsequent telephone conversation on June 12, 2009, that no playground or other noise-sensitive uses are planned for the area. Therefore, there is no longer an exterior noise-sensitive use at this location.

For the reasons stated above, there are no potentially affected noise-sensitive receivers in the vicinity of the project. The proposed project is considered to have passed the screening procedure. No further noise impact analysis is required.

2.2.7.3 Environmental Consequences

Construction Impacts

No-Build Alternative

The No-Build Alternative would not involve construction activities and therefore, would also not generate construction noise.

Build Alternative

As determined in the traffic noise protocol screening procedure and discussed in the noise memorandum, there are no potentially affected noise-sensitive receivers in the vicinity of the proposed project. Therefore, there would be no potential for construction noise impacts or adverse effects.

Operational Impacts

No-Build Alternative

Under the No-Build Alternative, there would be no changes in operational noise from what currently exists at the project site.

Build Alternative

There are no potentially affected noise-sensitive receivers in the vicinity of the proposed project. Given the scale of the project, no impacts or adverse effects on noise-sensitive receivers would occur as a result of the project.

2.2.7.4 Avoidance, Minimization, and/or Abatement Measures

The proposed project would have no impact on noise-sensitive receivers under CEQA and no adverse effect under NEPA. Therefore, no avoidance, minimization, and/or abatement measures are required.

2.3 Biological Environment

2.3.1 Natural Communities

The analysis of potential impacts of the proposed project on natural communities is based on the Natural Environment Study – (Minimal Impacts (NES-MI) (Sage Environmental Group 2009). This section discusses natural communities of concern. The focus of this section is on biological communities and not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for daily or seasonal migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Habitat areas that have been designated as critical habitat under the federal Endangered Species Act (ESA) are discussed in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 2.3.2.

Several biological technical reports have been prepared for the project area in the past. These include a biological reconnaissance survey, jurisdictional delineation, native tree inventory, and focused surveys.

The data and analysis contained in this section are based on the findings of the biological technical report and are specific to the Biological Study Area (BSA) for the proposed project.

2.3.1.1 Regulatory Setting

This section discusses natural communities and habitat not listed as critical habitat under the federal ESA. There is no specific regulatory setting for natural communities, but it is an important component in understanding the context of the biological setting for the proposed project.

2.3.1.2 Affected Environment

The BSA for the proposed project encompasses an approximately 2.5-acre limit of disturbance and a 50-foot buffer. The BSA extends along SR-60 from the eastern limits of the Grand Avenue interchange westward approximately 1,600 linear feet. The BSA also extends 100 to 200 feet on the north side of the SR-60 right-of-way to capture ancillary improvements and potential indirect effects. The limits of the BSA include the current Caltrans right-of-way and adjacent private/public property required for on-ramp and ancillary improvements, including retaining walls, drainage facility extensions, utility relocations, water quality treatment BMPs, temporary construction easements and staging areas, and the relocation of Old Brea Canyon Road adjacent to SR-60.

SR-60 is relatively flat, ranging from approximately 190 to 205 feet in elevation. The Grand Avenue overcrossing is approximately 700 feet in elevation at its highest point. Much of the vegetation adjacent to SR-60 and Grand Avenue is ruderal and ornamental, including landscaping with coast live oak (*Quercus agrifolia*) and California walnut (*Juglans californica*). A segment of Diamond Bar Creek, an unimproved perennial drainage tributary to the San Gabriel River, is located in the northwest quadrant of the BSA adjacent to SR-60. Sensitive resources associated with the Diamond Bar Creek riparian system within the BSA include California walnut

woodland, southern willow scrub, and several individual California sycamore. The location of each habitat in the BSA is shown in Figure 2-11. These habitat types are described in detail below. The dominant habitat types in the BSA consist of nonnative ruderal vegetation and, in developed areas, ornamental vegetation (developed/ornamental). Other plant communities present in the BSA are California walnut woodland and southern willow scrub.

Developed/Ornamental

Much of the BSA is developed with roadway and business uses. The area includes ornamental plantings consisting of introduced and native plant species used for landscaping. The common vegetation type within these developed areas consists of exotic landscaping.

Several coast live oak are located within the landscaped northeast quadrant of the BSA. These trees appear to have been planted as part of a Caltrans landscaping program. Several California walnut are located within the southeast quadrant of the BSA, which are part of the golf course landscaping. One large California sycamore is located within the northwest quadrant of the BSA. The proposed improvements are not expected to extend within the drip lines of these native species.

Ruderal Vegetation

The majority of the BSA consists of nonnative ruderal vegetation along the margins of the paved roads and developed areas. Ruderal areas typically have heavily compacted or frequently disturbed soils. These areas are dominated by pioneering herbaceous plants, grasses (i.e., *Bromus* and *Avena* spp.), and noxious weeds, including mustards (i.e., *Brassica* spp., *Hirschfeldia incana*), thistles (i.e., *Silybum marianum*, *Carduus pycnocephalus*, *Centaurea melitensis*), and fennel (*Foeniculum vulgare*).

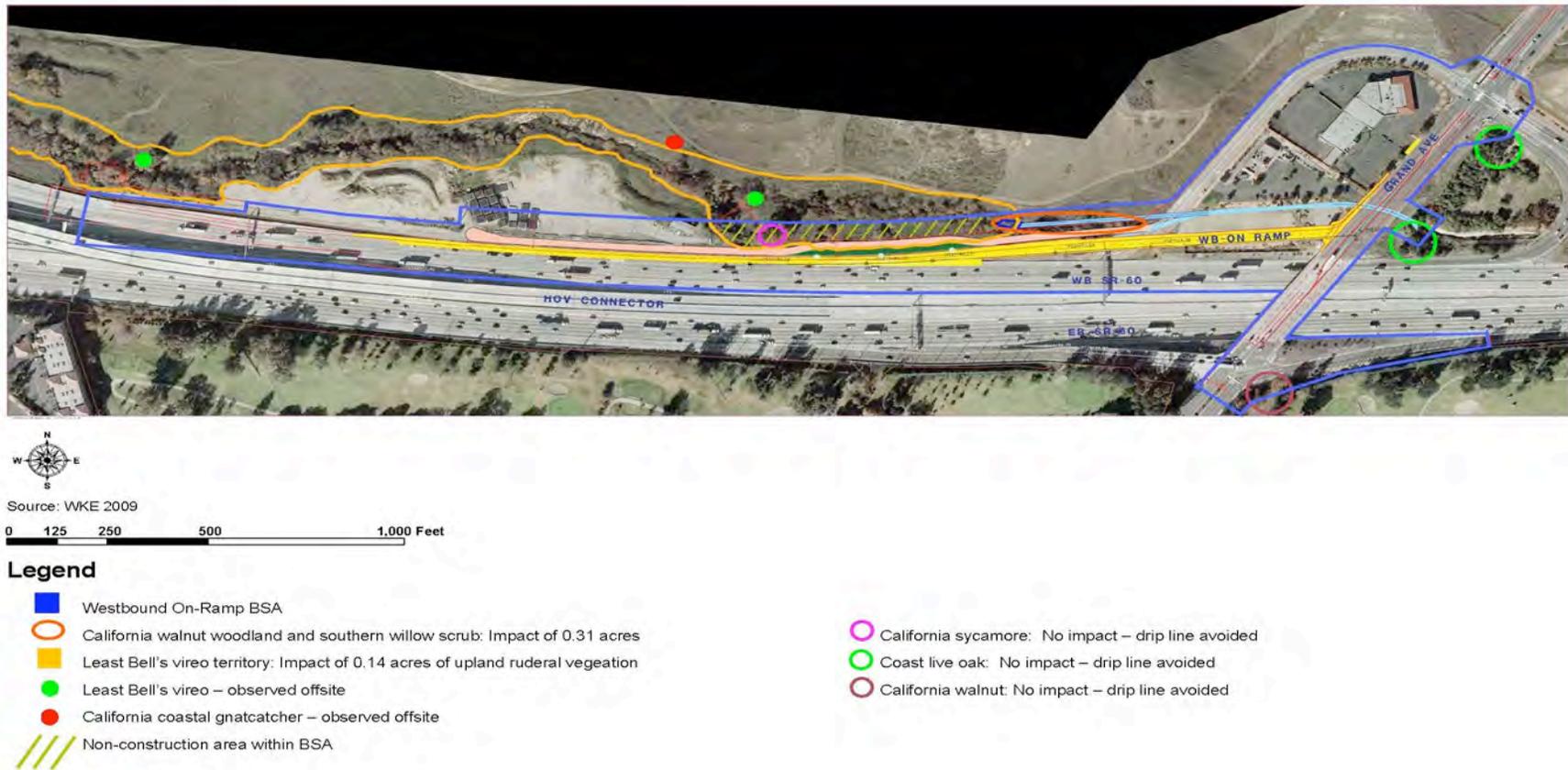
California Walnut Woodland

There is a small segment of Diamond Bar Creek in the northwest quadrant of the BSA. This area contains elements of California walnut woodland. This vegetation community is described by Holland 1986 as an open canopy dominated by California walnut trees. The open tree canopy allows development of a grassy understory. In most sites, this understory is composed of introduced winter annuals that complete most of their growth cycle before the deciduous California walnut trees leaf out in spring. This community is typically found on relatively moist, fine-textured soils on valley slopes and bottoms as well as encircling rocky outcrops.

Southern Willow Scrub

There is a small segment of Diamond Bar Creek in the northwest quadrant of the BSA. This area contains elements of southern willow scrub. This vegetation community, as described by Holland 1986, is a dense, broadleaved, winter-deciduous riparian thicket dominated by several willow tree species (*Salix* sp.), with scattered emergent Fremont cottonwood trees (*Populus fremontii*) and California sycamore trees (*Platanus racemosa*) often present. Most stands are too dense to allow much understory development. This community typically occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows.

Figure 2-11. Sensitive Biological Resources



Source: SAGE Environmental, 2009.

Wildlife and Wildlife Corridors

Wildlife corridors provide specific opportunities for individual animals to disperse or migrate between other areas. Adequate cover, minimal physical dimensions, and low levels of disturbance and mortality (e.g., limited night lighting and noise and low vehicular traffic levels) are common requirements for corridors.

The BSA includes a small segment of Diamond Bar Creek, which contains native vegetation. The remainder of the BSA is characterized by ruderal and ornamental vegetation. Diamond Bar Creek does not appear to have the usual important characteristics of a valuable corridor because the upstream and downstream reaches of Diamond Bar Creek are either piped underground or lined with concrete, creating high, steep walls. Freeway noise and night lighting are also present. Given some of the physical man-made constraints, it is likely that Diamond Bar Creek does not provide important value for the movement of mammals. There is little opportunity for movement from Diamond Bar Creek to the west or the north. However, there may be the potential for animals to move from Diamond Bar Creek to the Puente Hills and open space located to the southwest.

Within the context for bird movement, Diamond Bar Creek may function to some degree as a linkage and/or corridor for species in the San Jose Hills, Puente Hills, and Whittier Narrows by providing a visual as well as a physical connection. These open space areas are occupied by listed species such as coastal California gnatcatcher and least Bell’s vireo. Both species were observed adjacent to the BSA along Diamond Bar Creek.

2.3.1.3 Environmental Consequences

Vegetation Communities

No-Build Alternative

The No-Build Alternative would not require construction activities or changes to the existing conditions of vegetation communities in the vicinity of the project site.

Build Alternative

Table 2-29 provides data regarding the impact the Build Alternative would have on the vegetation communities in the BSA.

Table 2-29. Build Alternative Impacts on Vegetation Communities

Vegetation Community	Acres Present within the BSA	Acres of Impact
Developed/Ornamental	19.0	1.0
Ruderal Vegetation	1.92	1.3
California Walnut Woodland	0.56	0.06
Southern Willow Scrub	0.57	0.25

Source: Sage Environmental, 2009.

Within the BSA, approximately 0.31 acre California walnut woodland and southern willow scrub habitat associated within Diamond Bar Creek would be directly affected as a result of construction of the proposed Old Brea Canyon Road box culvert extension. This would result in a substantial adverse effect under NEPA and a significant impact under CEQA.

Wildlife and Wildlife Corridors

As described earlier in the Affected Environment section, a number of man-made physical constraints exist in the Diamond Bar Creek area. Therefore, it is likely that Diamond Bar Creek does not provide important value for the movement of mammals. However, within the context for bird movement, the Diamond Bar Creek riparian corridor within and adjacent to the BSA may function as a potential linkage to open space areas in the region. The proposed project would avoid or minimize encroachment into Diamond Bar Creek to the extent possible. Permanent impacts would be limited to the 300-linear-foot extension of the existing Old Brea Canyon Road drainage culvert. The value of Diamond Bar Creek as a potential corridor and/or linkage for birds moving between the Puente Hills, San Jose Hills, and Whittier Narrows would not be substantially altered by the proposed project.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would result in adverse effects under NEPA and significant impacts under CEQA. However, the measures listed below are proposed to reduce the effects/impacts of the proposed project on natural communities.

BIO-1 To ensure that the construction footprint within the BSA is minimized to the extent practicable adjacent to Diamond Bar Creek, the construction limits, as defined in Figure 2-11, shall be clearly defined on the construction drawings. Construction equipment shall access the site from the east end of the creek at the existing structure to limit impacts on the downstream preserved area. All equipment maintenance, staging, and dispensing of fuel, oil, or coolant, or any other such activities, will be restricted to designated disturbed/developed areas. These areas will be located in such a manner as to prevent runoff from entering existing native vegetation areas and clearly designated on the construction plans.

Prior to construction, under the supervision of the project biologist, the limits of project impacts (including construction staging areas and access routes) will be clearly delineated with bright orange plastic fencing, stakes, flags, or markers that will be installed in a manner that does not affect habitats to be avoided and such that they are clearly visible to personnel on foot and operating heavy equipment. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the Carlsbad Fish and Wildlife Office (CFWO). Any impacts that occur beyond the approved fenced area will be offset in consultation with the CFWO. Temporary construction fencing and markers will be removed upon project completion.

BIO-2 Although not anticipated, any native coast live oak present within the existing Caltrans landscaped areas that require removal shall be replaced as follows:
Mark all native trees (diameter at breast height [dbh] of more than 6 inches and

4.5 feet above surrounding grade) and replace with the same species at a 1:1 ratio. Source materials shall be the same subspecies and/or variety locally present and seeds or cuttings gathered within coastal Southern California to ensure local provenance.

BIO-3 All native trees located outside of Caltrans' landscaped areas that require removal shall be replaced as follows: Mark all native trees (dbh of more than 6 inches and 4.5 feet above surrounding grade) and replace with the same species at a 2:1 ratio. Source materials shall be the same subspecies and/or variety locally present and seeds or cuttings gathered within coastal Southern California to ensure local provenance. Cuttings, when possible, shall be gathered from Diamond Bar Creek to ensure true genetic continuity.

BIO-4 Caltrans will ensure that the following will be implemented during project construction:

- a. Contractors and construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint;
- b. The project site will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site;
- c. Pets of project personnel will not be allowed on the project site;
- d. All equipment maintenance, staging, and dispensing of fuel, oil, or coolant, or any other such activities, will occur within the fenced project impacts limits;
- e. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures;
- f. If night work is necessary, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded, and directed away from natural habitats;
- g. Cut and fill will be balanced within the project, or the construction contractor will identify the source or disposal location. All spoils and material disposal will be disposed of properly.

Mitigation of effects/impacts on California walnut woodland and southern willow scrub is provided in the Wetlands and Other Waters section, below (refer to mitigation measure BIO-4 and minimization measure BIO-9 and the discussion of additional measures that may be imposed subject to concurrence of the resource agencies as described in the Avoidance, Minimization, and/or Mitigation Measures subsection). Project effects/impacts on other vegetation communities would not require mitigation.

Mitigation of effects/impacts on wildlife and wildlife corridors is provided in the Animal Species section, below. Project effects/impacts on other vegetation communities would not require mitigation.

2.3.2 Wetlands and Other Waters

The analysis of potential impacts of the proposed project on wetlands and other waters is based on the NES-MI (Sage Environmental Group 2009) and the Jurisdictional Delineation – Existing Conditions (Sage Environmental Group 2007).

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the CWA (33 USC 1344) is the primary law regulating wetlands and waters. The act 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, which 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 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 would be significantly degraded. The Section 404 permit program is administered by USACE, with oversight by EPA.

The executive order for the protection of wetlands (Executive Order 11990) also regulates activities of federal agencies with respect to wetlands. Essentially, this executive order states that a federal agency, such as FHWA, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by CDFG and the RWQCBs. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600–1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow 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 jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement from CDFG.

The RWQCBs were established under the Porter-Cologne Act to oversee water quality. The RWQCBs also issue water quality certification in compliance with Section 401 of the CWA. Please see the Water Quality section for additional details.

2.3.2.2 Affected Environment

Diamond Bar Creek is the only drainage feature located within the proposed project's BSA. The drainage originates on site at the existing Old Brea Canyon Road box culvert outlet located west of Grand Avenue. The drainage flows westerly as an unimproved riparian corridor for approximately 0.80 mile along north side of SR-60 before transitioning to a concrete-lined trapezoidal channel and undergrounding at Old Brea Canyon Road. Within the BSA, Diamond Bar Creek contains mature riparian California walnut woodland and southern willow scrub habitat along the streambank but sparse vegetation within the channel bottom due to existing scour conditions.

Drainage within the BSA includes approximately 0.25 acre of USACE waters of the United States, including 0.006 acre of wetlands. Total acreage under CDFG jurisdiction in the BSA amounts to approximately 0.57 acre, which includes 0.25 acre of streambed, with 0.006 acre of wetlands and 0.32 acre of riparian habitat.

2.3.2.3 Environmental Consequences

Construction Impacts

No-Build Alternative

The No-Build Alternative would not involve construction activities; therefore, there would be no impacts to wetlands or other waters.

Build Alternative

Short-term indirect impacts associated with construction of the proposed project may result from potential fuel or lubricant spills from equipment or vehicles; activities outside of designated construction areas involving equipment, vehicles, or personnel; increased erosion, siltation, or runoff; increased localized noise and vibration; and increased dust accumulation on plant leaves. Long-term indirect impacts on sensitive riparian habitat could result from impacts on water quality. Temporary impacts would include the installation of a non-grouted energy dissipater at the terminus of the culvert and impacts associated with equipment maneuvering during construction. Construction equipment would access the site from the east end of the creek, at the existing structure, to limit impacts on the downstream preserved area. These potential construction impacts would be substantially adverse effects under NEPA and significant under CEQA.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not change existing conditions with respect to wetlands or other waters; therefore, operational changes resulting from the No-Build Alternative would not occur.

Build Alternative

Current engineering design plans indicate an approximately 300-linear-foot extension to the existing Old Brea Canyon Road box culvert west of Grand Avenue. Construction of the Build Alternative would result in 0.25 acre of permanent impacts on USACE waters of the United States, including 0.006 acre of wetlands. The Build Alternative would also permanently affect 0.15 acre of CDFG jurisdictional streambeds, including 0.006 acre of wetlands and 0.16 acre of CDFG jurisdictional riparian habitat. Therefore, the Build Alternative would result in substantially adverse effects under NEPA and significant impacts under CEQA.

Determination of Least Environmentally Damaging Practicable Alternative

In an analysis of key balancing factors, Caltrans has not only formally selected the Build Alternative as the “preferred alternative” but also the Least Environmentally Damaging Practical Alternative, or LEDPA, despite the potential harm to wetlands, as described above in this section. While the No-Build Alternative would not affect wetlands in the project vicinity, it would not achieve the objective of the project, which is to improve geometric and operational deficiencies of the intersection of Grand Avenue with SR-60. The proposed construction of a direct on-ramp from southbound Grand Avenue to SR-60 would help to alleviate the traffic congestion and delay associated with the existing condition of having only a loop on-ramp for both northbound and southbound Grand Avenue traffic as it tries to access westbound SR-60. The inclusion of mitigation measures BIO-4 through BIO-9 would minimize harm to wetlands from the proposed action to the extent practicable.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would result in adverse effects under NEPA and significant impacts under CEQA. However, the measures listed below would substantially reduce effects/impacts of the proposed project on jurisdictional waters.

- BIO-5** Concurrent with the initiation of construction, permanent impacts on waters of the United States shall be offset through replacement within a section of Diamond Bar Creek immediately downstream at a minimum ratio of 1:1, enhancement through the purchase of mitigation from an off-site mitigation bank, or participation in an in-lieu fee program.
- BIO-6** A Habitat Mitigation Monitoring Plan (HMMP) shall be prepared and approved by USACE and CDFG prior to the commencement of construction within jurisdictional waters. At a minimum, the HMMP shall meet the following criteria:
- The habitat shall be replaced and/or enhanced at a minimum ratio of 2:1,
 - The HMMP shall identify a success criterion of at least 80 percent for native riparian vegetation cover of replaced habitat, and
 - The HMMP shall include a 5-year establishment period for replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.

- BIO-7** To the extent feasible, construction activities shall occur outside the rainy season (October to May) to ensure that erosion does not occur and that sedimentation is not deposited within the storm drain system or any adjacent drainages. If construction occurs during the rainy season, appropriate erosion and stormwater control devices shall be in place and maintained throughout the rainy season prior to the onset of vegetation clearing and be maintained in good repair until the completion of project construction. Erosion and sediment control devices used, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.
- BIO-8** A Nationwide Permit shall be obtained through USACE prior to obtaining grading permits, pursuant to Section 404 of the Clean Water Act.
- BIO-9** A Streambed Alteration Notification shall be submitted, and authorization from CDFG shall be obtained prior to obtaining grading permits.
- BIO-10** A certification or waiver from the Region 4 RWQCB shall be obtained prior to the initiation of construction.

Measure BIO-16, listed in Section 2.3.5.4 has been adopted as a result of the Section 7 consultation and concurrence from the USFWS and entails creation of 0.62 acre of riparian and wetland vegetation. The habitat creation area is part of a larger 26-acre creation project that is addressed in consultation FWS-LA-10B0545-10I0723 for the Industry Business Park. The creation area will be permanently conserved and managed in accordance with the requirements of consultation FWS-LA-10B0545-10I0723. The habitat creation/restoration will be conducted in accordance with the Final Habitat Mitigation and Monitoring Program for the Industry Business Center Project, updated June 16, 2009.

2.3.2.5 Wetlands Only Practicable Finding

Executive Order 11990 mandates that an agency avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction of wetlands and direct or indirect support of new construction in wetlands wherever there is a practicable alternative. In accordance with Executive Order 11990, the preferred alternative (the Build Alternative) is proposed for adoption as the only practicable alternative, despite the potential harm to wetlands, as described in Section 2.3.2.3. While the No-Build Alternative would not affect wetlands in the project vicinity, it would not achieve the objective of the project, which is to improve geometric and operational deficiencies of the intersection of Grand Avenue with SR-60. The proposed construction of a direct on-ramp from southbound Grand Avenue to SR-60 would help to alleviate the traffic congestion and delay associated with the existing condition of having only a loop on-ramp for both northbound and southbound Grand Avenue traffic as it tries to access westbound SR-60. The inclusion of mitigation measures BIO-4 through BIO-9 would minimize harm to wetlands from the proposed action to the extent practicable.

To mitigate wetland impacts, Caltrans proposes to provide funding to the Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project to purchase mitigation from an off-site mitigation bank, or to participate in an in-lieu fee program.

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 wetlands that may result from such use.

2.3.3 Plant Species

The analysis of potential impacts of the proposed project on plant species is based on the NES-MI (Sage Environmental Group 2009) and the focused plant survey (Sage Environmental Group 2008) for Braunton's milk-vetch, which is listed under the federal ESA as endangered. Potential impacts on threatened and endangered (T&E) plant species are discussed in the Threatened and Endangered Species section.

2.3.3.1 Regulatory Setting

U.S. Fish and Wildlife Service (USFWS) and 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 T&E species; these are species that are formally listed or proposed for listing as endangered or threatened under the federal ESA and/or the California Endangered Species Act (CESA). The Threatened and Endangered Species section provides detailed information regarding these species.

This section discusses potential impacts of the Build Alternative on 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 federal ESA are at 16 USC, Section 1531, et seq. (refer also to 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 California Fish and Game Code, Sections 1900 to 1913, and CEQA, Sections 2100 to 21177.

2.3.3.2 Affected Environment

Much of the vegetation adjacent to SR-60 and Grand Avenue consists of ruderal and ornamental vegetation, including landscaping with coast live oak and California walnut. A segment of Diamond Bar Creek is located in the northwest quadrant of the BSA adjacent to the freeway. Sensitive resources associated with the Diamond Bar Creek riparian system include California walnut woodland, southern willow scrub, and several individual California sycamore, as described earlier in the Natural Communities section.

A literature review resulted in a list of 10 special-interest plant species that have the potential to occur in or within the vicinity of the BSA, as determined through federal, state, or CNPS data. The special-interest plant species identified as potentially occurring in the BSA are as follows:

- Braunton's milk-vetch (*Astragalus brauntonii*),
- 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*),

- Parry's spineflower (*Chorizanthe parryi* var. *parryi*),
- California satintail (*Imperata brevifolia*),
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*),
- white rabbit-tobacco (*Gnaphalium leucocephalum*), and
- San Bernardino aster (*Symphotrichum defoliatum*).

One of these 10 species, Braunton's milk-vetch (*Astragalus brauntonii*), is an endangered species under the federal ESA. A 2008 focused Braunton's milk-vetch plant survey resulted in negative findings because the species was not observed on site. Given the findings of this survey and other focused plant surveys performed during the 2003 flowering season (ICF Jones & Stokes 2003), all endangered or threatened plant species listed under the federal ESA or CESA are confirmed absent from the BSA. No further focused plant surveys are necessary for this project to address potential impacts on endangered or threatened plant species.

2.3.3.3 Environmental Consequences

Construction and Operational Impacts

No-Build Alternative

No adverse impacts on special-interest plant species would occur as a result of the No-Build Alternative.

Build Alternative

No adverse impacts on special-interest plant species would occur as a result of implementation of the Build Alternative.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would not result in adverse effects under NEPA or significant impacts under CEQA on special-interest plant species. No avoidance, minimization, or mitigation measures are required.

2.3.4 Animal Species

The analysis of potential impacts of the proposed project on animal species is based on the NES-MI (Sage Environmental Group 2009). Potential impacts on T&E animal species are discussed later in the Threatened and Endangered Species section.

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts on wildlife. USFWS, the National Marine Fisheries Service (NMFS), and 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 ESAs. Wildlife species listed or proposed for listing as threatened or endangered are discussed later in the Threatened and Endangered Species section. Other special-status animal species, including CDFG fully protected species and species of special concern as well as USFWS and NMFS candidate species, are discussed below.

Federal laws and regulations pertaining to wildlife include NEPA, the Migratory Bird Treaty Act (MBTA), and the Fish and Wildlife Coordination Act. State laws and regulations pertaining to wildlife include CEQA, and Sections 1601 to 1603 and Sections 4150 and 4152 of the California Fish and Game Code.

2.3.4.2 Affected Environment

A literature review identified 32 special-interest animal species with the potential to occur in or within the vicinity of the BSA for the proposed project:

- orange-throated whiptail (*Aspidoscelis hyperythra*),
- coastal western whiptail (*Aspidoscelis tigris stejnegeri*),
- coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillii*),
- northern red-diamond rattlesnake (*Crotalus ruber ruber*),
- Cooper's hawk (*Accipiter cooperii*) (nesting),
- southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*),
- grasshopper sparrow (*Ammodramus savannarum*),
- golden eagle (*Aquila chrysaetos*),
- short-eared owl (*Asio flammeus*),
- long-eared owl (*Asio otus*),
- burrowing owl (*Athene cunicularia*),
- ferruginous hawk (*Buteo regalis*),
- northern harrier (*Circus cyaneus*),
- black swift (*Cypseloides niger*),
- white-tailed kite (*Elanus leucurus*),
- merlin (*Falco columbarius*),
- yellow-breasted chat (*Icteria virens*),
- northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*),

- pallid bat (*Antrozous pallidus*),
- Townsend's big-eared bat (*Corynorhinus townsendii*),
- western mastiff bat (*Eumops perotis californicus*),
- hoary bat (*Lasiurus cinereus*),
- western yellow bat (*Lasiurus xanthinus*),
- Yuma myotis (*Myotis yumanensis*),
- tricolored blackbird (*Agelaius tricolor*),
- Vaux's swift (*Chaetura vauxi*),
- big free-tailed bat (*Nyctinomops macrotis*),
- sharp-shinned hawk (*Accipiter striatus*), and
- yellow warbler (*Dendroica petechia*).

The following sensitive species were confirmed present within the proposed project's BSA since 2007. All three species are protected under the MBTA.

Present within the BSA

- Cooper's hawk (*Accipiter cooperii*),
- sharp-shinned hawk (*Accipiter striatus*), and
- yellow warbler (*Dendroica petechia*).

2.3.4.3 Environmental Consequences

Construction and Operational Impacts

No-Build Alternative

No adverse impacts with respect to the animal species listed above would occur as a result of the No-Build Alternative because there would be no construction activities or changes to existing conditions in the vicinity of the project site.

Build Alternative

Within the BSA, direct impacts on yellow warbler are not anticipated because this species currently uses the site for wintering and foraging only. The Cooper's and sharp-shinned hawk appear to use the site for foraging. Raptor nesting habitat within the BSA is not ideal because of the lack of large-sized trees and/or structures.

The MBTA and California Fish and Game Code prohibit impacts that cause nest failure for most species of birds. Direct impacts on nesting birds could occur if an active nest is removed or if nesting birds are disturbed as a result of construction activities to the extent that they abandon the nest. Potential impacts on nesting birds resulting from the Build Alternative would be substantially adverse under NEPA and significant under CEQA.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would potentially result in adverse effects under NEPA and significant impacts under CEQA. However, the following measure would be implemented to protect nesting birds during project construction:

- BIO-11** Grubbing of vegetation within Diamond Bar Creek shall occur outside of the bird nesting season, defined by CDFG regulations as February 15 through September 1, to avoid potential impacts on nesting birds. However, work may occur during the nesting season if a preconstruction nest survey is conducted by a qualified biologist with a current USFWS 10A permit to conduct surveys for least Bell's vireo and California gnatcatcher. The survey shall be conducted within the proposed impact area and adjacent suitable habitat up to 500 feet outside the BSA. The survey shall consist of four site visits conducted at least 1 week apart. The final survey shall be conducted within 3 days of the start of construction to ensure that no impacts on nesting birds occur. Should nesting birds be present, no work shall be conducted within a minimum of 50 feet of that area until the young have fledged and are no longer affected by the project, as determined by the qualified biologist. The project biologist will confer daily by phone with the CFWO regarding the status of the vegetation clearing work and the numbers, locations, and sex of the vireos (if observed); observed vireo behavior (especially in relation to project activities); and presence of vireo nest-building activities, egg incubation activities, or brood-rearing activities.

2.3.5 Threatened and Endangered Species

The analysis of potential impacts of the proposed project on T&E species is based on the NES-MI (Sage Environmental Group 2009) and supporting focused surveys included therein as appendices. In 2007, as part of the early consultation process for the SR-57/SR-60 Confluence at Grand Avenue Project, USFWS recommended focused surveys for the southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*) within suitable habitat areas of the project study area (Medak pers. comm.). Following the USFWS recommendation, 2 years of protocol surveys were conducted (in 2007 and 2008). Based on the findings of the biological reconnaissance survey, a focused plant survey for Braunton's milk-vetch was conducted in 2008. The NES-MI, including supporting appendices, is on file and available for review at the Cities of Industry and Diamond Bar and Caltrans' District 7 offices.

As a result of the Section 7 consultation, concurrence on the level of affect from the project to threatened and endangered species was received from USFWS on March 9, 2011. The USFWS concurrence letter can be found in Appendix F of this document. Coordination with CDFG is being completed to ensure compliance with CESA.

2.3.5.1 Regulatory Setting

The primary federal law protecting T&E species is the federal ESA (16 USC, Section 1531, et seq.); refer also to 50 CFR, Part 402. The federal ESA and subsequent amendments provide for the conservation of T&E species and the ecosystems on which they depend. Under Section 7 of the federal ESA, federal agencies such as FHWA are required to consult with USFWS and NMFS 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 (BO) or an incidental take permit. Section 3 of the federal ESA defines take as actions to "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct."

California has enacted a similar law at the state level, CESA, California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. CDFG is the agency responsible for implementing CESA. Section 2081 of the California Fish and Game Code prohibits take of any species determined to be a T&E species. Take is defined in Section 86 of the California Fish and Game Code as actions to "...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. For projects requiring a BO under Section 7 of the federal ESA, CDFG may also authorize impacts on CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

2.3.5.2 Affected Environment

The literature review indicates that one plant and three animal species that are listed under the federal and/or state ESA as threatened or endangered have the potential to occur in the BSA. These T&E species are as follows:

- Braunton's milk-vetch (*Astragalus brauntonii*),
- southwestern willow flycatcher (*Empidonax traillii extimus*),
- least Bell's vireo (*Vireo bellii pusillus*), and
- California gnatcatcher (*Polioptila californica californica*).

No T&E animal or plant species were observed or otherwise detected in the BSA at the time of the 2007 and 2008 field surveys; however, least Bell's vireo and California gnatcatcher were observed adjacent to the BSA within the larger Diamond Bar Creek riparian corridor, as shown in Figure 2-11.

One pair of least Bell's vireo was observed in 2008 building a nest in nonnative black mustard (*Brassica nigra*) within the mixed riparian corridor west of the BSA. A single least Bell's vireo was observed in August 2009 also outside of the BSA. A small portion of the 10-acre known least Bell's vireo territory is located within the BSA.

The California gnatcatcher was observed during the 2007 least Bell's vireo surveys and again in February 2008 within the Diamond Bar Creek riparian corridor and adjacent coastal sage scrub habitat west of the BSA. Although California gnatcatcher generally does not forage in riparian areas, a dry winter in 2006/2007 may have reduced the amount of available prey within the coastal sage scrub habitat. The gnatcatchers may have been taking advantage of the proximity of the riparian area to secure a more abundant prey source. Protocol surveys were not conducted for the California gnatcatcher.

The 2008 focused Braunton's milk-vetch plant survey resulted in negative findings. As a result of Section 7 Informal Consultation, the USFWS issued a concurrence on the findings on March 9, 2011. The USFWS concurrence letter can be found in Appendix F of this document.

2.3.5.3 Environmental Consequences

Construction Impacts

No-Build Alternative

There would be no construction activity under the No-Build Alternative; therefore, there would be no construction impacts on threatened and endangered species.

Build Alternative

Adjacent to the BSA, short-term indirect effects (e.g., construction noise) may adversely affect nesting birds, including the least Bell's vireo and California gnatcatcher, particularly if construction and vegetation clearing begin after the onset of the nesting season. In instances of

nighttime construction, light barriers may be required to limit spillover during the nesting season. Avoidance, minimization, and/or mitigation measures require pre-construction nest surveys to include suitable habitat within 500 feet of the impact area. Implementation of the avoidance and minimization measures described below would ensure that no nests would be lost.

Operational Impacts

No-Build Alternative

Under the No-Build Alternative, there would be no changes to operations at the ramp or Grand Avenue; therefore, threatened and endangered species' existing conditions would not change.

Build Alternative

Adjacent to the BSA, long-term indirect effects, including noise and lighting impacts from on-ramp operation, are not expected to affect the adjacent Diamond Bar Creek riparian habitat area. The proposed retaining wall, up to 20 feet in height, would provide noise attenuation along the first 700 linear feet of the on-ramp. Along the westerly portion of the on-ramp, the project footprint is within 10 feet of the existing alignment; therefore, the increase in noise resulting from project implementation at this location would be negligible. Three new light poles are proposed for the area along the gore point of the on-ramp. The lights would be hooded and low-voltage units to limit spillover into adjacent areas; therefore, the increase in nighttime light and glare at the adjacent Diamond Bar Creek riparian habitat area would be negligible.

Permanent impacts that would overlap known least Bell's vireo territory would be limited to those related to the relocation of a portion of Old Brea Canyon Road to an area within a vacated power line right-of-way. Vegetation within this area is limited to ruderal upland species.

Approximately 0.89 acre of this upland area would be permanently affected. Temporary impacts within the 10-acre known least Bell's vireo territory would be limited to those related to the installation of one ungrouted riprap energy dissipater at the outlet of the Old Brea Canyon Road box culvert extension. The remainder of the known least Bell's vireo territory located within the BSA would be avoided.

2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative could result in adverse effects under NEPA and significant impacts under CEQA. However, the measures listed below are proposed to minimize indirect effects/impacts on threatened and endangered species.

- BIO-12** Should construction within and/or adjacent to the Diamond Bar Creek riparian corridor occur during the bird nesting season, generally defined as March 15 to September 15, the following noise attenuation measures shall be implemented:
- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers; and

- Temporary noise barriers shall be installed along the construction footprint boundary adjacent to Diamond Bar Creek. The noise barriers shall be a minimum of 15 feet in height.
- All pile driving for the project that will occur near habitats that support vireos will be conducted between September 16 and March 14 to avoid the vireo breeding season (or sooner than September 16 if the project biologist demonstrates to the satisfaction of the CFWO that all nesting is complete) and minimize construction noise impacts on nesting vireos.

BIO-13 Should nighttime construction within and/or adjacent to the Diamond Bar Creek riparian corridor occur during the bird nesting season, generally defined as March 15 to September 15, the following nighttime lighting attenuation measures shall be implemented:

- Temporary nighttime lighting shall be hooded and directed away from the adjacent riparian corridor, and
- Temporary nighttime lighting barriers shall be installed along the construction footprint boundary adjacent to Diamond Bar Creek. The lighting barriers shall be a minimum of 15 feet in height.

BIO-14 New permanent lighting installed along the on-ramp shall be hooded and low voltage to limit light spillover into the adjacent Diamond Bar Creek riparian habitat area.

BIO-15 Informal consultation with USFWS under Section 7 of the federal Endangered Species Act was conducted to confirm that the measures proposed herein shall avoid and minimize potential indirect effects on threatened and endangered species. As a result of this consultation, the measures dealing with biological resources have been revised, as shown in this Mitigated Negative Declaration/Finding of No Significant Impact and in Appendix D, the Environmental Commitments Record. The new measures that have been added are also a result of this consultation.

BIO-16 Caltrans will offset permanent impacts on 0.31 acre of vireo habitat (including southern willow scrub) through creation of 0.62 acre of riparian and wetland vegetation. The habitat creation area is part of a larger 26-acre creation project that is addressed in consultation FWS-LA-10B0545-10I0723 for the Industry Business Park. The creation area will be permanently conserved and managed in accordance with the requirements of consultation FWS-LA-10B0545-10I0723. The habitat creation/restoration will be conducted in accordance with the Final Habitat Mitigation and Monitoring Program for the Industry Business Center Project, updated June 16, 2009. Prior to affecting vireo habitat within Diamond Bar Creek, Caltrans will submit a map of the specific habitat creation area that will be completed as part of the Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project for review and approval to the CFWO. Documentation of the initiation of habitat creation activities for the project will be provided to the CFWO on or prior to December 1, 2013.

- BIO-17** A biologist approved by the CFWO (“project biologist”) will be on site during a) initial clearing and grubbing and b) weekly during project construction within 500 feet of off-site vireo habitat to ensure compliance with all conservation measures. The project biologist will be familiar with the habitats, plants, and wildlife in the project area to ensure that issues related to biological resources are appropriately and lawfully managed. Caltrans will submit the biologist’s name, address, telephone number, and work schedule to the CFWO prior to initiating project impacts. The biologist will be provided with a copy of this consultation. The biologist will perform the following duties:
- a. Oversee installation of and inspect the construction fencing and erosion control measures within or upslope of adjacent native habitat areas a minimum of once per week to ensure that any breaks in the fence or erosion control measures are repaired immediately;
 - b. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust;
 - c. Train all contractors and construction personnel on the biological resources associated with the projects and ensure that training is implemented by construction personnel. At a minimum, training will include 1) the purpose for resource protection; 2) a description of the sensitive resources and their habitats; 3) the conservation measures that should be implemented during project construction to conserve the sensitive resources, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); 4) environmentally responsible construction practices; 5) the protocol to resolve conflicts that may arise at any time during the construction process; and 6) the general provisions of the act, the need to adhere to the provisions of the act, and the penalties associated with violating the act;
 - d. Halt work, if necessary, and confer with the CFWO to ensure proper implementation of species and habitat protection measures. The project biologist will report any violation to the CFWO within 24 hours of its occurrence;
 - e. Submit a report (including photographs of impact areas) to Caltrans and the CFWO following clearing of vireo habitat. The report will document that authorized impacts were not exceeded and general compliance with all conditions. The report will specify numbers, locations, and sex of vireos (if observed), observed vireo behavior (especially in relation to project activities), and remedial measures employed to avoid and minimize impacts on vireos. Raw field notes should be available upon request by the CFWO; and
 - f. Submit a final report to the CFWO within 120 days of project completion that includes photographs of habitat areas that were to be avoided and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved. As-built construction drawings, with an overlay of habitat that was affected and avoided, will be provided as well once they have been completed.

2.3.6 Invasive Species

The analysis of potential impacts of the proposed project related to invasive species is based on the NES-MI (Sage Environmental Group 2009).

2.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112, requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA 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.

2.3.6.2 Affected Environment

As discussed earlier in the Natural Communities section, the dominant habitat types in the BSA consist of nonnative ruderal vegetation and, in developed areas, ornamental vegetation (developed/ornamental).

During the 2008 reconnaissance surveys, nine exotic plants in the California Invasive Plant Council’s (Cal-IPC’s) Invasive Plant Inventory were identified in the BSA. Each plant in the inventory was given an overall rating of high, moderate, limited, or unknown. 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 and the applicable Cal-IPC rating are provided in Table 2-30.

Table 2-30. Invasive Plants Located within the BSA

Common Name	Scientific Name	Cal-IPC Rating
Wild oat	<i>Avena</i> sp.	Moderate
Ripgut grass	<i>Bromus diandrus</i>	Moderate
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate
Tocalote	<i>Centaurea melitensis</i>	Moderate
Fennel	<i>Foeniculum vulgare</i>	High
Tree tobacco	<i>Nicotina glauca</i>	Moderate
Castor bean	<i>Ricinis communis</i>	Limited
Milk thistle	<i>Silybum marianum</i>	Limited
Mexican fan palm	<i>Washingtonia robusta</i>	Moderate

Source: Cal-IPC Invasive Plant Inventory. Available: <www.cal-ipc.org/ip/inventory/weedlist.php>. Accessed: 2009; Sage Environmental Group, 2009.

2.3.6.3 Environmental Consequences

Construction Impacts

No-Build Alternative

Under the No-Build Alternative, there would be no construction activities and, thus, no construction impacts on invasive species.

Build Alternative

Construction of the Build Alternative has the potential to spread invasive species through 1) contaminated equipment as it enters and exits the site, 2) the inclusion of invasive species in seed mixtures and mulch, and 3) the improper removal and disposal of invasive species so that seeds are spread along the highway. These impacts would be substantially adverse under NEPA and significant under CEQA.

Operational Impacts

No-Build Alternative

The No-Build Alternative would not affect existing conditions; no impacts would occur with respect to invasive species.

Build-Alternative

The Build Alternative's operational changes at the intersection and ramps would not result in impacts on invasive species in the vicinity of the project site.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would potentially result in adverse effects under NEPA and significant impacts under CEQA. The measures listed below would avoid, minimize, or mitigate potential project effects/impacts related to invasive species.

- BIO-18** Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential for spreading noxious weeds (before arriving at the site and before leaving).
- BIO-19** Trucks with loads carrying vegetation shall be covered, and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.
- BIO-20** Caltrans will ensure that project landscaping does not include exotic plant species listed on the Cal-IPC Invasive Plant Inventory list. A copy of the complete list can be obtained from Cal-IPC's web site, at <http://www.cal-ipc.org>.

- BIO-21** To create a habitat buffer and potential foraging area for vireos in the adjacent habitat, project cut slopes and fill slopes adjacent to Diamond Bar Creek will be revegetated with native upland habitats with similar composition to those within the project study area. The revegetated areas will have temporary irrigation and will be planted with native container plants and seeds. There will be at least 3 years of plant establishment/maintenance on these slopes to control invasive weeds.
- BIO-22** Duff from areas with coastal sage scrub and chaparral will be saved to aid in revegetating slopes with native species.
- BIO-23** Rare plants will be salvaged where practicable for use in revegetation efforts.
- BIO-24** Landscaping should not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas, and water runoff from landscaped areas should be directed away from adjacent native habitats and contained and/or treated within the development footprint.
- BIO-25** Caltrans will submit a draft list of species to be included in the landscaping to the CFWO for approval. Caltrans will submit to the CFWO the final list of species to be included in the landscaping within 30 days of receiving approval of the draft list of species.

2.4 Cumulative Impacts

2.4.1 Regulatory Setting

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

Cumulative impacts on 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 the displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and the introduction or promotion of predators. They can also contribute to the potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

State 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 can be found in Section 15355 of the State CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 CFR, Section 1508.7, of the Council on Environmental Quality regulations.

The proposed project would have no effect related to coastal zones, wild and scenic rivers, parks/recreational facilities, growth, farmlands/timberlands, noise, or environmental justice. Therefore, the project would not contribute either directly or indirectly to a cumulatively considerable impact in these resource areas. Therefore, the potential for the proposed project to result in cumulative impacts that would be considered significant under CEQA or adverse under NEPA in the aforementioned areas is low, and the proposed project does not have the potential to result in a cumulative impact that would affect the health or sustainability of any of these resources.

The proposed project would have project-level direct or indirect effects on land use, community character and cohesion, relocations and real property acquisition, utilities/emergency services, traffic/transportation/pedestrian and bicycle facilities, visual/aesthetic resources, cultural resources, hydrology/floodplains, water quality/stormwater runoff, geology/soils/seismic/topography, paleontology, hazardous waste/materials, air quality, natural communities, wetlands/other waters, plant species, animal species, threatened/endangered species, and invasive species. The potential for cumulatively considerable impacts in these resource areas is discussed below.

The cumulative impact analyses included in this section considered projects that are currently proposed, approved, or under construction within the City of Industry and City of Diamond Bar as of December 2009. A list of projects included in the analysis is presented in Table 2-1.

2.4.2 Land Use/Community Impacts

2.4.2.1 Affected Environment

Research Study Area. The geographic research study area (RSA) boundary used in the assessment of cumulative impacts involving land use and/or community resources is defined at various levels, from regional to local. For land use and planning, the appropriate RSA is the geographical extent of the City of Diamond Bar and City of Industry. For community impacts, the appropriate RSA is identified as the area within 0.5 mile of the project.

Existing Conditions within RSA. The proposed project would occur within the City of Diamond Bar and City of Industry. The existing land uses adjacent to the project site include industrially designated vacant land to the north, within the City of Industry, and Diamond Bar Golf Course to the south, within the City of Diamond Bar. Moderate- and high-density commercial and industrial uses, low- and medium-density residential uses, and supporting infrastructure are present in the surrounding area. The IBC originally approved in 2004 for up to 4.8 million square feet of industrial, professional, and commercial uses was proposed to be located on approximately 592 acres of vacant land north of the project site. The revised IBC Plan of Development, approved in 2009, includes a 75,000-seat football stadium and support uses, including retail space, team offices, concession areas, training facilities, practice fields, a sports medical center and clinic, theaters, restaurant/banquet facilities, and office uses.

2.4.2.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. The proposed project would not result in any change in land use or zoning and would comply with the pertinent general plan policies. The proposed project would involve improvements to an existing transportation facility. The proposed project would affect access to two commercial businesses, a Burger King restaurant and an abandoned auto dealership on two parcels between Grand Avenue and Old Brea Canyon Road. However, the access to these businesses would be reconfigured as a part of the proposed project. No displacements would occur, and relocations would not be necessary. The proposed improvements are consistent with the project description in the 2011 RTIP and the 2011 RTP. The proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed project (including a general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the project is consistent with local plans and policies and would not result in any adverse impacts, either individually or cumulatively, on land use and planning.

Current and Reasonably Foreseeable Projects within RSA. Table 2-1 provides a list of the five related projects within the City of Industry and City of Diamond Bar. One of the projects is the IBC, with the NFL stadium and associated uses. The four other related projects are commercial projects. Except for the IBC and the NFL stadium, all of the other projects are under construction or construction has been completed.

Cumulative Impact Potential. The potential for impacts on land use and planning and the community at large as a result of the proposed project is low. Although the other approved local projects (related projects) would result in changes in land use, it is expected that they would comply with environmental regulations and other local plans and policies and would likely be

consistent with any land use plans. Except for the IBC and NFL stadium project, construction of the other projects would be completed prior to construction of the proposed on-ramp project. Thus, the proposed project would not result in any cumulatively considerable land use and planning or community impacts.

2.4.2.3 Avoidance, Minimization, and/or Mitigation Measures

No substantial adverse cumulative impacts related to land use and planning or the community are anticipated as a result of the project, and no avoidance, minimization, and/or mitigation measures are proposed.

2.4.3 Growth

2.4.3.1 Affected Environment

Research Study Area. The geographic RSA boundary used in the assessment of cumulative impacts involving growth is defined as the extent of regional plans, such as the RTIP and RTP. SCAG is the Metropolitan Planning Organization (MPO) in the region for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial and is responsible for forecasting population trends and growth scenarios in the region. The area covered by the related projects identified in Table 2-1 is included in the regional plan area, which has been identified as the RSA for growth.

Existing Conditions within RSA. The SCAG region is the second most populous metropolitan region in the nation. The U.S. census reported the 2000 population of the SCAG region to be 16,516,006. More than 6 percent of the nation's population lives in the SCAG region, and for more than half a century, the region has been home to half the population of California (SCAG 2008). The SCAG region gained almost 1.9 million people between 1990 and 2000, and the California Department of Finance estimates that the region has added yet another 2.2 million since 2000.

2.4.3.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. The proposed project would improve an existing transportation facility and is required to correct existing deficient traffic conditions at the Grand Avenue interchange. SR-60, SR-57, and Grand Avenue are existing roadways, and the right-of-way has been reserved for the interchange improvements. The proposed improvements are consistent with the project description in the current 2011 RTIP and the 2011 RTP. The project and cumulative development are accounted for and forecast in the regional plans. The proposed project would not have a significant impact with respect to growth inducement. The proposed project would not result in any substantial direct or indirect/secondary impacts on growth. Therefore, the proposed project is neither intended nor expected to induce any substantial change in the location, distribution, or rate of population and housing growth.

Current and Reasonably Foreseeable Projects within RSA. In the current RTP and RTIP, there are many roadway improvement projects proposed in the region that would decrease travel times and reduce congestion on existing roadways, which, in turn, could result in a beneficial impact on air quality if congestion is reduced. The regional plans have analyzed the cumulative impacts of all projects and have identified feasible avoidance, minimization, and mitigation measures. SCAG has forecast foreseeable growth in the region until 2035 and analyzed impacts of population increases.

Cumulative Impact Potential. The potential for impacts related to growth inducement as a result of the proposed project is low because the purpose of the proposed project is to alleviate the existing deficient conditions. In addition, approved local projects (related projects) in the area do not include any residential projects. As such, a substantial shift in population growth or distribution would not occur, and access would not be provided to areas that were previously inaccessible. As stated in the program EIR for the 2008 RTP, in specific areas of the region, the 2008 RTP would likely induce growth by providing new and/or improved access (for example

the High Desert Corridor); however, overall, the 2008 RTP would accommodate and facilitate growth in the region (SCAG 2008). Therefore, it is expected that regional plans have accounted for growth in the region and strategies are in place to accommodate growth. As such, the proposed project would not contribute to adverse cumulative growth impacts in the region.

2.4.3.3 Avoidance, Minimization, and/or Mitigation Measures

No adverse cumulative impacts involving growth as a result of the project are anticipated, and no avoidance, minimization, and/or mitigation measures are proposed.

2.4.4 Utilities/Emergency Services

2.4.4.1 Affected Environment

Research Study Area. The RSA for utilities/emergency services is the area covered by the project and related projects. Within the project area, if construction activities occur concurrently, there is the potential for detours, which would affect emergency services and disrupt utility services.

Existing Conditions within RSA. The RSA is highly urbanized and well served by utilities and emergency services. All areas of the RSA are equally served by emergency service providers, such as fire and police. The service ratios for police and fire services are acceptable. No issues related to lack of utilities or emergency services are known.

2.4.4.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. During construction of the project, SR-57 and SR-60 would remain open, thereby minimizing impacts on emergency response routes. The project, in the long term, would benefit emergency services by reducing congestion and improving travel times.

With respect to utilities, construction activities, such as the relocation of electric poles and subsurface electric and sewer lines adjacent to the new ramp entrance and along Old Brea Canyon Road, may result in service disruptions within the RSA. However, construction activities would be coordinated with utility providers so that customers in the area to be affected by service disruptions can be notified in advance. Construction effects would be minor and temporary. In the long term, the proposed project would not result in any adverse effects pertaining to utilities.

Current and Reasonably Foreseeable Projects within RSA. Table 2-1 provides a list of the approved related projects within the City of Industry and the City of Diamond Bar. Of the five projects, only the IBC project, with NFL stadium, is adjacent to the project site.

Cumulative Impact Potential. Construction activities for one or more of the related projects in the area could result in temporary, localized, site-specific disruptions, including partial and/or complete street and lane closures and detours. Similarly, simultaneous construction activities for the proposed project and related projects could result in temporary utility disruptions. However, efforts would be made to coordinate with affected utility providers as well as emergency services providers and notify affected residents 2 weeks in advance of any service disruption. Caltrans, as the CEQA lead agency for the proposed project, would ensure appropriate coordination of the project, for example, with the City of Industry's work on the IBC project, to avoid disruptions that would affect emergency and public utility services. Therefore, the cumulative effects of construction, should they occur, would be minor and temporary and minimized with appropriate coordination by Caltrans.

2.4.4.3 Avoidance, Minimization, and/or Mitigation Measures

No adverse cumulative impacts on utilities/emergency services are anticipated as a result of the proposed project; no avoidance, minimization, and/or mitigation measures are proposed.

2.4.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.4.5.1 Affected Environment

Research Study Area. The SCAG region covered under the RTP and RTIP is the appropriate RSA for evaluating cumulative impacts at a regional level. For localized effects, the area covered by the traffic study report, including the two intersections analyzed for traffic impacts, is considered the RSA.

Existing Conditions within RSA. At the regional level, the regional transportation system is currently operating at capacity during peak periods. The highway system shows substantial freeway congestion in the morning and evening peak periods, with random episodes of incident-related (i.e., accident) congestion throughout the day. At the local level, an examination of the traffic data indicates that both study area intersections are currently operating acceptably at LOS D or better in the AM peak hour and LOS C or better in the PM peak hour. However, the traffic study indicates that southbound Grand Avenue tends to be more congested, with traffic moving at slower speeds than traffic on either northbound Grand Avenue or the SR-60 on- and off-ramps.

2.4.5.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. Once constructed, the project would result in a beneficial impact on regional and local traffic conditions and access. The project would not result in a deterioration of levels of service at any intersections or roadway segments. With completion of the proposed project, the two study intersections would be expected to operate acceptably in both the AM and PM peak hours in 2013. This can be considered an improvement over existing conditions. Without the project, projected LOS would be between D and F in 2013. However, by 2035, the westbound ramp is projected to operate at LOS F with construction of the proposed improvements alone. Similarly, the eastbound ramp is projected to operate at LOS F in 2035 with construction of the proposed improvements alone.

Current and Reasonably Foreseeable Projects within RSA. Long-term operation of the proposed project, in combination with the current and reasonably foreseeable future projects shown in Table 2-1, would result in significant cumulative impacts on the road transportation network by degrading LOS to unacceptable levels at both of the analyzed intersections. However, when the planned improvements, as part of the SR-57/SR-60 Confluence Project, are considered, the westbound ramp's LOS is expected to improve to D or better, and the eastbound ramp is expected to operate at LOS B. To analyze the cumulative impacts, transportation modeling was used to predict future LOS at key intersections with implementation of the proposed project in conjunction with the projected future projects in Table 2-1 as well as other sources of local and regional growth. Given this scenario, the growth rate and the forecast traffic volumes for 2013, 2015 (the year construction would be completed), and 2035 (the design year for this project) were calculated.

Cumulative Impact Potential. At the regional level, the proposed project is included in the 2008 RTP and 2011 RTIP. Thus, cumulative impacts from the proposed project, at the regional level, have been accounted for in the program environmental impact report for the RTP. The proposed project would not result in cumulative impacts at the regional level.

At the local level, with construction of the proposed project, operations at the westbound ramp intersection would consistently improve through 2015; however, 2035 traffic volumes would require the construction of future improvements to maintain an acceptable LOS. Similarly, the eastbound ramp intersection would consistently improve through 2013 with construction of the proposed project, but construction of the SR-57/SR-60 Confluence Project would be required to achieve the greatest improvement in LOS.

Mainline speeds are expected to improve substantially with construction of future improvements, which shall be analyzed in future environmental documents. The 2035 VMT and speed analysis for future improvements indicates that, while VMT would not be reduced when compared with proposed project conditions, speeds would improve significantly with implementation of future improvements. Thus, adverse cumulative impacts on traffic are not anticipated.

2.4.5.3 Avoidance, Minimization, and/or Mitigation Measures

No adverse cumulative impacts on traffic and transportation/pedestrian and bicycle facilities are anticipated as a result of the project, and no avoidance, minimization, and/or mitigation measures are proposed for operational cumulative impacts.

2.4.6 Visual/Aesthetics

2.4.6.1 Affected Environment

Research Study Area. The RSA for visual resources is the viewshed of the project site. In general, the viewshed extends to all areas that have a view of a project site. It identifies views that a proposed project could affect.

Existing Conditions within RSA. The project vicinity is referred to regionally as the eastern margin of the San Gabriel Valley. It is an area that consists of valleys and gently rolling hills, which are considered to be part of the Puente Hills. Vacant lands and industrial development are located north of the project site. Diamond Bar Golf Course and the semi-urbanized City of Diamond Bar are located to the south. Vegetation in the study area is predominantly a mix of nonnative ruderal landscaping, associated with the right-of-way, and riparian vegetation, associated with Diamond Bar Creek. The sensitive viewers groups for the proposed project would include commuters, commercial business patrons, and golf course users.

2.4.6.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. Construction of the proposed on-ramp and a 20-foot-high retaining wall could result in visual impacts in the viewshed. However, implementation of measures V-1 to V-3 would minimize the adverse effects.

Current and Reasonably Foreseeable Projects within RSA. Half of the related projects identified in Table 2-1 fall within the RSA, and some could be visible to sensitive viewer groups. During the construction phase, the presence of construction equipment, workers, and trucks could result in adverse effects; however, these impacts would be temporary and short in duration. Development of the IBC project could result in an increase in the level of ambient light at night, especially during nighttime events, as could the lights that have been proposed for the on-ramp. However, the on-ramp lights would be shielded and directed downward, toward the roadway. According to the supplemental IBC EIR, the project's design features would include lighting, which would be directed downward and shielded to ensure that nearby sensitive receptors would not be affected by adverse lighting impacts. Furthermore, none of the sensitive receptors who would be affected by the proposed project's changes to the level of ambient light is closer than 2,000 feet from the project site.

Cumulative Impact Potential. The Build Alternative would not introduce new structural elements that would block existing views of high visual quality. Any changes to the views in this area would be generally consistent with existing views of developed areas surrounding the project site. In addition, the lights that have been proposed for the on-ramp could result in a minimal increase in the level of ambient light, which would not be considered significant or substantially adverse. Therefore, the potential for the proposed project to contribute to cumulative adverse impacts related to visual resources is considered low.

2.4.6.3 Avoidance, Minimization, and/or Mitigation Measures

No substantially adverse cumulative impacts on visual resources are anticipated as a result of the project, and no avoidance, minimization, and/or mitigation measures are proposed.

2.4.7 Cultural Resources

2.4.7.1 Affected Environment

Research Study Area. The APE was established as the Caltrans right-of-way of SR-60, all TCEs, and staging areas.

Existing Conditions within RSA. A historic property survey report and an archaeological survey report were completed in September 2009 for the proposed project. These reports were based in part on a records search conducted at the South Central Coastal Information Center at California State University, Fullerton. One prehistoric archaeological site was identified during the record search as being directly adjacent to the project APE, in the vicinity of Diamond Bar Creek. A pedestrian field survey of the APE was also conducted by PQS members in May 2009. No cultural resources were observed within the APE at the time of the field survey.

2.4.7.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. After considering the cultural resources evaluations conducted for the proposed project, the HPSR concluded that no properties are present within the project's APE that require evaluation. Cultural studies have determined that a Finding of No Adverse Effect with Standard Conditions is appropriate for the proposed project.

Current and Reasonably Foreseeable Projects within RSA. Only the IBC project, located on the north side of the project site, falls within the APE. In addition, only one historic archaeological resource was identified, from past reports, near the APE. It is not expected that the related projects would affect this resource.

Cumulative Impact Potential. The proposed project would not result in an adverse impact on cultural resources within the APE. Therefore, the potential for a cumulatively considerable impact is low. However, construction activities associated with the proposed project and related projects could unearth unanticipated cultural resources and result in an adverse cumulative impact. Implementation of minimization measure CR-1 and mitigation measure CR-2 would ensure that any cumulative impacts, should they occur, would be minimized. Related projects would be likely to implement similar measures to minimize impacts on cultural resources. Thus, cumulative impacts from the proposed project would not be substantially adverse.

2.4.7.3 Avoidance, Minimization, and/or Mitigation Measures

No adverse cumulative impacts on cultural resources are anticipated as a result of the project, and no avoidance, minimization, and/or mitigation measures are proposed.

2.4.8 Hydrology, Floodplain, Water Quality, and Stormwater Runoff

2.4.8.1 Affected Environment

Research Study Area. The proposed project is located within the San Gabriel River Watershed, which drains into Diamond Bar Creek and flows into Reach 1 of San Jose Creek approximately 2.7 miles downstream. The creek then flows into the Upper San Gabriel River approximately 10.2 miles from Diamond Bar Creek. The San Gabriel River flows through an engineered channel and a natural channel, the San Gabriel Estuary, San Pedro Bay, and the Los Angeles/Long Beach Harbor, finally emptying into the Pacific Ocean and draining approximately 682 square miles of eastern Los Angeles County. An appropriate RSA for hydrology, floodplains, water quality, and stormwater runoff has been identified as the portion of the watershed that encompasses the project limits, from the SR-60 right-of-way to the farthest extent of any downstream flows.

Existing Conditions within RSA. Diamond Bar Creek is not impaired according to the 2006 CWA Section 303(d) list of water body impairments. However, the water bodies that Diamond Bar Creek is tributary to drain into the San Gabriel River Watershed. Portions of the San Gabriel River Watershed are on the 2006 CWA Section 303(d) list of impaired water bodies being addressed by a TMDL. Table 2-19 of this document lists the water bodies to which the project drains, the 303(d) list constituents, and the TMDL constituents. TMDLs, or limits on the amounts of pollutants that can be discharged to Diamond Bar Creek, have not been established. The downstream water bodies, from Diamond Bar Creek to the Pacific Ocean, are 303(d) listed, and the San Gabriel River has a TMDL for metals.

According to the FIRM for the area, the proposed project is located in Zone X, or outside the 100-year floodplain, which is defined as an area with a 1 percent annual chance of flooding in 100 years (Federal Emergency Management Agency 2009).

2.4.8.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. During construction, the project would result in 2.5 acres of disturbed soil area (DSA). Disturbed soil can lead to erosion and sedimentation in waterways. The project would also increase the amount of impervious surfaces by 1.38 acres, which would increase runoff. Although this is a relatively small area when compared with the size of the watershed, local hydrology would be affected. BMPs, including the use of biofiltration swales, would be implemented to ensure that hydrology is not affected by sedimentation and/or velocity changes. Standard Caltrans BMPs, as listed in the Statewide Stormwater Quality Practice Guidelines (California Department of Transportation 2003) and discussed under Section 2.2.1.4 and Section 2.2.2.4 of this document, would be included to reduce and avoid water quality impacts. The BMPs required under the SWPPP would be implemented to prevent soil erosion and the discharge of other construction-related pollutants that could contaminate nearby water resources.

By incorporating accepted engineering practices and BMPs, impacts on the quality of surface or groundwaters during construction or operation would be minimized.

Current and Reasonably Foreseeable Projects within RSA. The Los Angeles RWQCB has adopted a water quality control plan for the protection of water quality. The regional inland surface water quality objectives contained in the Basin Plan pertain to ammonia; bacteria; coliform; bioaccumulation; biochemical oxygen demand; biostimulatory substances; chemical constituents; chlorine; total residuals; color; exotic vegetation; floating material; methylene blue active substances; mineral quality; nitrogen (nitrate, nitrite); oil and grease; dissolved oxygen; pesticides; pH; polychlorinated biphenyls; radioactive substances; solid, suspended, or settleable materials; taste and odor; temperature; toxicity; and turbidity.

Basin plans provide the technical basis for determining waste discharge requirements (WDRs), taking enforcement actions, and evaluating clean water grant proposals. Basin plans are updated and reviewed every three years in accordance with Article 3 of the Porter-Cologne Act and CWA Section 303(c). NPDES permits to control pollution issued under CWA Section 402 must implement requirements of the applicable regional basin plans. It is assumed that all construction projects within the basin will comply with the necessary permits and appropriate measures and thereby not result in adverse impacts or significant impacts.

Cumulative Impact Potential. Substantial amounts of stormwater runoff from areas within the project limits are currently untreated. The proposed project would include structural treatment-control BMPs to target anticipated pollutants in stormwater. These on-site improvements would improve regional water quality. In addition, other local projects, including the Lemon Street project and the NFL stadium, would include mitigation to ensure that water quality would not be adversely affected by stormwater runoff or other flows. Related project mitigation measures as well as proposed project treatment measures would minimize the potential for adverse cumulative impacts on water quality.

2.4.8.3 Avoidance, Minimization, and/or Mitigation Measures

No cumulative impacts are anticipated, and no further avoidance, minimization, and/or mitigation measures are proposed.

2.4.9 Geology/Soils/Seismicity/Topography

2.4.9.1 Affected Environment

Research Study Area. The RSA for geology and soils includes the greater Los Angeles area. Although, for seismicity, the entire fault zone is the RSA.

Existing Conditions within RSA. The project site is located near the boundary of the Peninsular Ranges and Transverse Ranges geomorphic provinces of Southern California. It is located within the Puente Hills and possesses structural characteristics of both provinces. The project site is located along the eastern margin of the San Gabriel River Valley in the Puente Hills, adjacent to the San Jose Creek alluvial valley. The hills that make up the project site are underlain by a succession of Miocene-age sedimentary rocks that are assigned to the Puente formation (English, 1926; Woodford, et al., 1944; Durham and Yerkes, 1964). Large debris aprons or alluvial fans have developed at the base of these hills, and thick deposits of colluvium have accumulated in drainage swales and at the toes of natural slopes. Shallow landslides are abundant on the low hills northwest of the IBC site, along the floodplain of San Jose Creek. The adjacent valley is underlain by alluvial and floodplain sediments that have eroded from the nearby hills and been deposited by San Jose Creek. Artificial fill is also present, primarily as fill embankments along Grand Avenue.

The project site is not located within an earthquake fault zone. No faults are known to exist at the site, and no faults are mapped as crossing the site.

Borings drilled by Leighton in 2002 for the IBC project site (south of Grand Avenue) indicate that perched groundwater is at an elevation of approximately 600 feet above mean sea level in bedrock layers. However, locally, the depth is variable because of perched water in landslide deposits. The water level in the alluvium along the western site boundary near Diamond Bar Creek ranges from 20 to 25 feet below the ground surface. According to the log of test borings for the existing Grand Avenue overcrossing, groundwater was encountered at approximately 5 to 20 feet below the existing grades; therefore, relatively shallow groundwater is expected along the site for the proposed retaining wall.

2.4.9.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. The area within the project site is underlain by alluvium and could have high groundwater levels because of the proximity of this area to the Diamond Bar Creek riverbed. Additionally, the project site is situated in an area characterized by low hills and moderately steep slopes with previous landslides. Thus, the project could result in significant liquefaction, lateral spreading, ground shaking, and landslide impacts. The project would be designed pursuant to Caltrans seismic design criteria and other applicable guidelines. Also, measures GEO-1 to GEO-14 would ensure that adverse effects from the project would be minimized, thereby resulting in no substantial adverse or significant effect related to geology/soils/seismicity/topography.

Current and Reasonably Foreseeable Projects within RSA. For any project requiring a permit from a local agency, compliance with the Uniform Building Code, as it pertains to health and safety, would be required. Therefore, it is expected that related projects would be

constructed to the applicable Uniform Building Code and would not expose people or structures to significant geologic hazards or increase the risk of loss, injury, or death substantially.

Cumulative Impact Potential. As a result of compliance with the measures, as well as building and structural codes, the proposed project and related projects would not result in an adverse impact related to geology/soils/seismicity/topography and would not contribute to any cumulative impacts in these areas.

2.4.9.3 Avoidance, Minimization, and/or Mitigation Measures

No adverse cumulative impacts involving geology, soils, seismicity, and/or topography are anticipated as a result of the project, and no avoidance, minimization, and/or mitigation measures are proposed.

2.4.10 Paleontology

2.4.10.1 Affected Environment

Research Study Area. The RSA for paleontology is an area that encompasses a number of identified fossil sites in upland geological deposits, roughly an area within 8 miles of the project site.

Existing Conditions within RSA. A paleontological records search was conducted at the Vertebrate Paleontology Section of the LACM. Results of the record search indicate that the project area consists of younger soil deposits, which generally do not yield fossil remains. No fossil remains have been reported within the project area (McLeod 2009).

2.4.10.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. Surface grading or shallow excavation is unlikely to encounter any significant vertebrate fossils. However, deeper excavations or excavations into bedrock may uncover significant fossil vertebrate remains. Disturbance of significant fossil remains would be a substantial adverse effect under NEPA and significant impact under CEQA.

Current and Reasonably Foreseeable Projects within RSA. Although other projects proposed within the RSA may have the potential to affect paleontological resources, it is expected that they would undergo environmental review and also follow local regulations to minimize effects on paleontological resources.

Cumulative Impact Potential. Construction activities associated with the proposed project could contribute to a progressive loss of paleontological resources and result in an adverse cumulative impact. However, implementation of measure PAL-1 would ensure that the proposed project's contribution to any cumulative impacts, should they occur, would be minimized. Other projects within the area, which would encompass all the identified fossil sites close to the project area, would likely implement similar measures to minimize impacts on paleontological resources.

2.4.10.3 Avoidance, Minimization, and/or Mitigation Measures

Substantial adverse cumulative impacts on paleontological resources would not occur. Furthermore, measure PAL-1 would minimize the potential for impacts on paleontological resources.

2.4.11 Hazardous Waste/Materials

2.4.11.1 Affected Environment

Research Study Area. The RSA for hazardous waste/materials is the “subject property” area, as defined in the ISA. The subject property includes parcels that may require partial or full right-of-way acquisitions and some that may require temporary construction easements in addition to the right-of-way within the project extents.

Existing Conditions within RSA. An ISA for the project was conducted and addressed in a memorandum dated January 12, 2009.

Potential hazardous wastes for the proposed alternative are as follows.

- Aerially Deposited Lead
- Existing Yellow Traffic Stripe and Pavement Markings

These potential hazardous wastes are considered low to medium risk issues.

A site investigation was prepared for the HOV Direct Connector Project on Route 60 and 57. The area surveyed included the unpaved soil within the Caltrans right-of-way adjacent to the freeway mainline. The report identified Aerially Deposited Lead exceeding allowable limits within the top 3 feet of soil. The report indicated the soil could be re-used following the attainment of a Lead Contaminated Soil Variance from the California Department of Toxic Substance Control.

A site investigation was conducted on November 19, 2009, to determine the limits and severity of potential ADL contamination. The Site Investigation included the unpaved areas within both the private property and City of Industry property.

2.4.11.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. Based on the soil sampling, the laboratory test results, and the analysis in the Aerially Deposited Lead Content Testing Report (Earth Mechanics 2010), the soils within the project area classified as non-hazardous waste in terms of ADL content.

Current and Reasonably Foreseeable Projects within RSA. The related projects listed in Table 2-1 would adhere to their specific migration measures to minimize adverse effects from exposure to hazardous materials. Thus, the potential for related projects to create hazards or discharge hazardous wastes within the subject area is low, and cumulative impacts would not occur.

Cumulative Impact Potential. The project would comply with all applicable local and Caltrans regulations related to hazardous wastes. Prior to the start of construction, all necessary investigations would be conducted, and remediation would be undertaken if contaminated soil or material is found. Consequently, cumulative impacts are not anticipated.

2.4.11.3 Avoidance, Minimization, and/or Mitigation Measures

The proposed project would not result in an adverse impact related to hazardous waste/materials, and cumulative impacts are not anticipated.

2.4.12 Air Quality

2.4.12.1 Affected Environment

Research Study Area. The proposed project is located in the South Coast Air Basin. The Basin is the appropriate RSA for evaluating cumulative impacts at a regional level. For localized construction effects, an area within a 1,000-foot radius of the project site is considered the RSA.

Existing Conditions within RSA. The State of California has designated the Los Angeles County area of the Basin as being a nonattainment area for ozone, PM_{2.5}, and PM₁₀. The federal EPA has designated this area as being a nonattainment area (moderate) for both ozone (8-hour standard) and PM₁₀.

2.4.12.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. During construction, the proposed project would be subject to SCAQMD Rule 403 (Fugitive Dust), which requires best available fugitive dust control measures to be incorporated into construction practices. Construction impacts of the proposed project were found to be less than significant. In addition, exhaust emissions from diesel-powered construction equipment were found to pose a less-than-significant health risk. The proposed project would not result in adverse operational emissions impacts when compared with the future no-build conditions.

Current and Reasonably Foreseeable Projects within RSA. The only project within 1,000 feet of the project site is the IBC project, with NFL stadium. However, the closest sensitive receptor would be the residents located approximately 0.5 mile northeast and east of the project area. With respect to the construction- and operations-period air quality emissions for projects within the Basin, SCAQMD has developed strategies to reduce criteria pollutant emissions, as outlined in the air quality management plan, pursuant to federal Clean Air Act mandates. As such, projects within the Basin, including all related projects, would comply with SCAQMD Rule 403 requirements, among other SCAQMD requirements. In addition, the projects would comply with adopted air quality management plan emissions control measures. Pursuant to SCAQMD rules and mandates, as well as the CEQA mandate that requires significant impacts to be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted air quality management plan emissions control measures) would also be imposed on construction projects Basin-wide, which would include each of the related projects mentioned in Table 2-1.

Cumulative Impact Potential. Because there are no sensitive receptors within the 1,000-foot buffer of the project site, there would be no localized cumulative construction impacts. In addition, for region-wide emissions, SCAQMD strategies and compliance with SCAQMD rules would mitigate the cumulative air quality impacts of the proposed project and other related projects and development in the Basin. The proposed project would not result in substantially adverse cumulative air quality impacts.

2.4.12.3 Avoidance, Minimization, and/or Mitigation Measures

Adverse cumulative impacts affecting local or regional air quality are not anticipated, and no additional avoidance, minimization, and/or mitigation measures are proposed.

2.4.13 Noise

2.4.13.1 Affected Environment

Research Study Area. The RSA for noise is defined as the area immediately in the vicinity of the project site, which includes surrounding properties along the alignment that may be affected by noise during construction and operation of the project.

Existing Conditions within RSA. There are no potentially affected noise-sensitive receivers in the vicinity of the project.

2.4.13.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. The proposed project would not result in significant noise impacts or adverse effects because of the absence of sensitive noise receptors in the study area.

Current and Reasonably Foreseeable Projects within RSA. Pursuant to guidance contained in the traffic noise protocol, all Type I projects must be analyzed for noise impacts using a preliminary screening procedure. Step one of the screening procedures involves determining whether any potentially affected receivers are in the vicinity of the project. Because there are no sensitive noise receptors in the project vicinity, no further noise analysis is required. Furthermore, none of the related projects listed in Table 2-1 feature a residential component that would add noise-sensitive residential uses within the project vicinity.

Cumulative Impact Potential. There are no potentially affected noise-sensitive receivers in the vicinity of the project site. Therefore, a substantially adverse or significant cumulative impact would not occur.

2.4.13.3 Avoidance, Minimization, and/or Mitigation Measures

No cumulative impacts involving noise are anticipated, and no avoidance, minimization, and/or mitigation measures are proposed.

2.4.14 Biological Environment

2.4.14.1 Affected Environment

Research Study Area. The RSA for plant and wildlife resources is defined as the BSA identified for the proposed project. The BSA for the proposed project encompasses a limit of disturbance of approximately 2.5 acres and a 50-foot buffer.

Drainage within the BSA includes approximately 0.25 acre of USACE waters of the United States, including 0.006 acre of wetlands. Total acreage under CDFG jurisdiction in the BSA amounts to approximately 0.57 acre, which includes 0.25 acre of streambed, with 0.006 acre of wetlands and 0.32 acre of riparian habitat.

Existing Conditions within RSA. Much of the vegetation adjacent to SR-60 and Grand Avenue is ruderal and ornamental, including landscaping with coast live oak (*Quercus agrifolia*) and California walnut (*Juglans californica*). A segment of Diamond Bar Creek, an unimproved perennial drainage tributary to the San Gabriel River, is located in the northwest quadrant of the BSA adjacent to SR-60. Sensitive resources associated with the Diamond Bar Creek riparian system within the BSA include California walnut woodland, southern willow scrub, and several individual California sycamore. According to previous surveys, all endangered or threatened plant species listed under the federal ESA or CESA are confirmed absent from the BSA. The BSA supports habitat suitable for nesting birds protected by the federal Migratory Bird Treaty Act and California Fish and Game Code.

During the 2008 reconnaissance surveys, nine exotic plants in Cal-IPC's Invasive Plant Inventory were identified in the BSA.

2.4.14.2 Environmental Consequences

Potential Direct and/or Indirect Impacts within RSA. Construction of the Build Alternative would result in direct impacts on approximately 0.31 acre of California walnut woodland and southern willow scrub habitat within Diamond Bar Creek, 0.25 acre of permanent impacts on USACE waters of the United States, including 0.006 acre of wetlands, and 0.15 acre of CDFG jurisdictional streambeds, including 0.006 acre of wetlands and 0.16 acre of CDFG jurisdictional riparian habitat. Temporary impacts would include the installation of a non-grouted energy dissipater at the terminus of the culvert and impacts associated with equipment maneuvering during construction. Construction equipment would access the site from the east end of the creek at the existing structure to limit impacts on the downstream preserved area.

Short-term indirect impacts associated with construction of the proposed project may result from potential fuel or lubricant spills from equipment and vehicles; activities outside of designated construction areas involving equipment, vehicles, or personnel; increased erosion, siltation, and runoff; increased localized noise and vibration; and increased dust accumulation on plant leaves. Long-term indirect impacts on sensitive riparian habitat could result from impacts on water quality. Adjacent to the BSA, short-term indirect effects (e.g., construction noise, nighttime lighting) may adversely affect nesting birds, including least Bell's vireo and California gnatcatcher. In addition, construction of the Build Alternative has the potential to spread invasive species.

Implementation of measures BIO-1 through BIO-16 would ensure that the adverse effects from the project would be minimized.

Current and Reasonably Foreseeable Projects within RSA. The related projects are located generally in an area of low biological quality. With respect to impacts on waters of the United States, it is expected that related projects would comply with the pertinent regulations and avoid, minimize, or mitigate impacts at a watershed level.

Cumulative Impact Potential. The potential for cumulative impacts on biological resources is low because of the urbanized and degraded nature of the resources. With implementation of mitigation and/or minimization measures, no substantial adverse effects on wetlands, trees, nesting birds, or surface water runoff would occur from the proposed project. Therefore, the proposed project would not contribute to a cumulatively considerable impact.

2.4.14.3 Avoidance, Minimization, and/or Mitigation Measures

No cumulative impacts on biological resources are anticipated, and no avoidance, minimization, and/or mitigation measures are proposed.

2.5 Climate Change (CEQA)

2.5.1 Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are concerned primarily with the emissions of GHG related to human activity, which include CO₂, methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires ARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009 model year; however, to enact the standards, California needed a waiver from EPA. The waiver was denied by EPA in December 2007 (see *California v. Environmental Protection Agency*, 9th Circuit, July 25, 2008, No. 08-70011). However, on January 26, 2009, it was announced that EPA will reconsider its decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 mpg fuel economy standard for automobiles and light-duty trucks, which will take effect in 2012. On June 30, 2009, EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this executive order 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 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 as Executive Order S-3-05 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." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

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

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted that address GHG emissions reductions and climate change specifically. California, in conjunction with several environmental organizations and several other states, sued to force EPA to regulate GHG as a pollutant under the Clean Air Act (see *Massachusetts vs. Environmental Protection Agency et al.*, 549 USC 497 [2007]). The

court ruled that GHG does fit within the Clean Air Act's definition of a pollutant and that EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no federal regulations to date limiting GHG emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key, well-mixed GHGs (i.e., CO₂, CH₄, N₂O, hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF₆]), in the atmosphere threaten the public health and welfare of current and future generations; and
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

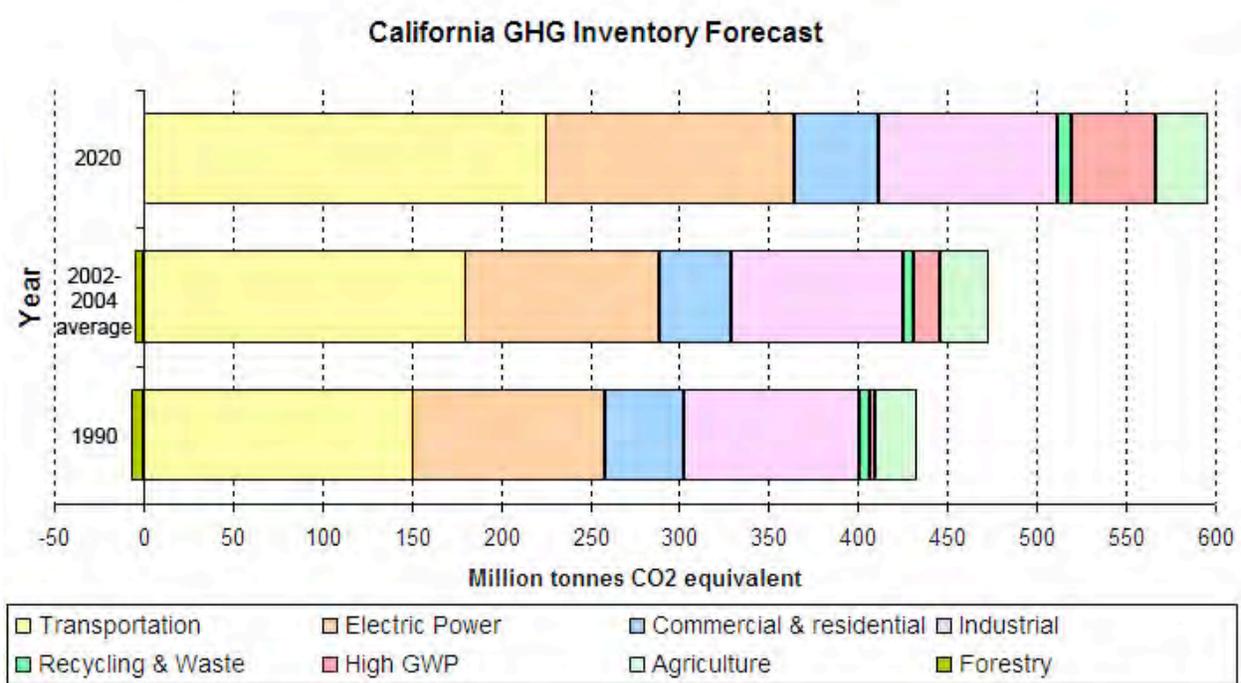
These findings themselves do not impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009 (U.S. Environmental Protection Agency 2009).

According to *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents*, an individual project does not generate enough GHG emissions to influence global climate change significantly (Hendrix and Wilson 2007). Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (see State CEQA Guidelines, Sections 15064(i)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Gathering sufficient information on a global scale regarding all past, current, and future projects to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the draft scoping plan, ARB recently released an updated version of the GHG inventory for California (California Air Resources Board 2008b). Figure 2-12 presents a graph from that update showing the total GHG emissions for California for 1990, 2002–2004 (average), and 2020 (projected) if no action is taken.

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

Figure 2-12. California GHG Emissions (1990, 2002–2004 [average], and 2020 [projected])



Source: California Air Resources Board, 2008b.

2.5.2 Assessment Methodology and Project Analysis

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase. Operational GHG emissions are a function of total VMT; therefore, as VMT increases, GHG emissions increase.

2.5.2.1 Construction

A qualitative analysis of construction-related emissions is provided in Section 2.2.6, “Air Quality.” As stated in Section 2.2.6, construction emissions of criteria pollutants are considered temporary emissions. This is not the case with GHGs because of the cumulative nature of GHGs, which remain in the earth’s atmosphere long after the time of emission. Although construction emissions of GHGs associated with the proposed project would endure in the atmosphere, there is anticipated to be a net decrease in GHG emissions associated with the proposed project because operational emissions of CO₂ are expected to decrease with implementation of the proposed project. As shown in Table 2-25 of Section 2.2.6, yearly operational CO₂ emissions are anticipated to decrease by approximately 2,920 metric tons per year for the open-to-traffic year (2013) and by approximately 2,157 metric tons per year for the design year (2035). Therefore, there would be no adverse effect.

2.5.2.2 Operation

Because automobiles are a major source of GHG emissions and the quantity of GHG emissions from automobiles is directly correlated with the amount of VMT, the estimation of CO₂ emissions was made using Caltrans' CT-EMFAC emission model and traffic data provided by the project traffic engineers, KOA Corporation (KOA Corporation 2010).

Yearly emissions of CO₂ associated with implementation of the proposed project alternatives are presented in Section 2.2.6, "Air Quality," Table 2-25. It is anticipated that operational GHG emissions would decrease with implementation of the proposed project because VMT is expected to decrease with project implementation (Table 2-25).

2.5.3 Minimization Measures

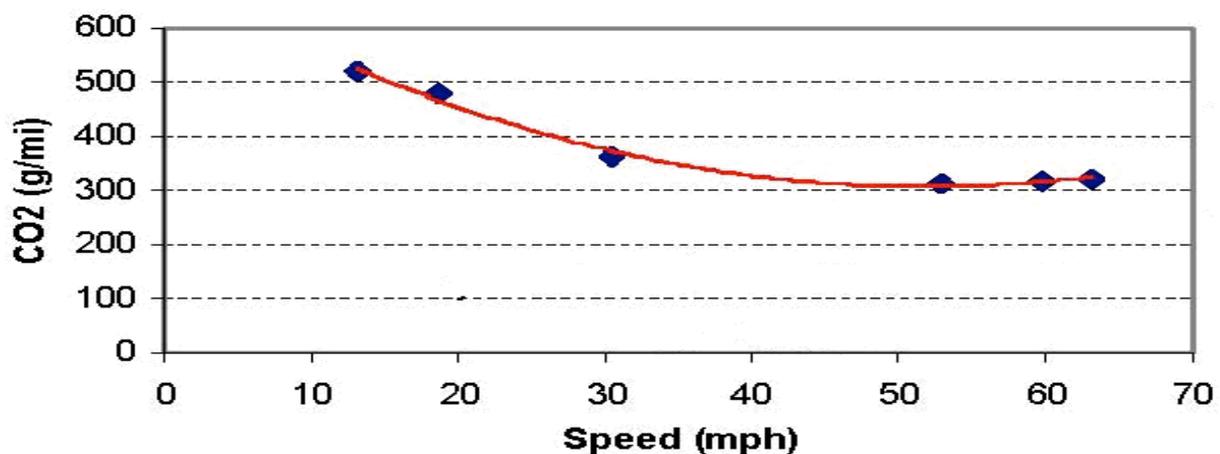
2.5.3.1 Construction

The frequency and occurrence of construction-related GHG emissions can be reduced through innovations in plans and specifications and the implementation of better traffic management during construction phases. In addition, with innovations such as pavement with a longer life, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

2.5.3.2 Operation

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 CO₂ from mobile sources, such as automobiles, occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0 to 25 miles per hour (see Figure 2-13). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

Figure 2-13. Fleet CO₂ Emissions vs. Speed (Highway)



Source: Center for Clean Air Policy. Available: <[http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20\(1-13-04\).pdf](http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf)>.

As indicated in Table 2-31, below, the project would not increase traffic volumes; it would just redistribute them. A large portion of traffic normally bound for the westbound loop ramp is anticipated to use the more direct westbound slip ramp, thereby helping to relieve backed up traffic waiting to enter the westbound loop ramp. As shown in Table 2-32, the project would not worsen LOS and would improve average intersection delay. Overall, the westbound SR-60/Grand Avenue ramp intersection would experience an overall reduction in delay of 193.2 seconds per vehicle, and the eastbound SR-60/Grand Avenue ramp intersection would experience an overall reduction in delay of 55.5 seconds per vehicle. In addition, the 2008 RTP includes strategies to reduce VMT and associated per capita energy consumption from the transportation sector. It also contains mitigation measures related to energy, which are designed to reduce consumption and increase the use and availability of renewable sources of energy in the region (Southern California Association of Governments 2008a). Potential mitigation programs identified in the 2008 RTP to reduce GHG emissions include constructing additional infrastructure and increasing automobile fuel efficiency to accommodate increased use of alternative-fueled motor vehicles. The programs also include coordinating transportation, land use, and air quality planning to reduce VMT, energy use, and GHG emissions (Southern California Association of Governments 2008a).

The EIR for the 2008 RTP performed a GHG emission-reduction strategy consistency analysis to evaluate effects related to climate change associated with the 2008 RTP. This consistency analysis evaluated consistency with ARB; Public Utilities Commission; Business, Transportation, and Housing; State and Consumer Services Agency; and EPA GHG reduction strategies and found that effects on climate change are considered significant, even with implementation of mitigation measures. To help mitigate effects associated with the 2008 RTP, SCAG identified mitigation measures to lessen the effects of the growing transportation energy demand associated with the RTP (Southern California Association of Governments 2008b).

2.5.4 AB 32 Compliance

Caltrans continues to be actively involved with the governor's Climate Action Team as ARB works to implement the governor's executive orders and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system and improve education, housing, and waterways, including \$107 billion in transportation funding during the next decade.

As shown in Figure 2-14, the Strategic Growth Plan targets a significant decrease in traffic congestion and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that, combined, would yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach to a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

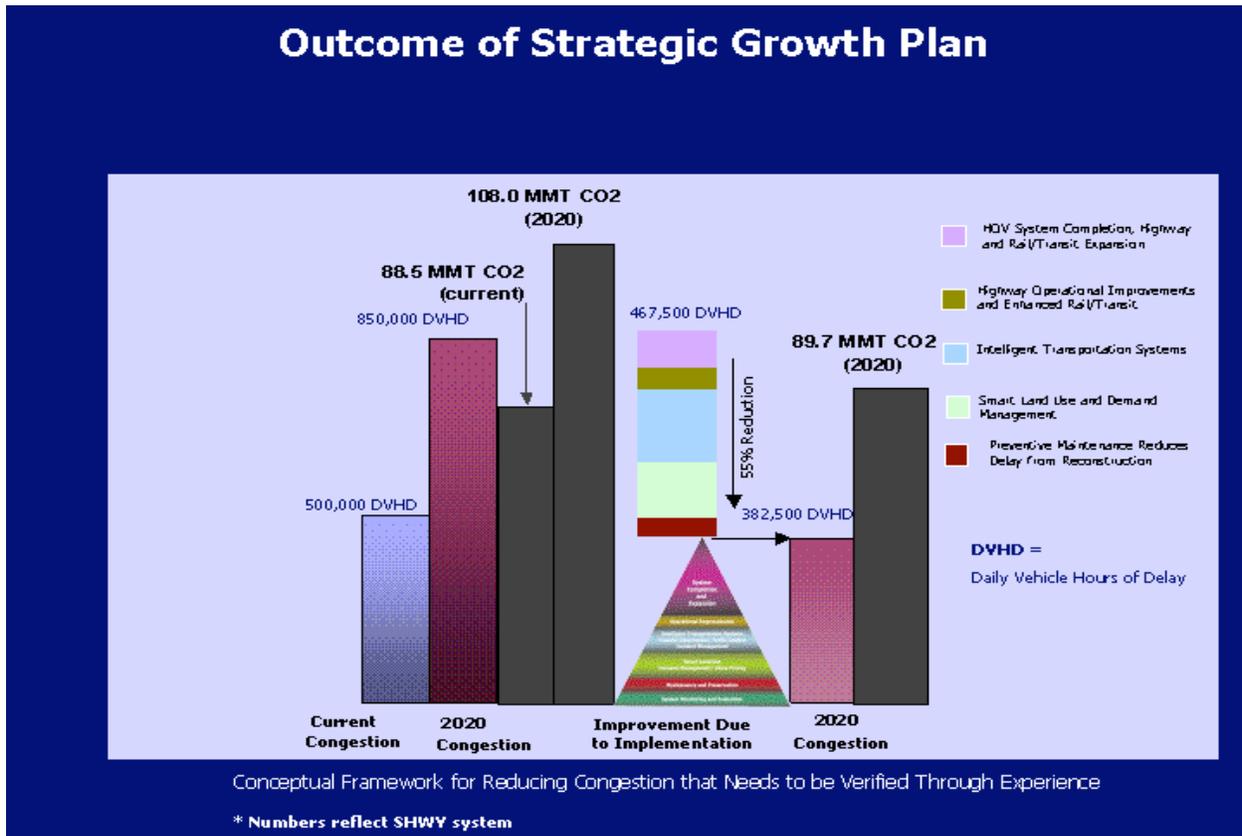
Table 2-31. Mainline and Grand Avenue ADT Volumes

Link	Existing	2013 No Build	2013 Build	2035 No Build	2035 Build
SR-60 EB between Grand Ave on-/off-ramps	112,496	111,859	111,859	108,360	108,360
SR-60 WB between SR-57 SB and Grand Ave on-ramp	107,936	109,576	109,576	118,596	118,596
Grand Ave SB north of SR-60 WB on-/off-ramps	16,630	23,380	23,380	37,320	37,320
Grand Ave SB btwn SR-60 WB off-ramp and WB on-ramp	14,280	19,990	23,380	26,900	42,610
Grand Ave SB btwn SR-60 WB on-ramp and EB ramps	14,280	19,990	19,990	26,900	26,900
Grand Ave SB btwn SR-60 EB ramps and Golden Springs Rd	13,990	14,270	14,270	16,010	16,010
Grand Ave NB north of SR-60 WB on-/off-ramps	11,980	15,280	15,280	28,610	28,610
Grand Ave NB btwn SR-60 EB and WB ramps	11,730	14,350	14,350	24,770	24,770
Grand Ave NB btwn Golden Springs Rd and SR-60 EB ramps	11,700	13,488	13,488	23,310	23,310
Source: KOA Corporation 2010.					

Table 2-32. LOS and Average Delay for With- and Without-Project Conditions

Westbound SR-60/Grand Avenue Ramp Intersection			
Scenario	Peak Period	Delay^a	LOS
2013 No Project	AM Peak Period	114.3	F
	PM Peak Period	43.9	D
2013 With Project	AM Peak Period	40.5	D
	PM Peak Period	22.0	C
2035 No Project	AM Peak Period	273.1	F
	PM Peak Period	359.3	F
2035 With Project	AM Peak Period	123.2	F
	PM Peak Period	316.0	F
Eastbound SR-60/Grand Avenue Ramp Intersection			
Scenario	Peak Period	Delay^a	LOS
2013 No Project	AM Peak Period	45.3	D
	PM Peak Period	137.3	F
2013 With Project	AM Peak Period	20.6	C
	PM Peak Period	24.4	C
2035 No Project	AM Peak Period	121.4	F
	PM Peak Period	96.4	F
2035 With Project	AM Peak Period	59.9	E
	PM Peak Period	102.4	F
^a Average delay in seconds/vehicle. Adapted from: KOA Corporation 2010.			

Figure 2-14. Outcome of Strategic Growth Plan



As part of the Climate Action Program, Caltrans is supporting efforts to reduce VMT by planning and implementing smart land use strategies (e.g., job/housing proximity, 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. Caltrans is doing this by supporting ongoing research efforts at universities, backing legislative efforts to increase fuel economy, and participating in the Climate Action Team (California Department of Transportation 2006c). It is important to note, however, that control of fuel economy standards is held by 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.

Table 2-33 summarizes the actions Caltrans is implementing to reduce GHG emissions. For more detailed information about each strategy, please see the *Climate Action Program at Caltrans* (California Department of Transportation 2006c).

Table 2-33. Climate Change Strategies

Strategy	Program	Partnership		Method/ Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning grants	Caltrans	Local and regional agencies and other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional plans and blueprint planning	Regional agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements and Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy and GHG Considerations in Plans and Projects	Office of Policy Analysis and Research, Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational and Information Program	Office of Policy Analysis and Research	Interdepartmental, Cal/EPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening and Fuel Diversification	Division of Equipment	Department of General Services		Fleet replacement, B20, B100	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy conservation opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and construction industries		2.5% limestone cement mix, 25% fly ash cement mix, > 50% fly ash/slag mix	1.2 0.36	3.6
Goods Movement	Office of Goods Movement	Cal/EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea-level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted to protect the transportation system from sea-level rise.

At the project-level, to the extent that it is applicable or feasible for the project and through coordination with the project development team, the measures listed below would also be included in the project to reduce GHG emissions and potential climate change impacts from the Build Alternative.

- Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing, used singly or in combination, to improve the efficiency or safety of a surface transportation system.
- Landscaping reduces surface warming and, through photosynthesis, decreases CO₂. The project will include planting in the intersection slopes, drainage channels, and seeding in areas adjacent to roads. A variety of plant material and trees of different sizes will be planted where appropriate. This landscaping will help offset CO₂ increases.
- The project will incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs—or balls, in the industry vernacular—cost \$60 to \$70 apiece but last 5 to 6 years, compared with the 1-year average lifespan of the incandescent bulbs that were used previously. The LED balls themselves consume 10 percent of the electricity of traditional lights, resulting in an additional reduction in the project's CO₂ emissions.
- According to the provisions of Caltrans' Standard Specifications, idling time for lane closure during construction is restricted to 10 minutes in each direction; in addition, the contractor must comply with SCAQMD rules, ordinances, and regulations regarding air quality restrictions.
- The use of lighter colored materials, such as Portland cement, helps to reduce the albedo effect and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to concrete mixes. Adding fly ash reduces the GHG emissions associated with concrete production; it also can make the pavement stronger.

2.5.4.1 Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may,

in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency [now the Natural Resources Agency, (Resources Agency)], through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Resources Agency was directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- the range of uncertainty in selected sea level rise projections;
- a synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems;
- a discussion of future research needs regarding sea level rise for California.

Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these

planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) Since the proposed project is programmed for construction funding within the range of years 2008 through 2013, the project is not currently required to consider these planning guidelines.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment which is now due to be released by 2012.

On August 3, 2009, Natural Resources Agency in cooperation and partnership with multiple state agencies, released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the Natural Resource Agency website on December 2, 2009; it can be viewed at: <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and coordination with resource agencies and Native American individuals and organizations. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Scoping Process

A scoping meeting was not required or conducted for the project.

3.2 Interagency Coordination and Consultation

Consultation with several agencies occurred in conjunction with the preparation of the technical reports and the initial study/environmental assessment for the proposed project. The agencies are identified in the various technical reports and include those listed below.

- California Regional Water Quality Control Board
- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- U.S. Army Corps of Engineers
- Native American Heritage Commission

3.2.1 Agency Correspondence Letters

Agency correspondence letters are provided in Appendix F.

3.3 Public Participation

The notice of initiation of studies for the proposed project was circulated for public comment from May 22, 2009, to June 22, 2009. A total of two comment letters/emails were received from the following agencies during the 30-day comment period:

- Anthony Curzi, Regional Planning Assistant II, Los Angeles County Department of Regional Planning; and
- Greg Gubman, AICP, Community Development Director, City of Diamond Bar.

In general, the comments received from the aforementioned agencies pertained to cumulative effects from other regional projects, potential traffic impacts, and potential land use conflicts. These comments are addressed in the technical reports prepared for this document.

During the public circulation period (November 1, 2010, to December 5, 2010) for the draft initial study/environmental assessment, various outreach efforts were made to alert the public about the availability of the document. A Notice of Availability (NOA) (see Figure 3-1), which noted the availability of the draft initial study/environmental assessment for public review, was published in the following newspapers:

San Gabriel Valley Tribune – Monday, November 1, 2010;

La Opinión (Spanish-language daily) – Monday, November 1, 2010; and

World Journal (Chinese-language daily) – Monday, November 1, 2010.

As noted in the NOA, the draft initial study/environmental assessment was made available for public review at the following locations:

Caltrans District 7 Offices
100 S. Main Street
Los Angeles, CA 90012

Diamond Bar Public Library
1061 S. Grand Avenue
Diamond Bar, CA 91765-2299

In addition, an NOA, along with a copy of the draft initial study/environmental assessment, was mailed to agency and elected officials, residents, homeowners, and business owners in the vicinity of the project (see Chapter 5, Distribution List) at the beginning of the public review period.

One comment letter (see Figure 3-2) was received during this circulation period for the draft initial study/environmental assessment. The letter was received from:

Greg Gubman, City of Diamond Bar Community Development Director

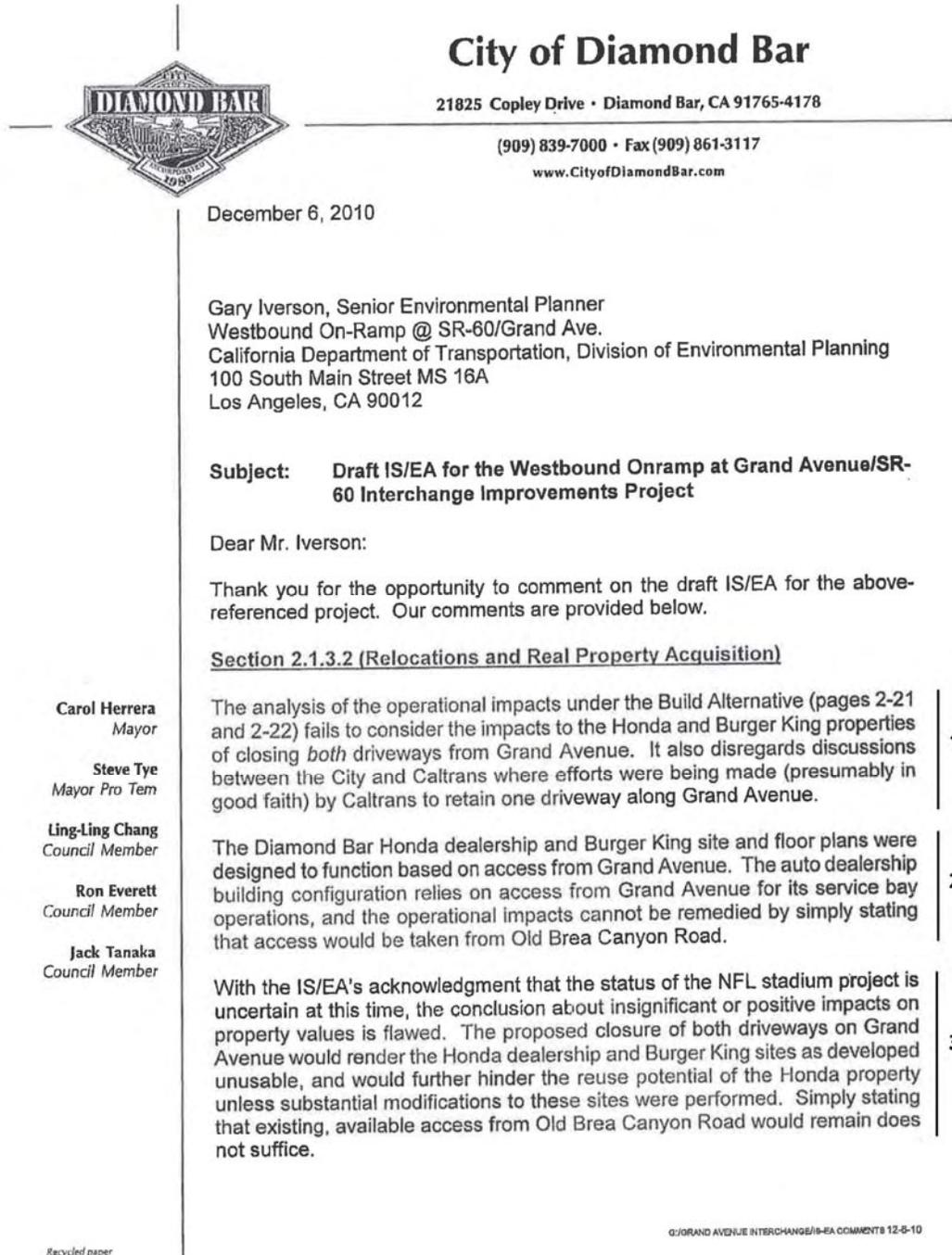
Another letter (see Figure 3-3), which indicated review of the document but had no comments, was received from:

John R. Todd, Chief, Forestry Division, Prevention Services Bureau, County of Los Angeles Fire Department

Figure 3-1. Notice of Availability

<p align="center">PUBLIC NOTICE</p> <p align="center">Notice of Availability of Draft Environmental Document/ Notice of Intent to Adopt a Mitigated Negative Declaration for the Westbound On-Ramp at Grand Avenue/State Route 60 Interchange Improvements Project</p>		
		
What's Being Planned?	<p>The California Department of Transportation (Department), proposes to construct a direct westbound on-ramp to State Route 60 at the Grand Avenue interchange, which is located in the City of Industry, in Los Angeles County.</p>	
Why This Ad?	<p>Caltrans has studied the effects that the proposed project may have on the environment and community. The results of these studies are contained in an environmental document known as an Initial Study/ Environmental Assessment (IS/EA). The purpose of this notice is to inform the public of its completion and availability to any interested individuals.</p>	
What's Available?	<p>The IS/EA is available for review and copying at the Caltrans District 7 Division of Environmental Planning (100 S. Main Street, Los Angeles) on weekdays from 8:00 a.m. to 4:30 p.m.</p> <p>The IS/EA is also available for review at the following location near the project site:</p> <p align="center">Diamond Bar Public Library 1061 S. Grand Avenue Diamond Bar, CA 91765-2299</p>	
Where Do You Come In?	<p>Do you have any comments regarding the IS/EA? Do you disagree with the findings of the studies? Would you care to make any other comments about the project? Please submit any written comments no later than December 5, 2010 to:</p> <p align="center">Mr. Gary Iverson Senior Environmental Planner California Department of Transportation Division of Environmental Planning 100 South Main Street, Suite 100, MS 16A Los Angeles, CA 90012</p>	
Contact	<p>For additional information, please contact Gary Iverson at (213) 897-3818.</p>	
<p align="center">Thank you for your interest in this transportation project. Caltrans improves mobility across California!</p>		

Figure 3-2. Comment Letter Received during Circulation Period



Gary Iverson
December 6, 2010
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If you have any follow-up questions, please feel free to call me at (909) 839-7065. Again, thank you again for the opportunity to submit our comments at this time. We look forward to working closely with Caltrans and the City of Industry as this project progresses.

Sincerely,



Greg Gubman, AICP
Community Development Director

cc: James DeStefano, City Manager
David Doyle, Assistant City Manager
David Liu, Public Works Director/City Engineer
Rick Yee, Senior Engineer
Ryan McLean, Assistant to the City Manager

Comment Letter A1: Greg Gubman, Community Development Director, City of Diamond Bar

Response to Comment Letter A1

Response to Comment #1: The text of the draft initial study/environmental assessment incorrectly stated that both driveways would be closed. The driveway to the former Honda dealership (now vacant) would remain open. The text of this final initial study/environmental assessment has been revised accordingly.

Response to Comment #2: As noted in the response to the previous comment, the existing driveway from Grand Avenue at the former Diamond Bar Honda dealership would remain open. Changes in the text have been made to clarify that this driveway would remain open to access from Grand Avenue. The only driveway to be closed would be the one to the Burger King site. Closure of that driveway is required to comply with Caltrans' *Highway Design Manual* safety guidelines. Caltrans would consider additional signage on Grand Avenue to direct patrons to use Old Brea Canyon Road to compensate for this loss of access. Loss of access may be considered a compensable damage, and the owner would be compensated for it in accordance with provisions of the Uniform Relocation Act. Customers currently can and do use the existing access from Old Brea Canyon Road for ingress and egress to the Burger King site.

Response to Comment #3: Please see the responses to the previous comments. The existing access driveway from Grand Avenue to the former Diamond Bar Honda dealership would remain open. Though the driveway from Grand Avenue to the Burger King parcel would be closed, Caltrans would consider additional signage on Grand Avenue to direct patrons to use Old Brea Canyon Road. If this loss of access is considered a compensable damage under the provisions of the Uniform Relocation Act, the owner will be compensated for the loss of access.

Figure 3-3. Letter from County of Los Angeles Fire Department



COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294

(323) 890-4330

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

January 24, 2011

Gary Iverson, Senior Environmental Planner
California Department of Transportation
Division of Environmental Planning
100 South Main Street Ms 16a
Los Angeles, CA 90012

Dear Mr. Iverson:

**DRAFT INITIAL STUDY/ENVIRONMENTAL ASSESSMENT, 07-LA-60 PM 23.87/R24.48,
WESTBOUND ON-RAMP AT GRAND AVENUE STATE ROUTE 60, EA 155100, CITY OF
INDUSTRY AND DIAMOND BAR (FFER #201000229)**

The Draft Initial Study/Environmental Assessment has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. We have no comments at this time.

LAND DEVELOPMENT UNIT:

1. The statutory responsibilities of the County of Los Angeles Fire Department, Land Development Unit, are the review of, and comment on, all projects within the unincorporated areas of the County of Los Angeles. Our emphasis is on the availability of sufficient water supplies for fire fighting operations and local/regional access issues. However, we review all projects for issues that may have a significant impact on the County of Los Angeles Fire Department. We are responsible for the review of all projects within Contract Cities (Cities that contract with the County of Los Angeles Fire Department for fire protection services).

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS	BRADBURY	CUDAHY	HAWTHORNE	LA MIRADA	MALIBU	POMONA	SIGNAL HILL
ARTESIA	CALABASAS	DIAMOND BAR	HIDDEN HILLS	LA PUENTE	MAYWOOD	RANCHO PALOS VERDES	SOUTH EL MONTE
AZUSA	CARSON	DUARTE	HUNTINGTON PARK	LAKEWOOD	NORWALK	ROLLING HILLS	SOUTH GATE
BALDWIN PARK	CERRITOS	EL MONTE	INDUSTRY	LANCASTER	PALMDALE	ROLLING HILLS ESTATES	TEMPLE CITY
BELL	CLAREMONT	GARDENA	INGLEWOOD	LAWDALE	PALOS VERDES ESTATES	ROSEMEAD	WALNUT
BELL GARDENS	COMMERCE	GLENORA	IRWINDALE	LOMITA	PARAMOUNT	SAN DIMAS	WEST HOLLYWOOD
BELLFLOWER	COVINA	HAWAIIAN GARDENS	LA CANADA-FLINTRIDGE	LYNWOOD	PICO RIVERA	SANTA CLARITA	WESTLAKE VILLAGE
			LA HABRA				WHITTIER

Gary Iverson, Senior Environmental Planner
January 24, 2011
Page 2

We are responsible for all County facilities, located within non-contract Cities. The County of Los Angeles Fire Department, Land Development Unit may also comment on conditions that may be imposed on a project by the Fire Prevention Division, which may create a potentially significant impact to the environment. The Fire Prevention Division, Land Development Unit has no further comments regarding this project.

2. Should any questions arise regarding this project, please contact the County of Los Angeles Fire Department, Land Development Unit Inspector, Claudia Soiza, at (323) 890-4243. The County of Los Angeles Fire Department, Land Development Unit appreciates the opportunity to comment on this project.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

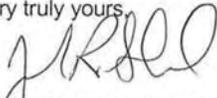
1. The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance.
2. The areas germane to the statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division have been addressed.

HEALTH HAZARDOUS MATERIALS DIVISION:

1. The Health Hazardous Materials Division has no objection to the proposed project.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,



JOHN R. TODD, CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

JRT:lj

Chapter 4 List of Preparers

4.1 California Department of Transportation

Gary Iverson, Senior Environmental Planner
Augustin Barajas, Associate Environmental Planner
Anthony Baquiran, Associate Environmental Planner
Jason Roach, Associate Environmental Planner
Samer Momani, Associate Environmental Planner
Ronald Okuda, Transportation Engineer
Vincent Chen, Transportation Engineer
Md Shaheed, Transportation Engineer
Manish Patel, Transportation Engineer
Andrew Yoon, Air Quality Branch Chief
Ralph Sazaki, Hydraulics Branch Chief
Gustavo Ortega, Geotechnical Branch Chief
George Olguin, Landscape Architect
Jin S. Lee, Noise & Vibrations Branch Chief
Paul Caron, Biology Branch Chief
Michelle Morrison, Cultural Specialist
Lily Kam, Senior Traffic Engineer

4.2 ICF International

Lee Lisecki, Project Director
Shilpa Trisal, Project Manager
Mario Anaya, Environmental Planner
Hina Gupta, Environmental Planner
Peter Feldman, Environmental Planner
Tamseel Mir, Environmental Planner
Laura Smith, Air Quality and Climate Change Specialist
Shannon Hill, Air Quality and Climate Change Specialist
Shannon Hatcher, Senior Air Quality Specialist
Keith Cooper, Senior Air Quality Specialist
Elizabeth Hilton, Architectural Historian
Richard Starzak, Senior Architectural Historian
Catharine Wood, Archeologist
Mark Robinson, Senior Archeologist
Kamber Zielke, Water Quality Specialist
Nate Martin, Senior Water Quality Specialist

Michael Greene, Senior Noise Specialist
John Mathias, Editor
Namrata Belliappa, GIS Specialist

4.3 Sage Environmental Group

Alissa Cope, Principal

4.4 KOA Corporation

Rock Miller, Principal
Ronn Knox, Associate Transportation Planner

4.5 RBF Consulting

Lorraine Ahlquist, Regional Environmental Services Manager—Transportation
Nora Jans, Environmental Specialist

Chapter 5 Distribution List

The initial study/environmental assessment was distributed to the federal, state, local, and regional agencies and utility providers listed below. In addition, property owners or members of the community who would be affected directly by the project or have expressed interest in the project were provided with the document's notice of preparation and/or a copy of the initial study/environmental assessment.

The Honorable Bob Huff
State Senator, 29th District
2605 E. Foothill Blvd, Suite A
Glendora, CA 91741

The Honorable Gloria Romero
State Senator, 24th District
149 S. Mednik Ave, Suite 202
Los Angeles, CA 90022

The Honorable Edward P. Hernandez
Assembly Member, 57th District
1520 West Cameron Avenue, Suite 165
West Covina, CA 91791

The Honorable Curt Hagman
Assembly Member, 60th District
23355 E. Golden Springs Drive
Diamond Bar, CA 91765

The Honorable Mike Feuer
U.S. Representative, 42nd District
1800 E. Lambert Rd, Suite 150
Brea, CA 92821

The Honorable Ron Everett
Mayor, City of Diamond Bar
Diamond Bar City Hall
21825 Copley Drive
Diamond Bar, CA 91765

Mayor, Pro Tem Carol Herrera
Diamond Bar City Hall
21825 Copley Drive
Diamond Bar, CA 91765

Councilmember Wen P. Chang
Diamond Bar City Hall
21825 Copley Drive
Diamond Bar, CA 91765

Councilmember Jack Tanaka
Diamond Bar City Hall
21825 Copley Drive
Diamond Bar, CA 91765

Councilmember Steve Tye
Diamond Bar City Hall
21825 Copley Drive
Diamond Bar, CA 91765

The Honorable David Perez
15625 E. Stafford St., Suite 100
City of Industry, CA 91744

The Honorable Grace F. Napolitano
U.S. Representative, 38th District
11627 E Telegraph Rd., Suite 100
Santa Fe Springs, CA 90670

Councilmember John P. Ferrero
City of Industry
15625 East Stafford Street, Suite 100
City of Industry, CA 91744

Councilmember Tim Spohn
City of Industry
15625 East Stafford Street, Suite 100
City of Industry, CA 91744

Councilmember Jeff Parriott
City of Industry
15625 East Stafford Street, Suite 100
City of Industry, CA 91744

Councilmember Roy Haber III
City of Industry
15625 East Stafford Street, Suite 100
City of Industry, CA 91744

The Honorable Gloria Molina
Supervisor, 1st District
L.A. County Board of Supervisors
856 Kenneth Hahn Hall of Admin.
500 West Temple Street
Los Angeles, California 90012

The Honorable Don Knabe
Supervisor, 4th District
L.A. County Board of Supervisors
856 Kenneth Hahn Hall of Admin.
500 West Temple Street
Los Angeles, California 90012

The Honorable Barbara Boxer
United States Senate
312 N. Spring Street, Suite 1748
Los Angeles, CA 90012

The Honorable Dianne Feinstein
United States Senate
11111 Santa Monica Boulevard, Suite 915
Los Angeles, CA 90025
Nancy Fong, Community Dev.
City of Diamond Bar
21825 Copley Drive
Diamond Bar, CA 91765

Mike Kissell, Planning Director
City of Industry
15625 East Stafford Street, Suite 100
City of Industry, CA 91744

The Honorable Mary Su
Mayor, City of Walnut
2120 I La Puente Road
Walnut, CA 91789

David Liu, Public Works Director
City of Diamond Bar
21825 Copley Drive
Diamond Bar, CA 91765

Environmental Protection Agency Office of Federal Activities (A104) 401 M Street SW Washington, DC 20460	District Commander U.S. Army Corps of Engineers Los Angeles District Attn: Public Affairs Office, Suite 1525 911 Wilshire Boulevard Los Angeles, CA 90012	Regional Director, Pacific Southwest Attn: Ren Lohofener U.S. Fish and Wildlife Service 2800 Cottage Way, W-2606 Sacramento, CA 95825
Director Office of Environmental Compliance U.S. Department of Energy 1000 Independence Avenue, SW Room 4G-064 Washington, DC 20585	California Wildlife Conservation Board 1416 Ninth Street Sacramento, CA 95814	California Dept. of Conservation Div. of Land Resource Protection 801 K Street. MS 13-71 Sacramento, CA 95814
Edwin Pert, Regional Manager California Dept. of Fish and Game, Region 5 4949 Viewridge Avenue San Diego, CA 92123	California Highway Patrol Southern Division 411 North Central Avenue, Suite 410 Glendale, CA 91203-2020	R. Austin Wisell, Caltrans Division Chief Division of Aeronautics 1415 11th Street Sacramento, CA 95814
State Water Resources Control Board 100 I Eye Street Sacramento, CA 95814	State Historic Preservation Officer Office of Historic Preservation Department of Parks and Recreation P.O. Box 942896 Sacramento, CA 94296-0001	Public Utilities Commission 320 West 4th Street, Suite 500 Los Angeles, CA 90013
Native American Heritage Commission 915 Capitol Mall, Room 364 Sacramento, CA 95814	Air Resources Board CEQA Compliance 9528 Telstar Avenue EI Monte, CA 91731	California Transportation Commission Attention: Susan Bransen 1120 N Street, MS 52 Sacramento, CA 95814
Division of Environmental Analysis Attn: Caltrans CTC Liaison 1120 N Street, MS 27 Sacramento, CA 95814	Chair Attn: Mary Ann Lutz Los Angeles Regional Water Quality Control Board 320 West 4th Street, Suite 200 Los Angeles, CA 90013	Director, Department of Public Works County of Los Angeles 900 S. Fremont Ave. Alhambra, CA 91803
Steve Smith South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765	Los Angeles County Metropolitan Transportation Authority One Gateway Plaza, M.S. 99-23-2 Los Angeles, CA 90012-2952	Greater Los Angeles Vector Control CEQA Compliance 12545 Florence Avenue Santa Fe Springs, CA 90670
Southern California Association of Governments Intergovernmental Review 818 W. Seventh Street, 12th Floor Los Angeles, CA 90020	Deputy Director Watershed Management Division Los Angeles Dept. Public Works 900 S. Fremont Ave., 11th Floor Alhambra, CA 91803-1331	Administrative Director Metrolink 700 South Flower Street, Suite 2600, Los Angeles, CA 90017
Fire Chief Attn: Michael Freeman Los Angeles County Fire Department 1320 North Eastern Avenue Los Angeles, CA 90063	Chair Attn: Peggy Delach Foothill Transit District 100 North Barranca Avenue, Suite 100 West Covina, CA 91791	Jim Stahl, General Manager Sanitation Districts of Los Angeles County P.O. Box 4998 1955 Workman Mill Road Whittier, CA 90607-4998

Timothy Gallagher, Director County of Los Angeles Department of Parks and Recreation 433 South Vermont Avenue Los Angeles, CA 90020	Metropolitan Water District of Southern California CEQA Compliance 100 North Alameda Street Los Angeles, CA 90012-2944	Executive Director The Walnut Chamber of Commerce 18800 Amar Road, Suite B-13 Walnut, CA 91789
Deputy Director Attn: Mr. Sorin Alexanian Airport Land Use Commission Department of Regional Planning 320 West Temple Street, Rm. 1356 Los Angeles, CA 90012	Captain Michael W. Smith Los Angeles County Sheriff's Department, Industry Station 150 North Hudson Ave. Industry, CA 91744-4430	Executive Director City of Industry Chamber of Commerce Industry Manufacturers Council 255 North Hacienda Boulevard Industry, CA 91744
Captain Michael Kwan Los Angeles County Sheriff's Department Walnut/Diamond Bar Station 21695 Valley Blvd. Walnut, CA 91789	Walnut Valley Unified School District Superintendent's Office 880 South Lemon Avenue Walnut, CA 91789	Executive Director Diamond Bar Chamber of Commerce 21845 Copley Drive, Suite 1170 Diamond Bar, CA 91765
Pomona Unified School District Superintendent's Office P.O. Box 2900 Pomona, CA 91769	Executive Committee Sierra Club, Los Angeles Chapter 3435 Wilshire Boulevard, Suite 320 Los Angeles, CA 90010-1904	President Automobile Club of Southern California 3333 Fairview Road Costa Mesa, CA 92626
President California Wildlife Federation Attn: Randy Walker P.O. Box 1527 Sacramento, CA 95812	Southern California Edison Right-of-Way Division P. O. Box 410 Long Beach, CA 90801	Mr. Ed Schuetz Verizon, Engineering 1400 East Phillips Blvd., Building A Pomona, CA 91766
La Petite Academy Attn: Principal 722 Grand Ave Diamond Bar, CA 91765	Anthony Curzi Regional Planning Assistant II Impact Analysis, Los Angeles County Department of Regional Planning 320 West Temple Street Los Angeles, CA 90012	Diamond Bar Golf Course 22751 E. Golden Springs Drive Diamond Bar, CA 91765
Mr. David Bolour Hollywood Plaza Associates 1710 N McCadden Place Hollywood, CA 90028-4603	Southern California Gas Company Centralized Correspondence P.O. Box 3150 San Dimas, CA 91773	Walnut Valley Water District 271 S. Brea Canyon Road Walnut, CA 91789

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APPENDICES

Appendix A Environmental Checklist

Appendix A: Environmental Checklist

Supporting documentation for all CEQA Checklist determinations is provided in Chapter 2 of this initial study/environmental assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. A discussion of all impacts as well as avoidance, minimization, and/or compensation measures is provided under the specific topic headings found 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
II. Agricultural and Forest Resources					
<p>In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board.</p> <p>Would the project:</p>					

II. Agricultural and Forest Resources		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

III. Air Quality		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:					
a.	Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
III. Air Quality					
d.	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. Biological Resources					
Would the project:					
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

V. Cultural Resources		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. Geology and Soils		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1.	Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.	Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VI. Geology and Soils					
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VII. Greenhouse Gas Emissions					
Would the project:					
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VIII. Hazards and Hazardous Materials					
Would the project:					
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VIII. Hazards and Hazardous Materials		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. Hydrology and Water Quality		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. Hydrology and Water Quality		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h.	Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j.	Contribute to inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. Land Use and Planning		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
a.	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XI. Mineral Resources				
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. Noise				
Would the project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. Population and Housing	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. Public Services	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XV. Recreation				
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVI. Transportation/Traffic				
Would the project:				
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with adopted policies, plans, or programs regarding public transit or bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

XVII. Utilities and Service Systems	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. Mandatory Findings of Significance	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Appendix B Section 4(f) Evaluation

Appendix B. Section 4(f) Evaluation

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 Department under its assumption of responsibility pursuant to 23 U.S.C. 327.

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

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

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

No publicly owned land of a public park, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) exist within project limits; therefore, the provisions of Section 4(f) are not triggered.

Appendix C Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR

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*Flex your power!
Be energy efficient!*

January 14, 2005

**TITLE VI
POLICY STATEMENT**

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

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

WILL KEMPTON

Director

Appendix D Environmental Commitments Record

Appendix D: Environmental Commitments Record

Log No.	Commitment Type	Responsible Party	Monitoring Frequency	Implementation/ Monitoring Phase	SSP#/ NSSP#	Env Doc/Permits Specs/Plans/ Estimates	Commitment Measure
BIOLOGY							
Mitigation 1-1	Environmentally Sensitive Areas	Biologist	Weekly/as required during construction	Prior to and During Construction		IS/EA Section 2.3.1.4	To ensure that the construction footprint within the BSA is minimized to the extent practicable adjacent to Diamond Bar Creek, the construction limits, as defined in Figure 2-11, shall be clearly defined on the construction drawings. Construction equipment shall access the site from the east end of the creek at the existing structure to limit impacts on the downstream preserved area. All equipment maintenance, staging, and dispensing of fuel, oil, or coolant, or any other such activities, will be restricted to designated disturbed/developed areas. These areas will be located in such a manner as to prevent runoff from entering existing native vegetation areas and clearly designated on the construction plans. Prior to construction, under the supervision of the project biologist, the limits of project impacts (including construction staging areas and access routes) will be clearly delineated with bright orange plastic fencing, stakes, flags, or markers that will be installed in a manner that does not affect habitats to be avoided and such that they are clearly visible to personnel on foot and operating heavy equipment. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the Carlsbad Fish and Wildlife Office (CFWO). Any impacts that occur beyond the approved fenced area will be offset in consultation with the CFWO. Temporary construction fencing and markers will be removed upon project completion.
Minimization 1.1	Native Trees within Caltrans' Landscaped Areas	Caltrans	Monthly/as required before removing trees and replanting	Prior to and During Construction		IS/EA Section 2.3.1.4	Although not anticipated, any native coast live oak present within the existing Caltrans landscaped areas that require removal shall be replaced as follows: Mark all native trees (diameter at breast height [dbh] of more than 6 inches and 4.5 feet above surrounding grade) and replace with the same species at a 1:1 ratio. Source materials shall be the same subspecies and/or variety locally present and seeds or cuttings gathered within coastal Southern California to ensure local provenance.

Log No.	Commitment Type	Responsible Party	Monitoring Frequency	Implementation/ Monitoring Phase	SSP#/ NSSP#	Env Doc/Permits Specs/Plans/ Estimates	Commitment Measure
Minimization 1.2	Native Trees outside Caltrans' Landscaped Areas	City of Industry and/or Caltrans	Monthly/as required before removing trees and replanting	Prior to and During Construction		IS/EA Section 2.3.1.4	All native trees located outside of Caltrans' landscaped areas that require removal shall be replaced as follows: Mark all native trees (dbh of more than 6 inches and 4.5 feet above surrounding grade) and replace with the same species at a 2:1 ratio. Source materials shall be the same subspecies and/or variety locally present and seeds or cuttings gathered within coastal Southern California to ensure local provenance. Cuttings, when possible, shall be gathered from Diamond Bar Creek to ensure true genetic continuity.
Minimization 1.3	Construction-Period Preventive Measures	Caltrans and Construction Contractor	Daily/as needed during construction	Construction		IS/EA Section 2.3.1.4	<p>Caltrans will ensure that the following will be implemented during project construction:</p> <ul style="list-style-type: none"> a. Contractors and construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint; b. The project site will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site; c. Pets of project personnel will not be allowed on the project site; d. All equipment maintenance, staging, and dispensing of fuel, oil, or coolant, or any other such activities, will occur within the fenced project impacts limits; e. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures; f. If night work is necessary, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded, and directed away from natural habitats; g. Cut and fill will be balanced within the project, or the construction contractor will identify the source or disposal location. All spoils and material disposal will be disposed of properly.

Log No.	Commitment Type	Responsible Party	Monitoring Frequency	Implementation/ Monitoring Phase	SSP#/ NSSP#	Env Doc/Permits Specs/Plans/ Estimates	Commitment Measure
Mitigation1-2	Compensatory Measures	City of Industry and/or Caltrans; U.S. EPA; U.S. Army Corps of Engineers (USACE)	Once/or as required during construction	Prior to and at the start of Construction		IS/EA Section 2.3.1.4	Concurrent with the initiation of construction, permanent impacts on waters of the United States shall be offset through replacement within a section of Diamond Bar Creek immediately downstream at a minimum ratio of 1:1, enhancement through the purchase of mitigation from an off-site mitigation bank, or participation in an in-lieu fee program.
Minimization 1.4	Wetland/Riparian/Uplands Mitigation Monitoring Plan	Caltrans, USACE and CDFG	Once prior to commencement of construction	Prior to the start of Construction		IS/EA Section 2.3.1.4	<p>A Habitat Mitigation Monitoring Plan (HMMP) shall be prepared and approved by USACE and CDFG prior to the commencement of construction within jurisdictional waters. At a minimum, the HMMP shall meet the following criteria:</p> <ul style="list-style-type: none"> • The habitat shall be replaced and/or enhanced at a minimum ratio of 2:1, • The HMMP shall identify a success criterion of at least 80 percent for native riparian vegetation cover of replaced habitat, and • The HMMP shall include a 5-year establishment period for replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.
Minimization 1.5	Erosion and Stormwater	City of Industry, Caltrans, and Construction Contractor	Weekly/as required between October and May	Prior to and During Construction		IS/EA Section 2.3.1.4	To the extent feasible, construction activities shall occur outside the rainy season (October to May) to ensure that erosion does not occur and that sedimentation is not deposited within the storm drain system or any adjacent drainages. If construction occurs during the rainy season, appropriate erosion and stormwater control devices shall be in place and maintained throughout the rainy season prior to the onset of vegetation clearing and be maintained in good repair until the completion of project construction. Erosion and sediment control devices used, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.

Log No.	Commitment Type	Responsible Party	Monitoring Frequency	Implementation/ Monitoring Phase	SSP#/ NSSP#	Env Doc/Permits Specs/Plans/ Estimates	Commitment Measure
Minimization 1.6	CWA Section 404	Caltrans, USACE and EPA	Once prior to obtaining grading permits	Prior to Construction		IS/EA Section 2.3.1.4; Section 404 of the Clean Water Act (CWA)	A Nationwide Permit shall be obtained through USACE prior to obtaining grading permits, pursuant to Section 404 of the Clean Water Act.
Minimization 1.7	Streambed Alteration	Caltrans and CDFG	Once prior to obtaining grading permits	Prior to Construction		IS/EA Section 2.3.1.4	A Streambed Alteration Notification shall be submitted, and authorization from CDFG shall be obtained prior to obtaining grading permits.
Minimization 1.8	RWQCB Certification or Waiver	Caltrans and LARWQCB	Once prior to commencement of construction	Prior to Construction		IS/EA Section 2.3.1.4	A certification or waiver from the Region 4 RWQCB shall be obtained prior to the initiation of construction.
Minimization 1.9	Bird Protection – Nesting Birds	Biologist	Weekly/as required between 02-15 and 09-01	Construction		IS/EA Section 2.3.1.4; CDFG Nesting Birds regulations	Grubbing of vegetation within Diamond Bar Creek shall occur outside of the bird nesting season, defined by CDFG regulations as February 15 through September 1, to avoid potential impacts on nesting birds. However, work may occur during the nesting season if a preconstruction nest survey is conducted by a qualified biologist with a current USFWS 10A permit to conduct surveys for least Bell's vireo and California gnatcatcher. The survey shall be conducted within the proposed impact area and adjacent suitable habitat up to 500 feet outside the BSA. The survey shall consist of four site visits conducted at least 1 week apart. The final survey shall be conducted within 3 days of the start of construction to ensure that no impacts on nesting birds occur. Should nesting birds be present, no work shall be conducted within a minimum of 50 feet of that area until the young have fledged and are no longer affected by the project, as determined by the qualified biologist. The project biologist will confer daily by phone with the CFWO regarding the status of the vegetation clearing work and the numbers, locations, and sex of the vireos (if observed); observed vireo behavior (especially in relation to project activities); and presence of vireo nest-building activities, egg incubation activities, or brood-rearing activities.

Log No.	Commitment Type	Responsible Party	Monitoring Frequency	Implementation/ Monitoring Phase	SSP#/ NSSP#	Env Doc/Permits Specs/Plans/ Estimates	Commitment Measure
Minimization 1.10	Bird Protection – Nesting Birds	Biologist and Construction Contractor	Weekly/as required between 02-15 and 09-15	Construction		IS/EA Section 2.3.1.4	<p>Should construction within and/or adjacent to the Diamond Bar Creek riparian corridor occur during the bird nesting season, generally defined as March 15 to September 15, the following noise attenuation measures shall be implemented:</p> <ul style="list-style-type: none"> • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers; and • Temporary noise barriers shall be installed along the construction footprint boundary adjacent to Diamond Bar Creek. The noise barriers shall be a minimum of 15 feet in height. • All pile driving for the project that will occur near habitats that support vireos will be conducted between September 16 and March 14 to avoid the vireo breeding season (or sooner than September 16 if the project biologist demonstrates to the satisfaction of the CFWO that all nesting is complete) and minimize construction noise impacts on nesting vireos.
Mitigation 1-3	Bird Protection – Nesting Birds	Biologist and Construction Contractor	Weekly/as required between 02-15 and 09-15	Construction		IS/EA Section 2.3.1.4	<p>Should nighttime construction within and/or adjacent to the Diamond Bar Creek riparian corridor occur during the bird nesting season, generally defined as March 15 to September 15, the following nighttime lighting attenuation measures shall be implemented:</p> <ul style="list-style-type: none"> • Temporary nighttime lighting shall be hooded and directed away from the adjacent riparian corridor, and • Temporary nighttime lighting barriers shall be installed along the construction footprint boundary adjacent to Diamond Bar Creek. The lighting barriers shall be a minimum of 15 feet in height.
Mitigation 1-4	Adjacent Riparian Habitat	Resident Engineer and Construction Contractor	Once during Final PS&E and during lighting installation	Final PS&E and Construction		IS/EA Section 2.3.1.4	<p>New permanent lighting installed along the on-ramp shall be hooded and low voltage to limit light spillover into the adjacent Diamond Bar Creek riparian habitat area.</p>

Log No.	Commitment Type	Responsible Party	Monitoring Frequency	Implementation/ Monitoring Phase	SSP#/ NSSP#	Env Doc/Permits Specs/Plans/ Estimates	Commitment Measure
Minimization 1.11	EPA Section 7 Consultation	Caltrans and USFWS	Once prior to construction	PAED phase, before approval of final PAED document		IS/EA Section 2.3.1.4; Section 7 of the Endangered Species Act	Informal consultation with USFWS under Section 7 of the federal Endangered Species Act was conducted to confirm that the measures proposed herein shall avoid and minimize potential indirect effects on threatened and endangered species. As a result of this consultation, the measures dealing with biological resources have been revised, as shown in this Mitigated Negative Declaration/Finding of No Significant Impact and in Appendix D, the Environmental Commitments Record. The new measures that have been added are also a result of this consultation.
Mitigation 1-5	Habitat Mitigation Monitoring Plan	Caltrans, City, Project Biologist, and Construction Contractor	Once prior to construction	During PS&E phase or prior to any construction activities		IS/EA Section 2.3.5.4	Caltrans will offset permanent impacts on 0.31 acre of vireo habitat (including southern willow scrub) through creation of 0.62 acre of riparian and wetland vegetation. The habitat creation area is part of a larger 26-acre creation project that is addressed in consultation FWS-LA-10B0545-10I0723 for the Industry Business Park. The creation area will be permanently conserved and managed in accordance with the requirements of consultation FWS-LA-10B0545-10I0723. The habitat creation/restoration will be conducted in accordance with the Final Habitat Mitigation and Monitoring Program for the Industry Business Center Project, updated June 16, 2009. Prior to affecting vireo habitat within Diamond Bar Creek, Caltrans will submit a map of the specific habitat creation area that will be completed as part of the Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project for review and approval to the CFWO. Documentation of the initiation of habitat creation activities for the project will be provided to the CFWO on or prior to December 1, 2013.
Minimization 1.11	Biological Monitoring	Caltrans, City, and Project Biologist	Once prior to construction	Construction		IS/EA Section 2.3.5.4	A biologist approved by the CFWO ("project biologist") will be on site during a) initial clearing and grubbing and b) weekly during project construction within 500 feet of off-site vireo habitat to ensure compliance with all conservation measures. The project biologist will be familiar with the habitats, plants, and wildlife in the project area to ensure that issues related to biological resources

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							<p>are appropriately and lawfully managed. Caltrans will submit the biologist's name, address, telephone number, and work schedule to the CFWO prior to initiating project impacts. The biologist will be provided with a copy of this consultation. The biologist will perform the following duties:</p> <ul style="list-style-type: none"> a. Oversee installation of and inspect the construction fencing and erosion control measures within or upslope of adjacent native habitat areas a minimum of once per week to ensure that any breaks in the fence or erosion control measures are repaired immediately; b. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust; c. Train all contractors and construction personnel on the biological resources associated with the projects and ensure that training is implemented by construction personnel. At a minimum, training will include 1) the purpose for resource protection; 2) a description of the sensitive resources and their habitats; 3) the conservation measures that should be implemented during project construction to conserve the sensitive resources, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); 4) environmentally responsible construction practices; 5) the protocol to resolve conflicts that may arise at any time during the construction process; and 6) the general provisions of the act, the need to adhere to the provisions of the act, and the penalties associated with violating the act; d. Halt work, if necessary, and confer with the CFWO to ensure proper implementation of species and habitat protection measures. The project biologist will report any violation to the CFWO within 24 hours of its occurrence;

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							<p>e. Submit a report (including photographs of impact areas) to Caltrans and the CFWO following clearing of vireo habitat. The report will document that authorized impacts were not exceeded and general compliance with all conditions. The report will specify numbers, locations, and sex of vireos (if observed), observed vireo behavior (especially in relation to project activities), and remedial measures employed to avoid and minimize impacts on vireos. Raw field notes should be available upon request by the CFWO; and</p> <p>f. Submit a final report to the CFWO within 120 days of project completion that includes photographs of habitat areas that were to be avoided and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved. As-built construction drawings, with an overlay of habitat that was affected and avoided, will be provided as well once they have been completed.</p>
Minimization 1.12	Vegetation – Invasive Species	Construction Contractor	Daily as needed during Construction	Construction		IS/EA Section 2.3.6.4	Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential for spreading noxious weeds (before arriving at the site and before leaving).
Minimization 1.13	Vegetation	Construction Contractor	Daily as needed during Construction	Construction		IS/EA Section 2.3.6.4	Trucks with loads carrying vegetation shall be covered, and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.
Mitigation 1-6	Landscaping and Invasive Plants	Caltrans and Construction Contractor	Prior to construction or landscaping activities	PS&E phase or prior to landscaping		IS/EA Section 2.3.6.4	Caltrans will ensure that project landscaping does not include exotic plant species listed on the Cal-IPC Invasive Plant Inventory list. A copy of the complete list can be obtained from Cal-IPC's web site, at http://www.cal-ipc.org .
Minimization 1.14	Cut and Fill Slopes Landscaping	Caltrans, City, and Construction Contractor	Prior to construction or landscaping activities	PS&E or prior to landscaping		IS/EA Section 2.3.6.4	To create a habitat buffer and potential foraging area for vireos in the adjacent habitat, project cut slopes and fill slopes adjacent to Diamond Bar Creek will be revegetated with native upland habitats with similar composition to those within the project study area. The revegetated areas will have temporary irrigation

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							and will be planted with native container plants and seeds. There will be at least 3 years of plant establishment/maintenance on these slopes to control invasive weeds.
Minimization 1.15	Coastal Sage Scrub and Chaparral	Caltrans and Construction Contractor	Once/as necessary during construction/ground-disturbing activities	Construction		IS/EA Section 2.3.6.4	Duff from areas with coastal sage scrub and chaparral will be saved to aid in revegetating slopes with native species.
Minimization 1.16	Rare Plants	Caltrans and Construction Contractor	As necessary during construction/ground-disturbing activities	Construction		IS/EA Section 2.3.6.4	Rare plants will be salvaged where practicable for use in revegetation efforts.
Minimization 1.17	New Landscaping Maintenance	Caltrans and Construction Contractor	Prior to construction and/or landscaping activities	PS&E or prior to landscaping		IS/EA Section 2.3.6.4	Landscaping should not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas, and water runoff from landscaped areas should be directed away from adjacent native habitats and contained and/or treated within the development footprint.
Minimization 1.18	List of Species	Caltrans and Project Biologist	Once prior to landscaping	PS&E and Prior to landscaping		IS/EA Section 2.3.6.4	Caltrans will submit a draft list of species to be included in the landscaping to the CFWO for approval. Caltrans will submit to the CFWO the final list of species to be included in the landscaping within 30 days of receiving approval of the draft list of species.
CULTURAL RESOURCES							
Minimization 2.1	Archaeological Data Recovery Coordination	Construction Contractor and Archaeologist	Daily as needed during excavation and ground-disturbing activities	Construction		IS/EA Section 2.1.7.4	If buried cultural resources, such as flaked or ground stone, historic debris, building foundations, or non-human bone, are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. If required, recovery of significant

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							archaeological deposits shall occur using standard archaeological techniques, including manual or mechanical excavations, monitoring, soils testing, photography, mapping, or drawing to adequately recover the scientifically consequential information from and about the archaeological resource. If, during cultural resources monitoring, the qualified archaeologist determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist shall specify that monitoring be reduced or eliminated.
Mitigation 2-1	Unearth Human Remains/Cultural Materials Provisions	Construction Contractor, Archaeologist, Coroner, and NAHC	As needed in the event that human remains are unearthed	Construction		IS/EA Section 2.1.7.4; State Health and Safety Code Section 7050.5; PRC Section 5097.98	Although no formal cemeteries or other places of human internment are known to exist within the project area, if human remains are exposed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Construction must halt in the area of the discovery of human remains, the area must be protected, and consultation and treatment must occur as prescribed by law. If the coroner determines the remains to be Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours. If Native American human remains are discovered during project construction, it will be necessary to comply with state laws relating to the disposition of Native American burials, which are under the jurisdiction of the NAHC (PRC Section 5097.98). For remains of Native American origin, no further excavation or disturbance shall take place until the most likely descendant of the deceased Native American(s) has made a recommendation to the landowner or the person responsible for the excavation work regarding means of treating or disposing of the human remains and any associated grave goods, with appropriate dignity, as provided in the PRC Section 5097.98, or the NAHC is unable to identify a most likely descendant or the descendant fails to make a recommendation within 48 hours after being notified by the commission. In consultation with the most likely descendant, the project archaeologist

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							and the project proponent will determine a course of action regarding preservation or excavation of Native American human remains, and this recommendation will be implemented expeditiously. If a most likely descendent cannot be located or does not make a recommendation, the project archaeologist and the project proponent will determine a course of action regarding preservation or excavation of Native American human remains, which will be submitted to the NAHC for review prior to implementation.
PALEONTOLOGY							
Minimization 3.1	Unexpected Discovery Provisions	Construction Contractor and Paleontologist	As needed in the event that paleontological resources are discovered	Construction		IS/EA Section 2.2.4.4	If paleontological resources are discovered during ground-disturbing activities, work shall stop within 50 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures may include further monitoring by a qualified paleontologist during the remaining construction-related ground-disturbing activities. The qualified paleontological monitor shall retain the option of reducing monitoring if, in his or her professional opinion, the sediments being monitored were previously disturbed. Monitoring may also be reduced if the potentially fossiliferous units, previously described, are not present or, if present, are determined by qualified paleontological personnel to have a low potential to contain fossil resources. The monitor shall be equipped to salvage fossils and samples of sediments as they are unearthed to avoid construction delays and empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Recovered specimens shall be prepared to a point of identification and permanent preservation, including the washing of sediments to recover small invertebrates and vertebrates. Specimens shall be curated into a professional, accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, shall be prepared, which will signify completion of the program to mitigate impacts on paleontological resources.

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COMMUNITY/ SOCIAL IMPACTS							
Mitigation 4-1	Relocation and Real Property Acquisition Impacts	City of Industry and City of Diamond Bar	Once during design plan check/approval or construction	Final PS&E and Construction		IS/EA Section 2.1.3.2; Uniform Fire Code	After closure of the driveway from Grand Avenue, if it is determined that the remaining access points would be inadequate per emergency fire code standards, additional access would be provided from Old Brea Canyon Road, and a mountable curb for emergency vehicle access from Grand Avenue could be constructed.
Minimization 4.1	Community outreach activities during construction	City of Industry and Caltrans	Weekly/as needed during construction	Construction		IS/EA Section 2.1.3.1	Develop and implement a community outreach and public involvement program to inform the community about project construction activities.
Minimization 4.2	Construction Management Program	Engineer and Construction Contractor	Once prior to construction/as needed during construction	Final PS&E and Construction		IS/EA Section 2.1.3.1	Develop and implement a construction management program that maintains access to and from the project area through signage, detours, flagmen, etc.
Minimization 4.3	Emergency Response Routes	Engineer and Construction Contractor	Once prior to construction/as needed during construction	Final PS&E and Construction		IS/EA Section 2.1.3.1	Coordinate with emergency services providers to ensure that alternative response routes to and from the project area are in place during construction of the proposed project.
Minimization 4.4	Fire Department Access during Construction	Engineer and Construction Contractor	Once prior to construction/as needed during construction	Final PS&E and Construction		IS/EA Section 2.1.3.1	Provide access to all fire hydrants along all access routes, and provide and maintain fire department vehicle access roads to the project site.
Minimization 4.5	Safe Routes to School	City of Industry, Engineer, and Construction Contractor	Once prior to construction/as needed during construction	Final PS&E and Construction		IS/EA Section 2.1.3.1	Even though the proposed project site is not located along a corridor that is normally walked by schoolchildren, consult with local school officials to identify safe vehicular routes for students traveling to and from schools in the project area during construction of the proposed project.
Minimization 4.6	Utilities	City of Industry, Engineer, and Construction Contractor	Prior to construction	Final PS&E; prior to construction/ground disturbing activities		IS/EA Section 2.1.3.1	Coordinate with utility providers regarding relocation of utility lines, and inform utility users in advance about the date and timing of service disruptions.

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AIR QUALITY							
Minimization 5.1	Dust Control and other Best Management Practices	Engineer; Construction Contractor	Once prior to construction/as needed during construction	Final PS&E and Construction	SSP#': 7-1.01F; 10; 18	IS/EA Section 2.2.6.4	<p>To control the generation of construction-related PM10 emissions, the project applicant will follow Caltrans Standard Specification Sections 7-1.01F, 10, and 18. Section 7, Legal Relations and Responsibility, addresses the contractor's responsibility for many items of concern, such as air pollution; the protection of lakes, streams, reservoirs, and other water bodies; the use of pesticides; safety, sanitation, and convenience of the public; and damage or injury to any person or property as a result of any construction. Section 7-1.01F specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Section 10 defines dust control measures, provided below (if dust palliative materials other than water are to be used, material specifications are contained in Section 18) (California Department of Transportation 2006a).</p> <ul style="list-style-type: none"> • Water for use in the work shall, at the option of the contractor, be potable or nonpotable. Nonpotable water shall consist of reclaimed wastewater or nonpotable water developed from other sources. • If the contractor uses reclaimed wastewater in the work, the sources and discharge of reclaimed wastewater shall meet the California Department of Health Services water reclamation criteria and the RWQCB requirements. The contractor shall obtain either a wastewater discharge permit or a waiver from the RWQCB. Copies of permits or waivers from the RWQCB shall be delivered to the engineer before using reclaimed wastewater in the work. • Nonpotable water used in the mixing and curing of concrete shall conform to the provisions in Section 90 2.03, Water. • Nonpotable water, if used, shall not be conveyed in tanks or drain pipes that will be used to convey potable water. There shall be no connection between nonpotable water supplies and potable

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							<p>water supplies. Nonpotable water supply, tanks, pipes, and any other conveyances of nonpotable water shall be labeled:</p> <p style="text-align: center;">NONPOTABLE WATER DO NOT DRINK</p> <ul style="list-style-type: none"> • Water shall be applied in the amounts, at the locations, and for the purposes designated in the special provisions and in these specifications and as ordered by the engineer • Water for compacting embankment, subbase, base, and surfacing material as well as laying dust shall be applied by means of pressure type distributors or pipe lines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water. • Equipment used for the application of water shall be equipped with a positive means of shut off. • Unless otherwise permitted by the engineer or unless all the water is applied by means of pipe lines, at least one mobile unit with a minimum capacity of 1,000 gallons shall be available for applying water on the project at all times. • If the contractor elects to do so, chemical additives may be used in water for compaction. If chemical additives are used, furnishing and applying the additives shall be at the contractor's expense. • The right is reserved by the engineer to prohibit the use of a particular type of additive, designate the locations where a particular type of additive may not be used, or limit the amount of a particular type of additive to be used at certain locations if the engineer has reasonable grounds for believing that such use will in any way be detrimental.
Minimization 5.2	Fugitive Dust	Engineer; Construction Contractor	Once prior to construction/as needed during construction	Final PS&E and Construction		IS/EA Section 2.2.6.4; SCAQMD's Rule 403	To control the generation of construction-related fugitive dust emissions, construction contractors shall comply with SCAQMD's Rule 403 requirements, which are summarized in Table 2-28 of the IS/EA document.

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Minimization 5.3	Equipment Specifications	Construction Contractor	Weekly/as needed during construction	Construction		IS/EA Section 2.2.6.4	The construction contractor shall be required to implement measures to reduce construction-related exhaust emissions below significant levels. Such measures could include maintaining properly tuned engines; minimizing the idling time of diesel-powered construction equipment to 2 minutes; using alternative-fuel-powered construction equipment (i.e., compressed natural gas, biodiesel, electric); using add-on mitigation devices, such as diesel oxidation catalysts or particulate filters; using equipment that meets ARB's most recent certification standard for off-road heavy-duty diesel engines; phasing project construction; or limiting operating hours for heavy-duty equipment.
HAZARDOUS MATERIALS INVESTIGATION/ TREATMENT							
Minimization 6.1	Hazardous Waste Clearance Affecting Advertising	City of Industry; Caltrans; and Construction Contractor	Once before commencing Construction	Prior to Construction		IS/EA Section 2.2.5.4	Contractors excavating, transporting, or stockpiling soil shall prepare a Lead Compliance Plan in accordance with the Caltrans Code of Safety Practices, California Code of Regulations and Cal-OSHA standards addressing the presence of ADL in the soils within the project area.
Minimization 6.2	ADL Issues and Provisions (ADL Content Testing Report)	City of Industry; Caltrans; and Engineer	As needed prior to and during construction	Construction		IS/EA Section 2.2.5.4	Lead testing results contained in the ADL Content Testing Report shall be provided to contractors handling on-site soils during construction.
Minimization 6.3	Road Striping Paint Lead Provisions	Construction Engineer and Contractor	As needed per the occurrence of removal of the traffic stripes	Construction		IS/EA Section 2.2.5.4	Should construction activities result in the removal of yellow paint or thermoplastic traffic stripes, the age of the traffic striping shall be determined. If lead and/or chromium are present in the materials at or above hazardous waste levels, the materials shall be disposed at a permitted Class I disposal facility in California.
Minimization 6.4	Appropriate Lead Compliance Plan	Engineer and Construction Contractor	Once before commencing Construction	Final PS&E/prior to the start of construction		IS/EA Section 2.2.5.4; CCR, Title 8, Section 1532.1	In addition, a project-specific Lead Compliance Plan shall be developed to prevent or minimize worker exposure to lead while handling materials containing lead. Attention shall be directed to California Code of Regulations, Title 8, Section 1532.1, Lead, for specific

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							California Occupational Safety and Health Administration (Cal/OSHA) requirements when working with lead.
Minimization 6.5	Transformer/High-Voltage Power Box Relocation	Engineer, Construction Contractor, and local utility purveyor	Every time a transformer and/or high-voltage power box must be relocated	Construction		IS/EA Section 2.2.5.4	Transformer and/or high-voltage power box relocation during site construction/demolition shall be under the purview of the local utility purveyor to identify proper handling procedures regarding PCBs.
Minimization 6.6	Polychlorinated biphenyls (PCBs) and Soil	Construction Engineer and Contractor	Once before ground-disturbing and excavation activities; Weekly/as needed during any ground-disturbing and excavation activities	Construction		IS/EA Section 2.2.5.4	Should an on-site transformer (one that may be required to be relocated as part of the project) be located over bare soil, the underlying soil shall be sampled by a qualified hazardous materials specialist during the construction phase, both prior to and during any excavation or other ground-disturbing activities.
Minimization 6.7	Groundwater Encounter due to Dewatering	Construction Engineer and Contractor	Once per new site where groundwater is encountered	Construction		IS/EA Section 2.2.5.4	Should construction require dewatering, resulting in groundwater being encountered on site, a qualified hazardous materials consultant with Phase II and Phase III experience shall review all available files for the addresses listed in Subsection 2.2.5.2, Affected Environment, prior to beginning construction.
CONSTRUCTION MEASURES FOR GEOLOGY							
Minimization 7.1	Seismic/Ground Shaking	Engineer	Once during Final PS&E or Final design check	Final PS&E		IS/EA Section 2.2.3.4	The project shall comply with local and state building codes, such as Caltrans' Seismic Design Criteria, to ensure that damage in a large earthquake event is minimized.
Minimization 7.2	Liquefaction/Settlement	Construction Engineer and Contractor	Weekly/as needed prior to and during ground-disturbing activities	Construction		IS/EA Section 2.2.3.4	Ground improvement methods, such as soil densification and/or dewatering, shall be implemented as needed to reduce liquefaction and settlement impacts.

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Minimization 7.3	Landslide	Construction Engineer and Contractor	As needed during ground-disturbing activities	Construction		IS/EA Section 2.2.3.4	Stabilizing measures, such as constructing sediment diversion or collection devices, shall be implemented as needed to reduce landslide impacts.
Mitigation 7-1	Excavation in Native Soils	Project Geologist and Geotechnical Engineer	Weekly/as needed prior to and during excavation activities	Construction		IS/EA Section 2.2.3.4	To reduce the potential for localized slope failures during construction, the locations of excavations in native soils shall be evaluated by the project geologist and geotechnical engineer prior to and during construction.
Minimization 7.4	Dewatering	Construction Engineer and Contractor	Once every time excavation into the water-bearing zone is required	Construction		IS/EA Section 2.2.3.4	Areas where excavation into the water-bearing zone is required shall be temporarily dewatered.
Minimization 7.5	Excavation Walls	Project Geotechnical Engineer and Construction Contractor	As needed prior to and during excavation activities	Construction		IS/EA Section 2.2.3.4	Excavation walls shall be flattened to safe gradients.
Minimization 7.6	Shoring excavation walls	Project Geotechnical Engineer and Construction Contractor	As needed prior to and during excavation activities	Construction		IS/EA Section 2.2.3.4	In areas where bedding is adversely oriented, the walls of the excavation shall be shored, with shoring that has been designed to withstand additional loads, or the walls of the excavation shall be flattened to a gradient that is slightly flatter than the dip of the bedding.
Minimization 7.7	Excavation Spoils	Project Geotechnical Engineer and Construction Contractor	As needed during excavation activities	Construction		IS/EA Section 2.2.3.4	Excavation spoils shall not be placed immediately adjacent to the excavation walls unless the excavation is shored to support the added load.
Minimization 7.8	Cut and Fill	Project Geotechnical Engineer and Construction Contractor	As needed prior to and during excavation activities	Construction		IS/EA Section 2.2.3.4	Excavations shall be cut and backfilled in sections to reduce the potential for slope failure.
Minimization 7.9	Temporary Excavation	Construction Contractor	Ongoing during temporary excavations	Construction		IS/EA Section 2.2.3.4	Temporary excavations shall not be left open for long periods of time.

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Minimization 7.10	Groundwater	Project Engineer	Once during Final PS&E or Final design check	Final PS&E		IS/EA Section 2.2.3.4	The groundwater elevation shall be confirmed by the site-specific geotechnical field investigation, which would be conducted during the plans, specifications, and estimate stage of the project.
Minimization 7.11	Slope Erosion	Project Engineer and Construction Contractor	Once during Final PS&E and once during construction	Final PS&E and Construction		IS/EA Section 2.2.3.4	Slopes shall be landscaped or terraced to minimize the velocity attained by runoff.
Minimization 7.12	Berms/V-ditches	Project Engineer and Construction Contractor	Once during Final PS&E and once during construction	Final PS&E and Construction		IS/EA Section 2.2.3.4	Berms or v-ditches shall be placed at the tops of slopes.
Minimization 7.13	Storm Drains	Project Engineer and Construction Contractor	Once during Final PS&E and once during construction	Final PS&E and Construction		IS/EA Section 2.2.3.4	Adequate storm drain systems shall be installed.
Minimization 7.14	Graded Bare Slopes	Project Engineer and Construction Contractor	Ongoing while there are graded, bare slopes during construction	Construction		IS/EA Section 2.2.3.4	Graded slopes shall be sprayed with polymers, or other temporary measures may be taken, to protect them until landscaping is established.
Minimization 7.15	Temporary Erosion-Control Measures	Project Engineer and Construction Contractor	Once during Final PS&E and ongoing during grading activities	Final PS&E and Construction		IS/EA Section 2.2.3.4	Temporary erosion-control measures shall be provided during the grading phase as required by current grading codes, which typically include temporary catchment basins and/or sandbagging to control runoff and contain sediment transport within the project site.
WATER QUALITY REQUIREMENTS							
Minimization 8.1	Water Quality BMPs	City of Industry and Caltrans during Final Design/ Resident Engineer and Contractor during Construction	Once during final PS&E; Prior to and during all grading and ground-disturbing activities	Final PS&E and Construction		IS/EA Section 2.2.2.4; Caltrans Stormwater Quality Handbook – Project Planning and Design Guide	To ensure that pollutants do not affect water quality, the proposed project shall include the appropriate design, implementation, and maintenance BMPs, as defined in Caltrans' Stormwater Quality Handbook – Project Planning and Design Guide. Incorporation of these BMPs would ensure that the project would avoid adverse impacts on surface water quality.

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Mitigation 8-1	Stormwater Runoff Treatment	City of Industry and Caltrans during Final Design/ Resident Engineer and Contractor during Construction	Once during final PS&E; Prior to and during all grading and ground-disturbing activities	Final PS&E and Construction		IS/EA Section 2.2.2.4	Currently, stormwater runoff from within the project limits is untreated. As part of the proposed project, structural treatment-control BMPs shall be implemented to target the anticipated constituents (particulate and dissolved metals, total suspended solids, litter, and biochemical oxygen-demanding substances) of stormwater. Non-stormwater source-control BMPs shall also be incorporated into the project. The structural treatment-control and non-structural source-control BMPs shall be implemented to maximize pollutant treatment where feasible.
Mitigation 8-2	Biofiltration Swale	City of Industry and Caltrans during Final Design/Resident Engineer and Contractor during Construction	Once during final PS&E; Once during construction	Final PS&E and Construction		IS/EA Section 2.2.1.4	A biofiltration swale is proposed along the new on-ramp. The approximate total area, total water quality flow to be treated, the tributary areas, and the design storm flows and water quality flows shall be finalized at the plans, specifications, and estimates phase.
Minimization 8.2	Drain Inlet Stenciling	City of Industry, City of Diamond Bar, Caltrans during Final Design/ Resident Engineer and Contractor during Construction	Once during final PS&E; Once during construction	Final PS&E and Construction		IS/EA Section 2.2.1.4	Stenciling shall be used for proposed inlets in both the City of Industry and the City of Diamond Bar, as recommended by city standards. Specific locations and stencil details shall be provided at the plans, specifications, and estimates phase.

Appendix E Acronyms and Abbreviations

APPENDIX E. ACRONYMS AND ABBREVIATIONS

AB 1493	Assembly Bill 1493
AB 32	Assembly Bill 32
ADA	Americans with Disabilities Act
ADL	aerially deposited lead
ADT	average daily traffic
APE	area of potential effect
APN	assessor's parcel number
ARB	Air Resources Board
ARB Land Use Handbook	Air Quality and Land Use Handbook: A Community Health Perspective
BACMs	Best Available Control Measures
Basin	South Coast Air Basin
BMPs	best management practices
BO	biological opinion
BOD	biochemical oxygen demand
C	General Commercial
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Safety and Health Administration
California CAA	California Clean Air Act of 1988
Cal-IPC	California Invasive Plant Council
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 of 1980
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH ₄	methane
CHP	California Highway Patrol
CIWMB	California Integrated Waste Management Board

CMP	Congestion Management Plan
CNPS	California Native Plant Society
CO	carbon monoxide
CO Protocol	Transportation Project-level Carbon Monoxide Protocol
CO ₂	carbon dioxide
County	Los Angeles County
CRHR	California Register of Historical Resources
CTP	Comprehensive Transportation Plan
CWA	Clean Water Act
dBA	A-weighted decibels
Department	California Department of Transportation
DO	oxygen, dissolved
DOT	Department of Transportation
DSA	Disturbed Soil Area
DWR	Department of Water Resources
EB	eastbound
EMS	emergency medical services
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
GC	Golf Course
Construction General Permit	General Permit for Construction Activities
GHG	greenhouse gas
HCM	Highway Capacity Manual
HFCs	hydrofluorocarbons
HMMP	Habitat Mitigation Monitoring Plan
HOV	high-occupancy vehicle
HPSR	historic property survey report
IBC	Industry Business Center
IPCC	Intergovernmental Panel on Climate Change

ISA	initial site assessment
ITS	Intelligent Transportation Systems
LACFD	Los Angeles County Fire Department
LACM	Los Angeles County Natural History Museum
LACSanD	Los Angeles County Sanitation District
LACSD	Los Angeles County Sherriff's Department
LCP	Lead Compliance Plan
L _{eq} (h)	hourly equivalent sound level
LOS	level of service
M	Industrial Manufacturing
MBAS	methylene blue active substances
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
mg/l	milligrams per liter
MND	mitigated negative declaration
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSAT	mobile-source air toxics
MWD	Metropolitan Water District of Southern California
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NAHC	Native American Heritage Commission
NAICS	North American Industry Classification System
NB	northbound
NEPA	National Environmental Policy Act of 1969
NES-MI	Natural Environment Study – Minimal Impacts
NFL	National Football League
NHPA	National Historic Preservation Act of 1966
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOC	notice of construction
NOCC	notice of completion of construction
NOI	notice of intent

NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
OCTA	Orange County Transportation Authority
PA	Programmatic Agreement
PA/ED	project approval/environmental document
Pb	lead
PBWM	Puente Basin Watermaster
PCBs	polychlorinated biphenyls
PD Overlay	Planned Development Overlay Zone
PFCs	perfluorocarbons
PM10	particulate matter smaller than or equal to 10 microns in diameter
PM2.5	particulate matter smaller than or equal to 2.5 microns in diameter
POAQC	project of air quality concern
PQS	professionally qualified staff
PRC	Public Resources Code
PS&E	plans, specifications, and estimates
RAP	Relocation Assistance Program
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases
RSA	research study area
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	regional water quality control board
SB	southbound
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SF ₆	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SR	State Route

SWDR	Stormwater Data Report
SWIS	Solid Waste Information System
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T&E	threatened and endangered
TASAS	Traffic Accident Surveillance and Analysis System
TDM	Transportation Demand Management
TDS	total dissolved solids
The Gas Company	Southern California Gas Company
TMDL	total maximum daily load
TMP	traffic management plan
TSCA	Toxic Substances Control Act
TSM	Transportation System Management
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
WB	westbound
WPCP	Water Pollution Control Plan
WVWD	Walnut Valley Water District

Appendix F Agency Correspondence Letters

From: [Agustin Barajas](#)
To: [Teresa Tapia](#);
cc: [Gary Iverson](#);
Subject: Fw: Westbound on-ramp at Grand Avenue/SR-60 interchange
Date: Monday, June 08, 2009 2:38:17 PM

Hello Teresa,

Please keep L.A. County Department of Regional Planning informed on any project updates or meetings involving their jurisdiction.

See message below FYI. Thanks.

Agustin Barajas
Associate Environmental Planner
District 7, Division of Environmental Planning

(213)897-7665
Fax (213) 897-2593

----- Forwarded by Agustin Barajas/D07/Caltrans/CAGov on 06/08/2009 02:15 PM -----

**Gary Iverson/D07/Caltrans/
CAGov**

To Agustin Barajas/D07/Caltrans/CAGov@DOT
cc

06/08/2009 01:54 PM

Subject Fw: Westbound on-ramp at Grand Avenue/SR-60 interchange

FYI -

Gary Iverson

"Man has no nobler function than to defend the truth"
- Ruth McKenney

----- Forwarded by Gary Iverson/D07/Caltrans/CAGov on 06/08/2009 01:53 PM -----

"Curzi, Anthony"
<acurzi@planning.lacounty.gov>

To <gary_iverson@dot.ca.gov>,
<jdballas@cityofindustry.org>

cc

06/01/2009 11:14 AM

Subject Westbound on-ramp at Grand Avenue/SR-60
interchange

Gary/John,

We have received your Notice of Initiation of Studies for the proposed westbound on-ramp to SR-57/SR-60 from Grand Avenue in the City of Industry. Please be aware that the Los Angeles County Department of Regional Planning was not notified of the April 21, 2009 meeting at Caltrans District 7 and, therefore, was not present.

Your letter asks if there are any plans for development that would be affected by the proposal. There are two major proposed developments located in Rowland Heights that are a quite a distance from the proposed project. The first, Canyon Residences, is a 775-unit apartment complex project located on approximately 16 acres on Brea Canyon Cutoff Road south of Colima Road. The second project, Dynasty Plaza, is an approximately 485,000 square foot shopping center along with a 52,100 square foot cinema located at 18800 Railroad Street, north of SR-60 and west of Nogales Street. The Notices of Preparation for both these projects are available on our [website](#).

Please keep the County informed of this project and any meetings that may be forthcoming. I hope this information has been helpful, and please feel free to contact me with any questions.

Sincerely,

ANTHONY CURZI

Regional Planning Assistant II

Impact Analysis

Los Angeles County Department Of Regional Planning

320 West Temple Street, Los Angeles, CA 90012

(213) 974-6461

P Please consider the environment before printing this email



City of Diamond Bar

21825 Copley Drive • Diamond Bar, CA 91765-4178

(909) 839-7000 • Fax (909) 861-3117

www.CityofDiamondBar.com

June 22, 2009

Shilpa Trisal, Project Manager
ICF Jones and Stokes
811 West 7th Street
Los Angeles, CA 90017

Subject: Study Initiation for the Westbound Onramp at Grand Avenue/SR-60 Interchange Improvements Project

Dear Ms. Trisal:

Thank you for the opportunity to provide input prior to the initiation of studies under CEQA and NEPA for the above-referenced project. Our comments are provided below.

1. The City of Diamond Bar is in the early stages of amending its sign regulations to allow a freeway-oriented sign on property abutting the southeasterly side of the 57/60 convergence. A likely location for such a sign is the Diamond Bar Golf Course property westerly of Grand Avenue. Although the current interchange study segment does not directly affect this area, we request that design efforts are mindful of the City's need to provide a freeway-visible sign to identify goods and services in Diamond Bar at this key entrance to our city.
2. The former Diamond Bar Honda property will be physically impacted by the improvements to the westbound onramp, Grand Avenue and Old Brea Canyon Road.
 - a. There shall be no net loss of developable acreage in the City of Diamond Bar as a result of interchange improvements that necessitate the acquisition of a portion of the Honda property. Any acquisition of Honda property land shall be replaced at an in-kind or greater ratio with usable acreage abutting the northerly and westerly sides of the Honda property, which shall be deeded to and, if necessary, annexed into the City of Diamond Bar.
 - b. At least one drive approach shall be retained along Grand Avenue to provide access to the Honda Property.

Ron Everett
Mayor

Carol Herrera
Mayor Pro Tem

Wen P. Chang
Council Member

Jack Tanaka
Council Member

Steve Tye
Council Member

3. An aerial photo, labeled Figure 2, was included with the Notice of Initiation of Studies showing the Grand Avenue entrance to the eastbound 57/60 onramp. Presently, there is significant P.M. peak hour stacking of vehicles on Grand Avenue queuing in the northbound right-turn lane to enter this onramp, which at times extends back to the northbound left-turn pockets at Golden Springs. We request that this area be studied for restriping and signalization modifications to accommodate dual right turn lanes at the eastbound 57/60 onramp.

If you have any follow-up questions, please feel free to call me at (909) 839-7065. Again, thank you again for the opportunity to submit our comments at this time. We look forward to working closely with Caltrans and the City of Industry as this project progresses.

Sincerely,



Greg Gubman, AICP
Community Development Director

cc: James DeStefano, City Manager
David Doyle, Assistant City Manager
David Liu, Public Works Director/City Engineer
Rick Yee, Senior Engineer
Ryan McLean, Assistant to the City Manager



U.S. Department
of Transportation
**Federal Highway
Administration**

**Federal Highway Administration
California Division**

March 9, 2011

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (fax)

In Reply Refer To:
HDA-CA
EA 07-25510
RTIP No. LA0D393

Doug Failing, District Director
California Department of Transportation
District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012-3606

Attention: Andrew Yoon, Senior Transportation Engineer

Dear Mr. Yoon:

SUBJECT: Project-Level Conformity Determination for the SR-57/SR-60 Westbound Slip Ramp Project

On February 3, 2011, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a request for the project-level conformity determination for the State Route 57/State Route 60 Westbound Slip Ramp Project in Los Angeles County pursuant to 23 U.S.C. 327(a)(2)(B)(ii)(1). The project is in an area that is designated Nonattainment or Maintenance for Ozone, Particulate Matter (PM₁₀), Fine Particle Particulate Matter (PM_{2.5}), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), and Lead.

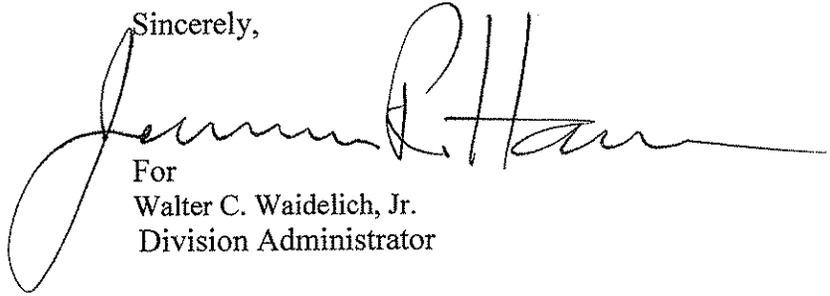
The project-level conformity analysis submitted by Caltrans indicates that the project-level transportation conformity requirements of 40 C.F.R. Part 93 have been met. The project is included in the Southern California Association of Government's (SCAG) *2008 Regional Transportation Plan (RTP)* and the *2011 Regional Transportation Improvement Program (RTIP)*. The FHWA and the Federal Transit Administration (FTA) found the 2011 RTIP and the 2008 RTP through Amendment No. 4 to be conforming on December 14, 2011. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

Based on the information provided, FHWA finds that the project-level conformity determination for the State Route 57/State Route 60 Westbound Slip Ramp Project conforms to the State Implementation Plan (SIP) in accordance with 40 C.F.R. Part 93.



If you have any questions pertaining to this conformity finding, please contact Aimee Kratovil, FHWA Air Quality Specialist, at (916) 498-5866 or by email at Aimee.Kratovil@dot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Walter C. Waidelich, Jr.", written in a cursive style. The signature is positioned to the right of the word "Sincerely," and above the typed name.

For
Walter C. Waidelich, Jr.
Division Administrator

cc: (email)

Gary Iverson, Caltrans, Division of Environmental Planning

Mike Brady, Caltrans HQ

Aimee Kratovil, FHWA

Jermaine Hannon, FHWA

AKratovil/km



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011



In Reply Refer To:
FWS-LA-10B0099-1110269

MAR 09 2011

Paul Caron
Senior District Biologist
Department of Transportation
100 South Main Street, Suite 100
Los Angeles, California 90012-3606

Attention: Eric Hanson, Associate Environmental Planner

Subject: Informal Section 7 Consultation for Westbound On-Ramp at Grand Avenue/State Route 60 Interchange Improvements Project, City of Industry, Los Angeles County, California

Dear Mr. Caron:

This is in response to your correspondence, dated November 22, 2010, requesting our concurrence with your determination that the proposed Westbound On-Ramp at Grand Avenue/State Route 60 Interchange Improvements Project is not likely to adversely affect the federally endangered least Bell's vireo (*Vireo bellii pusillus*, "vireo") in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). The California Department of Transportation (Caltrans) has assumed the Federal Highway Administration's (FHWA) responsibilities under the Act for this consultation in accordance with Sections 6004 and 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) 2005, as described in the National Environmental Policy Act (NEPA) Delegation Pilot Program Memorandum of Understanding between FHWA and Caltrans (effective July 1, 2007) and codified in Renewed 23 U.S.C. 326 and 23 U.S.C. 327.

The City of Industry and City of Diamond Bar ("the Cities") propose to improve the westbound on-ramp at Grand Avenue / State Route 60 (SR-60), in cooperation with Caltrans. The project is located on SR-60 between post mile (PM) R23.87 and PM R24.48, in the City of Industry, Los Angeles County, California. The project will result in the construction of a direct westbound on-ramp to SR-60 at the Grand Avenue Interchange. In addition, a 213-linear-meter (700-linear-foot) retaining wall up to 6 meters (m) [20 feet (ft)] high will be constructed along the north side of the westbound on-ramp and a 1.5 m (5-ft) high retaining wall may be constructed along the existing eastbound SR-60 on-ramp. The project includes the extension of the existing storm drain system and the construction of new inlets along the shoulders. A box culvert extension would be constructed from Old Brea Canyon Road to a new outfall location approximately 91 m (300 ft) downstream. A water quality treatment facility is proposed adjacent to the on-ramp

TAKE PRIDE
IN AMERICA 

requiring a minor relocation of Old Brea Road into the adjacent electrical utility line easement. The project includes the relocation/modification of existing power poles, subsurface power lines, and sewer lines. The project includes modification to existing sign illumination, a traffic monitoring station for the auxiliary lane, new lighting in the ramp gore area, ramp metering construction, relocation of fiber optic communication lines in the shoulder, and modification of existing traffic signals at the eastbound ramp intersection. Construction staging will take place in a disturbed area north of the SR-60/SR-57 connector that has previously been used as a staging area and is owned by the City of Industry.

The vireo is known to occur in the vicinity of the project within habitat along Diamond Bar Creek. Vireos were observed along Diamond Bar Creek in 2008, 2009, and 2010. A nesting pair was located during focused surveys in 2008 (Sage Environmental 2008); a single adult was observed during monitoring in support of geotechnical drilling in 2009 (Ryan Ecological Consulting 2009); and two pairs and an unpaired male were observed during focused surveys in 2010 (Sage Environmental 2010). All of the documented nesting attempts by vireo on the project site have failed. In 2008 a single nest was established in black mustard (*Brassica nigra*) and may have been abandoned due to the unstable structure of the vegetation (Sage Environmental 2008). In 2010, one vireo pair had a single unsuccessful nest attempt, and the second pair had three unsuccessful nest attempts (Sage Environmental 2010). Many brown-headed cowbirds have been observed on the project site and although brood parasitism has not been documented (e.g., Sage Environmental Group 2007, 2008), it is known to be a major source of failure for vireo nests (Franzreb 1989, U.S. Fish and Wildlife Service 1998, Kus 1999, Griffith and Griffith 2000).

The proposed project will permanently impact 0.13 hectares (ha) [0.31 acres (ac)] of California Walnut Woodland and Southern Willow Scrub which provides suitable habitat for the vireo; this includes a 0.02 ha (0.05 ac) area where a rip-rap energy dissipater will be installed, topped with native soil, and planted with native vegetation. There are no temporary impacts to riparian habitats. Vireos have been observed within contiguous habitat directly adjacent to the project impact area. However, the riparian habitat that will be impacted by the project is located on the eastern edge of the patch of riparian habitat within Diamond Bar Creek, in an area where the riparian habitat is sparse, adjacent to both SR-60 and Grand Avenue, and where vireos have not been observed during protocol surveys conducted in 2007, 2008, and 2009.

Caltrans will implement significant conservation measures as part of the project to avoid and minimize potential impacts to the vireo. Caltrans has agreed to remove native vegetation during the non-breeding season to the maximum extent feasible. Due to the project timeline, vegetation clearing may have to extend into the vireo breeding season by several days. Should it be necessary for vegetation clearing to extend into the breeding season, the Project Biologist will coordinate closely with the Carlsbad Fish and Wildlife Office (CFWO) to ensure that the project does not affect vireo breeding. Impacts will be offset through the restoration of 0.26 ha (0.62 ac) of vireo habitat within Diamond Bar Creek downstream of the project impact area. The restoration is anticipated to commence 2012-2013. Thus, we expect no net loss of vireo habitat over the long term. Restoring vireo habitat in remaining habitat patches in Los Angeles County,

such as the area immediately downstream from the project site within Diamond Bar Creek, will support the survival and recovery of the species.

The following conservation measures have been incorporated into the project design to avoid and minimize adverse effects to the vireo:

1. Caltrans will offset permanent impacts to 0.13 ha (0.31 ac) of vireo habitat (including southern willow scrub) through creation of 0.26 ha (0.62 ac) of riparian and wetland vegetation. The habitat creation area is a part of a larger 26-acre creation project that is addressed in consultation FWS-LA-10B0545-10I0723 for the Industry Business Park. The creation area will be permanently conserved and managed in accordance with the requirements of consultation FWS-LA-10B0545-10I0723. The habitat creation/restoration will be conducted in accordance with the Final Habitat Mitigation and Monitoring Program for the Industry Business Center Project, updated June 16, 2009 (HMMP). Prior to impacting vireo habitat within Diamond Bar Creek, Caltrans will submit a map of the specific habitat creation area that will be completed as part of the westbound on-ramp at Grand Avenue/SR-60 Interchange Improvement Project for review and approval to the CFWO. Documentation of the initiation of habitat creation activities for the project will be provided to the CFWO on or prior to December 1, 2013.
2. A biologist approved by the CFWO ("Project Biologist") will be on site during: a) initial clearing and grubbing; and b) weekly during project construction within 152.4 m (500 ft) of offsite vireo habitat to ensure compliance with all conservation measures. The Project Biologist will be familiar with the habitats, plants, and wildlife in the project area to ensure that issues relating to biological resources are appropriately and lawfully managed. Caltrans will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO prior to initiating project impacts. The biologist will be provided with a copy of this consultation. The biologist will perform the following duties:
 - a. Oversee installation of and inspect the construction fencing and erosion control measures within or up-slope of adjacent native habitat areas a minimum of once per week to ensure that any breaks in the fence or erosion control measures are repaired immediately;
 - b. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust;
 - c. Train all contractors and construction personnel on the biological resources associated with the projects and ensure that training is implemented by construction personnel. At a minimum, training will include: 1) the purpose for resource protection; 2) a description of the sensitive resources and their habitats; 3) the conservation measures that should be implemented during project construction to conserve the sensitive resources, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field

- (i.e., avoided areas delineated on maps or on the project site by fencing); 4) environmentally responsible construction practices; 5) the protocol to resolve conflicts that may arise at any time during the construction process; and 6) the general provisions of the Act, the need to adhere to the provisions of the Act, and the penalties associated with violating the Act;
- d. Halt work, if necessary, and confer with the CFWO to ensure the proper implementation of species and habitat protection measures. The Project Biologist will report any violation to the CFWO within 24 hours of its occurrence;
 - e. Submit a report (including photographs of impact areas) to Caltrans and the CFWO following clearing of vireo habitat. The report will document that authorized impacts were not exceeded and general compliance with all conditions. The report will specify numbers, locations, and sex of vireos (if observed), observed vireo behavior (especially in relation to project activities), and remedial measures employed to avoid and minimize impacts to vireos. Raw field notes should be available upon request by the CFWO; and
 - f. Submit a final report to the CFWO within 120 days of project completion that includes: photographs of habitat areas that were to be avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved. As-built construction drawings with an overlay of habitat that was impacted and avoided will be provided as well once they have been completed.
3. Under the supervision of the Project Biologist, the limits of project impacts (including construction staging areas and access routes) will be clearly delineated with bright orange plastic fencing, stakes, flags, or markers that will be installed in a manner that does not impact habitats to be avoided and such that they are clearly visible to personnel on foot and operating heavy equipment. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the CFWO. Any impacts that occur beyond the approved fenced area will be offset in consultation with the CFWO. Temporary construction fencing and markers will be removed upon project completion.
 4. Native vegetation communities will be cleared between September 16 and March 14, which is outside of the vireo breeding season, to the maximum extent feasible. Vegetation clearing is anticipated to take approximately 1 week. Due to the project timeline, vegetation clearing may have to extend into the breeding season by several days. Should it be necessary for vegetation clearing to extend into the breeding season, the Project Biologist will confer daily by phone with the CFWO regarding the status of the vegetation clearing work, and numbers, locations, and sex of vireos (if observed), observed vireo behavior (especially in relation to project activities), and presence of vireo nest building activities, egg incubation activities, or brood rearing activities.

5. Appropriate erosion and siltation controls will be installed prior to the onset of vegetation clearing and be maintained in good repair until the completion of project construction. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.
6. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated disturbed/developed areas. These designated areas will be located in such a manner as to prevent run-off from entering existing native vegetation areas and will be clearly designated on the construction plans.
7. Permanent project lighting will consist of the installation of three new light poles along the gore of the on-ramp. The lighting will be hooded and low voltage to limit light spill into the adjacent Diamond Bar Creek riparian habitat area.
8. Should construction occur within or adjacent to the Diamond Bar Creek riparian corridor during the March 15 to September 15 nesting season, all construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers, and temporary noise barriers with a minimum height of 4.5 m (15 ft) will be installed along the construction footprint boundary adjacent to Diamond Bar Creek.
9. All pile driving for the project that will occur near habitats that support vireos will be conducted between September 16 and March 14 to avoid the vireo breeding season (or sooner than September 16 if the Project Biologist demonstrates to the satisfaction of the CFWO that all nesting is complete) and to minimize construction noise impacts to nesting vireos.
10. Caltrans will ensure that the following conditions will be implemented with regard to project landscaping:
 - a. Caltrans will ensure that project landscaping does not include exotic plant species listed on the California Invasive Plant Council's (Cal-IPC) "Invasive Plant Inventory" list. A copy of the complete list can be obtained from Cal-IPC's web site at <http://www.cal-ipc.org>;
 - b. If invasive weed species are already growing within the project area, special care will be taken during transport, use, and disposal of soils containing invasive weed seeds to ensure that invasive weeds are not spread into new areas by the project. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds;
 - c. To create a habitat buffer and potential foraging area for vireos in the adjacent habitat, project cut slopes and fill slopes adjacent to Diamond Bar Creek will be revegetated with native upland habitats with similar composition to those within the project study

area. The revegetated areas will have temporary irrigation and will be planted with native container plants and seeds. There will be at least 3 years of plant establishment / maintenance on these slopes to control invasive weeds;

- d. Duff from areas with coastal sage scrub and chaparral will be saved to aid in revegetating slopes with native species;
 - e. Rare plants will be salvaged where practicable for use in revegetation efforts;
 - f. Landscaping should not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas, and water runoff from landscaped areas should be directed away from adjacent native habitats and contained and/or treated within the development footprint;
 - g. Caltrans will submit a draft list of species to be included in the landscaping to the CFWO for approval. Caltrans will submit to the CFWO the final list of species to be included in the landscaping within 30 days of receiving approval of the draft list of species.
11. Caltrans will ensure that the following conditions will be implemented during project construction.
- a. Contractors and construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint;
 - b. The project site will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site;
 - c. Pets of project personnel will not be allowed on the project site;
 - d. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will occur within the fenced project impacts limits;
 - e. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures;
 - f. If night work is necessary, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded and directed away from natural habitats;
 - g. Cut and fill will be balanced within the project or the construction contractor will identify the source or disposal location. All spoils and material disposal will be disposed of properly.

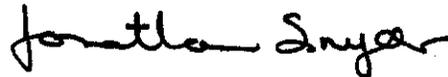
Because the above measures have been incorporated into the project, we concur with your determination that the proposed project is not likely to adversely affect the vireo. We base our concurrence on the following reasons: 1) under the supervision of the Project Biologist, native vegetation removal for the proposed project will be conducted during the non-breeding season to the maximum extent feasible, and should it be necessary for vegetation clearing to extend several days into the breeding season the Project Biologist will coordinate closely with the CFWO to ensure that the project does not affect vireo breeding; 2) construction activities will be modified to limit noise, light, and dust disturbance to vireos as described in the conservation measures above to ensure that vireo breeding activities are not substantially disrupted; 3) the loss of 0.13 ha (0.31 ac) of sparse habitat on the edge of riparian habitat in Diamond Bar Creek is not anticipated to significantly interfere with essential vireo breeding, feeding, and sheltering behaviors. In addition, project impacts to habitat suitable for the vireo will be offset through the restoration of 0.26 ha (0.62 ac) of habitat within Diamond Bar Creek downstream of the project impact area and this restoration of vireo habitat in remaining habitat patches in Los Angeles County will support the survival and recovery of the species.

Therefore, the interagency consultation requirements of section 7 of the Act have been satisfied. Although our concurrence ends informal consultation, obligations under section 7 of the Act shall be reconsidered if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered or this action is subsequently modified in a manner that was not considered in this assessment.

This document does not authorize take under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. §§ 703-712). In order to avoid violation of the MBTA, Caltrans will avoid take of active nests by conducting vegetation removal activities outside of the March 15 to August 15 bird breeding season to the greatest extent feasible. If work must occur during the breeding season, preconstruction nest surveys will be conducted by a qualified biologist. Should nesting birds be present, no work will be conducted in the vicinity of the nest until the young have fledged and will no longer be affected by the project, as determined by the qualified biologist.

Thank you for your coordination on this project. If you have any questions regarding this letter, please contact Sally Brown of this office at (760) 431-9440 x278.

Sincerely,



for Karen A. Goebel
Assistant Field Supervisor

LITERATURE CITED

- Franzreb, K. E. 1989. Ecology and Conservation of the Endangered Least Bell's Vireo. Biological Report 89(1), U.S. Dept. of the Interior, USFWS, Sacramento, California.
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Appendix G Air Quality

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST (\$1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Arterial	0	LA0D393	Existing: GRAND AVENUE/SR 57/60 INTERCHANGE RECONSTRUCTION MODIFY GRAND AVENUE TO ADD ADDITIONAL LANES FOR NH AND SB TRAFFIC, WIDEN THE EXISTING GRAND AVE OVERPASS	Existing: 2009	\$33,000	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: GRAND AVENUE/SR 57/60 INTERCHANGE MODIFICATION: RESTRIPE THE EXISTING GRAND AVE, ADD WB ON-RAMP AND ADD WB AUX LANE, ADD SECOND SB LFT TURN LN AT EB RAMP (09 CFP 3137)	Revised: 2014				
LA	Arterial	0	LA0D441	RECONFIGURATION OF VALLEY BLVD ON-AND-OFF-RAMPS TO THE 605 FREEWAY TO IMPROVE MOBILITY, CIRCULATION, AND RELIEVE THE CURRENT CONGESTION AT VALLEY BLVD.	Existing: 2010 Revised: 2020	\$28,012	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0D446	Existing: AVENUE K GAP CLOSURE FROM 60TH STREET WEST TO SR14. WIDEN GAPS FROM 1 TO 2 LANES OR 3 LANES.	Existing: 2012	\$7,390	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Avenue K Gap Closure From 40th Street West to 60th Street West. Widen Gaps to add an additional lane in each direction (4 lanes total) within the City jurisdiction.	Revised: 2014				

Final 2011 Federal Transportation Improvement Program

Los Angeles County Project Listing State Highway Cost in Thousands

CITY FUNDS		100	2,582	2,682				2,682					2,682
PROP "C25" FUNDS			2,294	2,294				2,294					2,294
LA0D399 Total	2,500	600	13,976	17,076	2,500			4,976	500	9,100			17,076

ProjectID	County	Air Basin	Model	RTP ID		Program	Route	Begin	End	System	Conformity Category		Amendment
LA0D393	Los Angeles	SCAB		1M0104		CAR75	60	23.87	24.48	S	NON-EXEMPT		0
Description:								PTC	17,502	Agency	INDUSTRY		
GRAND AVENUE/SR 57/60 INTERCHANGE MODIFICATION: RESTRIPE THE EXISTING GRAND AVE, ADD WB ON-RAMP AND ADD WB AUX LANE, ADD SECOND SB LFT TURN LN AT EB RAMP (09 CFP 3137)													
Fund		ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
AGENCY			3,287	5,464	8,751			1,051	3,246	4,454			8,751
PROP "C25" FUNDS			3,287	5,464	8,751			1,051	3,246	4,454			8,751
LA0D393 Total			6,574	10,928	17,502			2,102	6,492	8,908			17,502

ProjectID	County	Air Basin	Model	RTP ID		Program	Route	Begin	End	System	Conformity Category		Amendment
LA0D450	Los Angeles	SCAB		1M0104		NCRH3	60	24.5	30.4	S	NON-EXEMPT		0
Description:								PTC	257,900	Agency	INDUSTRY		
RECONSTRUCT SR 60/GRAND AV INTERCHANGE - WIDEN GRAND AV: SB ADD 1THRU LN (2 EXSTNG); NB ADD 1 THRU LN (3 EXSTNG), REPLACE GRAND AV OC, ADD EB LOOP ON-RAMP, ADD TWO BYPASS RAMP CONNECTORS, ADD AUX LNS EB AND WB FROM EAST TO WEST JUNCTION OF THE CONFLUENCE.													
Fund		ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
AGENCY		8,500	9,000	17,500	35,000	7,000		10,500	17,500				35,000
LA0D450 Total		8,500	9,000	17,500	35,000	7,000		10,500	17,500				35,000

ProjectID	County	Air Basin	Model	RTP ID		Program	Route	Begin	End	System	Conformity Category		Amendment
LA0B951	Los Angeles	SCAB		LA0B951		CAR62	71	.5	4.8	S	TCM		0
Description:								PTC	250,000	Agency	CALTRANS		
Route 71: ROUTE 10 TO ROUTE 60 - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE . (2001 CFP 8349, TCRP #50) (EA# 210600, PPNO 2741) (TCRP #50)													
Fund		ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
NATIONAL HWY SYSTEM		1,592			1,592	1,592							1,592
TRAFFIC CONGESTION RELIEF		11,800			11,800	4,800	7,000						11,800
LA0B951 Total		13,392			13,392	6,392	7,000						13,392

ProjectID	County	Air Basin	Model	RTP ID		Program	Route	Begin	End	System	Conformity Category		Amendment
LA0G317	Los Angeles	SCAB		1AL04		STUDY	71	1	3	S	EXEMPT - 93.126		0
Description:								PTC	540	Agency	POMONA		
State Route 71 Expansion from SR 60 to I-10 Pomona CA													
Fund		ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
TRANS AND COMM AND SYS PRESRV PILOT PROG		440			440		440						440
PROP "C20" FUNDS		100			100	100							100
LA0G317 Total		540			540	100	440						540

- ✓ Financial Constraint Analysis
(40 CFR, Section 93.108 and 23 CFR, Section 450.324)
- ✓ Interagency Consultation and Public Involvement Analysis
(40 CFR, Sections 93.105 and 93.112 and 23 CFR, Section 450.324)

SCAG has made the following conformity findings for the 2011 FTIP under the required federal tests:

- ✓ **Consistency with 2008 RTP Test**
Finding: SCAG's 2011 FTIP (project listing) is consistent with the 2008 RTP as previously amended (policies, programs, and projects).
- ✓ **Regional Emissions Tests**
These findings are based on the regional emissions test analyses shown in Tables 14 -26 in Section II of this Technical Appendix.

Finding: The regional emissions analyses for the 2011 FTIP update the regional emissions analyses for the 2008 FTIP and the 2008 RTP as previously amended.

Finding: The 2011 FTIP regional emissions analysis for PM_{2.5} and its precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in the SCAB.

Finding: The 2011 FTIP regional emissions analysis for PM_{2.5} and its precursors meet the interim emission test (build/no-build test) for all milestone, attainment, and planning horizon years in the SSAB (urbanized area of Imperial County portion)¹.

Finding: The 2011 FTIP regional emissions for the Ozone precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years for the SCAB, SCCAB (Ventura County), Western MDAB (Antelope Valley and San Bernardino County portion excluding Searles Valley), SSAB (Coachella Valley and Imperial County portions).

Finding: The 2011 FTIP regional emissions for NO₂ meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in the SCAB.

Finding: The 2011 FTIP regional emissions for CO meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in SCAB.

Finding: The 2011 FTIP regional emissions for PM₁₀ and its precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in SCAB and the SSAB (Coachella Valley).

¹ The conformity re-determination for the 2006 PM_{2.5} NAAQS is required to be federally approved by December 14, 2010. The documentation for the PM_{2.5} conformity re-determination is scheduled to be brought to the SCAG's Regional Council for adoption in July 2010. The Imperial County PM_{2.5} emission test finding is included for information purpose until FHWA/FTA has approved the conformity re-determination.

LOS ANGELES COUNTY

Modeled Projects

LOS ANGELES COUNTY - COMPREHENSIVE MODELING LISTING

CD	SYS	LEAD AGENCY	RTP ID	FTIP ID	RTE	BEG PM	END PM	STREET	FROM	TO	DESCRIPTION	ADDITIONAL DETAILS, IF AVAILABLE	2008 RTIP	NO BUILD	NETWORK YR. (PROJECT COMPLETION BY)**													
													2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020			
LA	S	CALTRANS	LA08875	LA08875	10	37.5	42.4	I-10	CITRUS	ROUTE 57/210	I-10 FROM CITRUS TO ROUTE 57/210 ONE HOV LANE IN EACH DIRECTION - P.E ONLY (EA# 11934, PPN# 0310B)	I-10 - CONSTRUCT ONE HOV LANE IN EACH DIRECTION FROM CITRUS AVENUE TO 10/57/210 INTERCHANGE																
LA	S	CALTRANS	LA962201	LA962201	14	24.3	27.1	SR-14	ROUTE 57	ROUTE 126	NEAR SANTA CLARITA, FROM RT 5 TO 126/S F. RD HOV PROJECT - ADD 1 HOV LN EACH DIR (EA# 119843, PPN# 0380C)	ADD 1 HOV IN EACH DIRECTION																
LA	S	CALTRANS	LA01348	LA01348	14	44.0	54.5	SR-14	ESCONDIDO CANYON ROAD	MOUNTAIN SPRING ROAD	NEAR PALMDALE FROM ESCONDIDO CYN RD TO MOUNTAIN SPRING ROAD, WIDEN FWY FOR ONE HOV IN EACH DIRECTION (EA-117101, PPN# 0389N)	WIDEN FWY FOR ONE HOV IN EACH DIRECTION																
LA	S	CALTRANS	LA01347	LA01347	14	53.8	60.7	SR-14	VINCENT RAMP UC	AVENUE P-8	RT 14 FROM VINCENT RAMP UC TO AVE P-8 HOV LANES (4 TO 6 LANES)(2001 CFP#0348) (EA # 125201, PPN# 0391A)	ADD 1 HOV IN EACH DIRECTION. NOTE CHGD BEGINNING LIMIT NAME BUT SAME POST MILES																
LA	S	LOS ANGELES COUNTY MTA	1M0101		14	60.7	65.7	SR-14	Ave P-8	Ave L	ADD 1 HOV LANE EACH DIRECTION ON THE SR-14 FROM AVE P-8 TO AVE L																	
LA	S	LANCASTER	LA0C8102	LA0C8102	14	88.9	0.0	AVE I	AT ROUTE 14 INTERCHANGE		SR-14 FREEWAY AVENUE INTERCHANGE IMPROVEMENTS-WIDENING AVE I FROM 2 TO 3 LANES IN EACH DIRECTION, ADDING DUAL LEFT TURN LANES, AND WIDENING A BRIDGE STRUCTURE PPN# 3123	WIDEN FROM 2 TO 3 LANES IN EACH DIRECTION AND WIDEN BRIDGE																
LA	S	ALAMEDA TRANSPORTATION CORRIDOR AGENCY	LA0D45 (Part 1 of 2)	LA0D45 (Part 1 of 2)	47	2.7	5.8	SR-47 EXPRESSWAY	OCEAN BLVD	ALAMEDA STREET	SR-47 EXPRESSWAY - SCHUYLER HEM BRIDGE REPLACEMENT (2 MP + 1 AUX NB, 3 MP + 1 AUX SB), CONSTRUCT NEW LIMITED ACCESS, GRADE SEPARATED EXPRESSWAY (4 TO 7 LNS) ALONG NEW ALIGNMENT FROM OCEAN BLVD TO ALAMEDA ST/PCH	BRIDGE REPLACEMENT AND ELEVATED EXPRESSWAY																
LA	S	ALAMEDA TRANSPORTATION CORRIDOR AGENCY	LA0D45 (Part 2 of 2)	LA0D45 (Part 2 of 2)	47	2.7	5.8	SR-47 EXPRESSWAY	OCEAN BLVD		SR-47 EXPRESSWAY - CONSTRUCT NEW 2-LANE FLYOVER FROM EB OCEAN BLVD (1 200 METERS W/O OCEAN BLVD) SR-47 INTERSECTION) TO NB SR-47 (AT THE NEW BRIDGE)	NEW 2-LANE FLYOVER FROM EB OCEAN BLVD TO NB SR-47																
LA	S	CALTRANS	LA996137	LA996137	60	11.7	23.0	SR-60	ROUTE 605	BREA CANYON ROAD	RTE 60 HOV LNS FROM RTE 605 TO BREA CANYON RD -- CONSTRUCT ONE HOV LANE IN EACH DIRECTION (CFP 358, 4262, 6137-67 150+HIP 5.100) (EA#129410, 129421, PPN# 0482R, 0482RA)	ADD 1 HOV IN EACH DIRECTION																
LA	S	INDUSTRY	LA0D399	LA0D399	60	21.5	23.0	SR-60 AT LEMON AVE INTERSECTION	SR-60 AT LEMON AVE INTERSECTION	SR-60 AT LEMON AVE INTERSECTION	CONSTRUCTION OF NEW PARTIAL DIAMOND INTERCHANGE AT LEMON AVE - EB/WB OFF 2 LNS EB/WB ON 2 LNS (1 IS HOV) (SAFETA-LU # 587)	CONSTRUCT EB OFF-RAMP WITH 2 LANES, EB-ON RAMP WITH 2 LANES (1 IS HOV), WB-ON-RAMP WITH 2 LANES (1 IS HOV) AND WB-OFF-RAMP WITH 2 THRU LANES PER DIRECTION																
LA	S	CALTRANS	12570	12570	60	22.4	25.0	SR-57/SR-60 CONNECTOR	OLD BREA CANYON ROAD	GRAND AVENUE	RTE 57/60 HOV CONNECTOR INDUSTRY FROM OLD BREA CANYON ROAD TO GRAND AVENUE - HOV DIRECT CONNECTORS AND COLLECTOR ROAD (BOTH DIRECTIONS) (EA# 12570, PPN# 0499Q)	ADD HOV DIRECT CONNECTORS AND COLLECTOR ROAD BOTH DIRECTIONS																
LA	S	INDUSTRY	LA0D393	LA0D393				GRAND AVENUE	ST 57/60		GRAND AVENUE/SR 57/60 INTERCHANGE MODIFICATION - RESTRIPE THE EXISTING GRAND AVE, ADD WB ON-RAMP AND ADD WB AUX LANE, ADD SECOND SB LEFT TURN LN AT EB RAMP	CONSTRUCTING AN AUXILIARY LANE FROM THE NEW GRANT AVE WESTBOUND ON-RAMP TO THE SR-60 BYPASS CONNECTOR (WEST OF GRAND AVENUE)																
LA	S	LOS ANGELES COUNTY MTA	1M0104		60	23.6	25.5	SR-57/SR-60			SR-57/SR-60 INTERCHANGE IMPROVEMENT (MAY INCLUDE THE CONSTRUCTION OF HOV DROP RAMPS AT GRAND AVE (RTP ID 180462))																	
LA	S	CALTRANS	LA08951	LA08951	71	0.5	4.8	SR-71	I-10	Mission Blvd	ROUTE 71, ROUTE 101 TO ROUTE 60 - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE	ADD 1 HOV AND 1 MIXED FLOW IN EACH DIRECTION																
LA	S	CALTRANS	1M1001		71	0.5	4.8	SR-71	Mission Blvd	SR-60	MISSION TO RTE 60 - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE (2001 CFP #349, TRP #50) (EA# 210660, PPN# 2741) SAFETA-LU # 3771	ADD 1 HOV AND 1 MIXED FLOW IN EACH DIRECTION																
LA	S	CALTRANS	16931	16931	90	1.2	1.8	SR-90	MINDANAO WAY	CULVER BLVD	IN MAR VISTA FROM MINDANAO WAY TO CULVER BOULEVARD - CONSTRUCT UNDER-CROSSING, WIDEN CULVER BOULEVARD FROM 6 TO 8 LANES, AND MODIFY RAMPS (DREAMWORKS) (EA# 1693C, PPN# 2012A) 3543	WIDEN CULVER BLVD FROM 6 TO 8 LANES AND CONSTRUCT UNDERCROSSING																
LA	S	CALTRANS	16932	16932	90	1.8	1.8	SR-90	AT CENTINELA AVENUE INTERCHANGE		IN MAR VISTA AT CENTINELA AVENUE INTERCHANGE - MODIFY SIGNALS, WIDEN OFF RAMPS FROM 2 TO 3 LANES, AND RESTRIPE CENTINELA AVENUE (EA# 1693A, PPN# 2012B)	WIDEN OFF RAMPS FROM 2 TO 3 LANES																
LA	S	CALTRANS	LA98STIP4	LA98STIP4	101	0.4	0.9	US-101	LOS ANGELES STREET	CENTER STREET	RT 101 SB IMPRVMENTS FROM LA ST TO CENTER ST ELIMNATE HEWITT ST ON/OFF RAMPS & VIGNES OFF RAMP - ADD NEW ON RAMP AT GAREY ST EA 19901, 119911, PPN# 0567P (AB3090REP #22599)	ELIMINATE HEWITT STREET ON/OFF RAMPS AND VIGNES OFF RAMP																
LA	S	LOS ANGELES COUNTY MTA	1M0602		101	10.2	10.8	US-101	AT UNIVERSAL TERRACE PARKWAY		US-101/UNIVERSAL TERRACE PARKWAY (CAMPO DE CAHUENGA WAY) INTERCHANGE IMPROVEMENTS	- Relocate right-turn-in-only southbound US-101 on-ramp from Ventura Boulevard east of Fruitland Drive to intersection of Fruitland Drive and Ventura Boulevard. Add signal and stripe eastbound left-turn lane, to access US-101 southbound. - Add US-101 southbound off-ramp to Ventura Boulevard at relocated Ventura Boulevard and Fruitland Drive intersection. - Add US-101 southbound on-ramp from Universal Terrace Drive to connect with the relocated Fruitland Drive on-ramp. Widen US-101 bridge at Lankershim Boulevard. - Add right-turn pocket to existing US-101 northbound off-ramp at Universal Terrace Parkway. - Modify signal at US-101 and Universal Terrace Parkway intersection to allow all movements.																

RTIP ID# LA0D393				
TCWG Consideration Date (date to be presented at the TCWG) December 1, 2009				
Project Description (clearly describe project) The proposed project would construct a direct westbound on-ramp to State Route 60 (SR-60) at the Grand Avenue interchange, which is located in the City of Industry, Los Angeles County. Specifically, the proposed project would add a direct on-ramp to westbound SR-60 from southbound Grand Avenue, widen Grand Avenue to accommodate an additional right-turn lane to the westbound on-ramp, remove the raised concrete median to provide a second left-turn lane to the eastbound on-ramp, eliminate existing nonstandard designs, and add an auxiliary lane at the SR-60/Grand Avenue interchange. The new westbound SR 60 auxiliary lane would connect the new WB on-ramp to an existing add lane on the SR 60 bypass connector for a total length of 1,600'. The proposed project would occur along the SR-60 Post Mile (PM) R23.87 and PM R24.48.				
Type of Project (use Table 1 on instruction sheet) New Interchange				
County Los Angeles	Narrative Location/Route & Postmiles The proposed project is located at the Grand Avenue interchange with SR-57/60, which is located in the City of Industry, Los Angeles County. The proposed project would occur along the SR-60 Post Mile (PM) R23.87 and PM R24.48. Caltrans Projects – EA#255100			
Lead Agency: California Department of Transportation (Caltrans) District 7				
Contact Person Andrew Yoon	Phone# (213) 897 - 6117	Fax# (213) 897-1634	Email andrew.yoon@dot.ca.gov	
Hot Spot Pollutant of Concern (check one or both) PM2.5 X			PM10 X	
Federal Action for which Project-Level PM Conformity is Needed (check appropriate box)				
Categorical Exclusion (NEPA)	<input checked="" type="checkbox"/> EA or Draft EIS	<input type="checkbox"/> FONSI or Final EIS	<input type="checkbox"/> PS&E or Construction	<input type="checkbox"/> Other
Scheduled Date of Federal Action: March 2010				
NEPA Delegation – Project Type (check appropriate box)				
<input type="checkbox"/> Excluded	<input type="checkbox"/> Section 6004 –NEPA Categorical Exclusions (CEs)	<input checked="" type="checkbox"/> Section 6005 – All NEPA document types (i.e. CEs, EAs, EIS)		
Current Programming Dates (as appropriate)				
	PE/Environmental	ENG	ROW	CON
Start	May 2009	January 2010	May 2010	July 2011
End	March 2010	March 2011	March 2011	July 2012

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

The proposed project is needed to improve the operational deficiencies of the Grand Avenue interchange and the State Route 57 (SR-57)/SR-60 freeway corridor at this location to accommodate existing and projected traffic volumes at an acceptable level of service through 2035.

The purpose of the proposed project is to meet the following four primary objectives:

- Improve traffic operations on Grand Avenue from Baker Parkway to the interchange at SR-60,
- Increase capacity at the Grand Avenue interchange,
- Reduce mainline traffic weaving between Grand Avenue and the SR-57/SR-60 interchange, and
- Improve safety along Grand Avenue.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

The area surrounding the project site consists primarily of open space to the north, northwest and recreational uses (golf course) to the southwest, to the south, and partially to the east, and business uses to the west. The business uses to the northwest of the interchange consist of a fast-food restaurant, located west of Grand Avenue, and a former auto dealership that is no longer in business, also located west of Grand Avenue. The nearest residences are located approximately one-half mile northeast and east of the project area. Please refer to the attached figure of the proposed project location and surrounding land uses.

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Opening-Year ADT

Postmile	Segment	2013 No Project	2013 No Project Truck ADT	2013 With Project	2013 With Project Truck ADT
SR-60 Freeway¹					
22.97	Diamond Bar & Brea Canyon Road Interchange	223,000	20,070	223,000	20,070
23.56	Diamond Bar (JCT/Route 57 South) & Orange Freeway Interchange	359,000	32,310	359,000	32,310
24.51	Diamond Bar & Grand Avenue Interchange	354,000	31,860	354,000	31,860
25.464	Diamond Bar (JCT/Route 57 North) & Orange Freeway Interchange	233,000	20,970	233,000	20,970
28.043	Pomona & Phillips Ranch Road Interchange	-	-	-	-
N/A	SR-57 & SR-60 Westbound Loop Ramp	13,400	1,206	3,400	306
N/A	SR-57 & SR-60 Westbound Slip Ramp	N/A	N/A	10,000	900
SR-57 Freeway¹					
3.167	Diamond Bar & Pathfinder Road Interchange	215,000	12,900	215,000	12,900
4.518	Diamond Bar (North JCT/Route 60) & Pomona Freeway Interchange	147,000	8,820	147,000	8,820
4.518	Diamond Bar (North JCT/Route 60) & Pomona Freeway Interchange	133,000	7,980	133,000	7,980
4.977	Diamond Bar & Sunset Crossing Road Interchange	-	-	-	-
Grand Avenue¹					
N/A	Grand Avenue North of SR-60 Westbound Ramps	50,420	2,521	50,420	2,521
N/A	Grand Avenue Between SR-60 Westbound and Eastbound Ramps	50,020	2,001	50,020	2,001
N/A	Grand Avenue South of SR-60 Eastbound Ramps	31,020	620	31,020	620

Notes:

Beginning point listed for each segment. End point is beginning of following segment.
 Mainline truck percentages on SR-60 are 9% and mainline truck percentages on SR-57 are 6%.
 Truck percentages on Grand Avenue north of SR-60 are 5%, between SR-60 westbound and eastbound ramps are 4%, and south of SR-60 eastbound ramps are 2%.

Adapted from: KOA Corporation 2009b

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Design-Year ADT

Postmile	Segment	2035 No Project	2035 No Project Truck ADT	2035 With Project	2035 With Project Truck ADT
SR-60 Freeway¹					
22.97	Diamond Bar & Brea Canyon Road Interchange	265,000	23,850	265,000	23,850
23.56	Diamond Bar (JCT/Route 57 South) & Orange Freeway Interchange	455,000	40,950	455,000	40,950
24.51	Diamond Bar & Grand Avenue Interchange	418,000	37,620	418,000	37,620
25.464	Diamond Bar (JCT/Route 57 North) & Orange Freeway Interchange	279,000	25,110	279,000	25,110
28.043	Pomona & Phillips Ranch Road Interchange	-	-	-	-
N/A	SR-57 & SR-60 Westbound Loop Ramp	24,000	2,160	3,600	324
N/A	SR-57 & SR-60 Westbound Slip Ramp	N/A	N/A	20,400	1,836
SR-57 Freeway¹					
3.167	Diamond Bar & Pathfinder Road Interchange	271,000	16,260	271,000	16,260
4.518	Diamond Bar (North JCT/Route 60) & Pomona Freeway Interchange	225,000	13,500	225,000	13,500
4.518	Diamond Bar (North JCT/Route 60) & Pomona Freeway Interchange	150,000	9,000	150,000	9,000
4.977	Diamond Bar & Sunset Crossing Road Interchange	-	-	-	-
Grand Avenue¹					
N/A	Grand Avenue North of SR-60 Westbound Ramps	76,560	3,828	76,560	3,828
N/A	Grand Avenue Between SR-60 Westbound and Eastbound Ramps	75,350	3,014	75,350	3,014
N/A	Grand Avenue South of SR-60 Eastbound Ramps	41,690	834	41,690	834

Notes:

Beginning point listed for each segment. End point is beginning of following segment.
 Mainline truck percentages on SR-60 are 9% and mainline truck percentages on SR-57 are 6%.
 Truck percentages on Grand Avenue north of SR-60 are 5%, between SR-60 westbound and eastbound ramps are 4%, and south of SR-60 eastbound ramps are 2%.

Adapted from: KOA Corporation 2009b

Describe potential traffic redistribution effects of congestion relief (impact on other facilities)

The proposed project is not anticipated to impact other facilities, so roads surrounding the project area were not analyzed (Knox pers. comm.). As shown in the ADT tables above, the proposed project is not anticipated to redistribute traffic between no-build and build conditions except for transferring traffic from the SR-57/SR-60 Westbound Loop Ramp to the new SR-57/SR-60 Westbound Slip Ramp. Therefore, the traffic volumes associated with the with project without project conditions are the same (i.e., the project provides better operation on Grand Avenue but is not a trip generator)¹. The table below shows the changes in delay and level of service (LOS) between no-build and build conditions.

LOS for With- and Without-Project Conditions

Westbound SR-60/Grand Avenue Ramp Intersection			
Scenario	Peak Hour	Delay^a	LOS
2013 No Project	AM Peak Hour	114.2	F
	PM Peak Hour	43.9	D
2013 With Project	AM Peak Hour	44.6	D
	PM Peak Hour	29.0	C
2035 No Project	AM Peak Hour	295.5	F
	PM Peak Hour	417.4	F
2035 With Project	AM Peak Hour	117.4	F
	PM Peak Hour	364.1	F
Eastbound SR-60/Grand Avenue Ramp Intersection			
Scenario	Peak Hour	Delay	LOS
2013 No Project	AM Peak Hour	45.3	D
	PM Peak Hour	137.4	F
2013 With Project	AM Peak Hour	24.8	C
	PM Peak Hour	22.7	C
2035 No Project	AM Peak Hour	117.7	F
	PM Peak Hour	141.8	F
2035 With Project	AM Peak Hour	65.0	E
	PM Peak Hour	138.9	F
^a Average delay in seconds/vehicle Adapted from: KOA Corporation 2009a			

As shown in the table above, implementation of the proposed project would result in operational improvements at the analyzed intersections (i.e., delay would improve). At the Westbound SR-60/Grand Avenue Ramp Intersection, build-year (2013) delay will be reduced from 114.2 seconds to 44.6 seconds for the a.m. peak hour. For the p.m. peak hour, delay will be reduced from 43.9 seconds to 29.0 seconds. Design-year (2035) delay for the Westbound SR-60/Grand Avenue Ramp Intersection will be reduced from 295.5 seconds to 117.4 seconds for the a.m. peak hour, and delay will be reduced from 417.4 seconds to 364.1 seconds for the p.m. peak hour.

For the Eastbound SR-60/Grand Avenue Ramp Intersection, 2013 delay will be reduced from 45.3 seconds to

¹ KOA Corporation, 2009a.

24.8 seconds for the a.m. peak hour. For the p.m. peak hour, delay will be reduced from 137.4 seconds to 22.7 seconds. Delay in 2035 will be reduced from 117.7 seconds to 65.0 seconds for the a.m. peak hour and from 141.8 seconds to 138.9 seconds for the p.m. peak hour. Consequently, the tables above indicate that implementation of the proposed project would meet the purpose and need of the project through improvements in intersection congestion (i.e., delay).

Comments/Explanation/Details (*attach additional sheets as necessary*)

ADT on SR-60 and SR-57 is anticipated to exceed the FHWA and EPA's POAQC threshold of 125,000, as shown in the ADT tables above. In addition, truck percentages on SR-60 are in excess of the FHWA and EPA's POAQC threshold of 8 percent.

However, the tables for both opening- and design-years indicate that implementation of the proposed project would not affect diesel truck traffic volumes or percentages between no build and build conditions. Consequently, the build alternative is not considered a POAQC for PM10 and PM2.5 because it would not have an effect to roadway diesel truck traffic volumes or percentages (i.e., effects to truck percentages are below 5% between the no-build and build alternatives). Because the project is not considered a POAQC, the CAA and 40 CFR 93.116 requirements were met without a qualitative hot-spot analysis.

References

Knox, Ronn. Associate Transportation Planner. KOA Corporation, Orange, CA. September 21, 2009—e-mail message from Ronn Knox to Shilpa Trisal and Dan Weddell regarding reasoning for not modeling streets in the project area.

KOA Corporation. 2009a. *Traffic Study Report Grand Avenue at SR-60/SR-57 Confluence Interim Improvements: City of Industry*. (Job Number: JA83130.) Orange, CA. Prepared for WKA, Inc.: Engineer and Planners, Santa Ana, CA.

KOA Corporation 2009b. *SR-57/SR-60 Westbound Slip Ramp Average Daily Traffic Volumes*. Orange, CA.

Preliminary Layout Plans

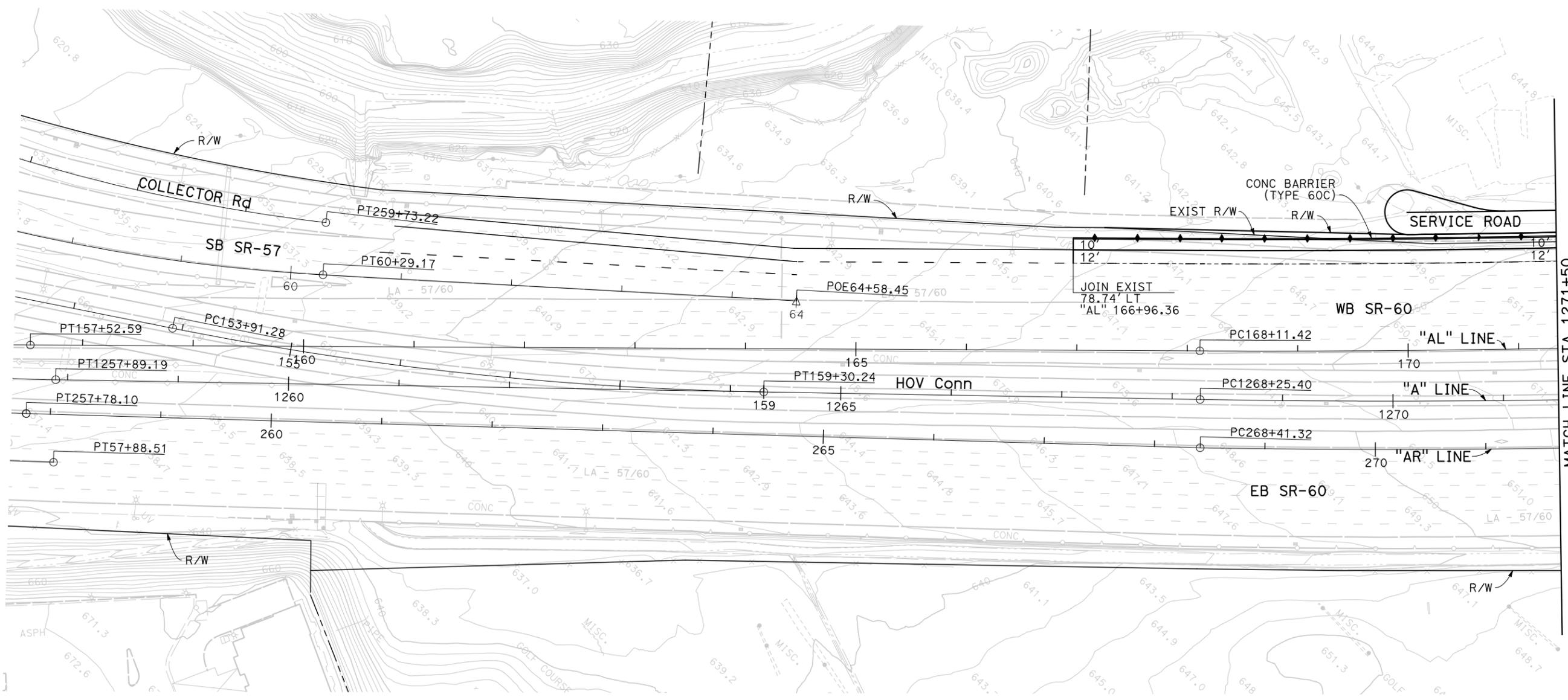
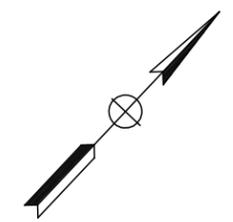
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	SR-60	R23.87-R24.48		

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans		CHECKED BY	DATE

**(PHASE-1)
 LAYOUT**
 SCALE 1"=100'

L-1



SEARCH:

PROGRAMS & PROJECTS

- Compass Blueprint
- Environment
 - Air Quality
 - Energy
 - Environmental Impact Reports
 - Environmental Justice
 - Intergovernmental Review
 - Solid & Hazardous Waste Management
 - Water
- Housing
- Local Profiles
- Overall Work Program
- Regional Comprehensive Plan
- Regional Transportation Improvement Program
- Regional Transportation Plan
- SB 375 Regional Implementation Process
- State of the Region
- Strategic Plan
- Transportation

REGIONAL COUNCIL

- Districts & Representatives
- Executive Officers
- Governing Structure

LEGISLATION

- State & Federal Programs
- Find Your Representative

DATA SERVICES

- Demographics, Trends & Statistics
- Emergency Information Network
- Goods Movement Database
- Integrated Growth Forecast
- Mapping & GIS
- Modeling

MEDIA & COMMUNICATIONS

- Press Room
- Publications & Reports
- SCAG TV - Streaming Videos

TCWG Project-Level PM Hot Spot Analysis Project Lists

Review of PM Hot Spot Interagency Review Forms

December 2009	Determination
1TL104 1TL104 Fig.	Not a POAQC - Hot Spot analysis not required
LA0D393 LA0D393 Attachment	Not a POAQC - Hot Spot analysis not required
RIV041052 RIV041052 Attachments	Not a POAQC - Hot Spot analysis not required
RIV090117 RIV090117 Attachments	Not a POAQC - Hot Spot analysis not required
RIV010206 RIV010206 Fig.	Not a POAQC - Hot Spot analysis not required

